

Banking Product Factory 3.2

User Guide

TOC

Overview	15
Banking Products Features	15
Additional Features	16
Integration with Formula Engine	16
Applications	16
Configurations	17
Installing Banking Product Factory 3.2	18
Dependencies	18
Pre-Installation Checklist	19
Installation Steps	19
Installing Banking Product Factory 3.2.1	24
Dependencies	25
Pre-Installation Checklist	25
Installation Steps	26
Security Roles	31
Predefined Banking Product Factory Security Roles	31
Managing Banking Products	41
Actions	42
Bank Accounts	43
Creating Bank Accounts	44
Product Classification Section	47
Availability Rules Section	51
Product Covenants Section	52
Interest & Commissions Section	53

Insurances Section	55
Discounts Section	56
Questions Section	58
Banking Product Formulas Section	60
Test Scenarios Section	62
Banking Product Documents Section	63
Banking Products Agreements Section	64
Self Bank Account Associated With The Product Section	65
Payment Allocation Settings Section	67
Mandatory Roles for Contract Approval Section	68
Return Of Goods Section	69
Closing Contract Settings Section	71
Allowed Transactions Section	72
Product Features Section	78
Product Destination Types Section	79
Associated Products Section	79
Current Accounts with Overdraft	81
Creating Current Accounts with Overdraft	82
Product Classification Section	85
General Data Section	87
Payment Schedule Types Section	96
Schedule Templates Section	98
Holiday Settings Section	99
Availability Rules Section	102
Product Covenants Section	103
Interest & Commissions Section	104
Insurances Section	106
Discounts Section	107
Questions Section	110
Banking Product Formulas Section	111

Test Scenarios Section	113
Banking Product Documents Section	114
Banking Products Agreements Section	115
Self Bank Account Associated With The Product Section	117
Payment Allocation Settings Section	118
Mandatory Roles for Contract Approval Section	119
Return Of Goods Section	121
Closing Contract Settings Section	123
Allowed Transactions Section	124
Product Features Section	131
Product Destination Types Section	131
Associated Products Section	132
Cards	134
Creating Cards	135
Product Classification Section	138
Product Guarantees Section	143
Payment Schedule Types Section	144
Schedule Templates Section	146
Holiday Settings Section	147
Availability Rules Section	150
Product Covenants Section	151
Interest & Commissions Section	152
Insurances Section	154
Discounts Section	155
Questions Section	157
Banking Product Formulas Section	159
Test Scenarios Section	161
Banking Product Documents Section	162
Banking Products Agreements Section	163
Self Bank Account Associated With The Product Section	164

Payment Allocation Settings Section	166
Mandatory Roles for Contract Approval Section	167
Return Of Goods Section	168
Closing Contract Settings Section	170
Allowed Transactions Section	171
Product Features Section	176
Product Destination Types Section	177
Associated Products Section	177
Credit Cards	179
Creating Credit Cards	180
Product Classification Section	183
General Data Section	185
Payment Schedule Types	186
Availability Rules Section	189
Product Covenants Section	189
Interest & Commissions Section	190
Insurances Section	192
Discounts Section	193
Questions Section	196
Banking Product Formulas Section	197
Test Scenarios Section	199
Banking Product Documents Section	200
Banking Products Agreements Section	201
Self Bank Account Associated With The Product Section	203
Payment Allocation Settings Section	204
Mandatory Roles for Contract Approval Section	205
Return Of Goods Section	207
Closing Contract Settings Section	209
Allowed Transactions Section	210
Product Features Section	215

Product Destination Types Section	216
Associated Products Section	216
Deposits	218
Creating Deposits	219
Product Classification Section	222
General Data Section	225
Availability Rules Section	234
Product Covenants Section	234
Interest & Commissions Section	236
Insurances Section	238
Discounts Section	239
Questions Section	241
Banking Product Formulas Section	243
Test Scenarios Section	245
Banking Product Documents Section	246
Banking Products Agreements Section	246
Self Bank Account Associated With The Product Section	248
Payment Allocation Settings Section	249
Mandatory Roles for Contract Approval Section	251
Return Of Goods Section	252
Closing Contract Settings Section	254
Allowed Transactions Section	255
Product Features Section	261
Product Destination Types Section	262
Associated Products Section	262
Leasings	264
Creating Leasings	265
Product Classification Section	268
General Data Section	271
Disburse Settings Section	272

Product Guarantees Section	273
Product Tranches Section	275
Payment Schedule Types Section	275
Schedule Templates Section	278
Holiday Settings Section	279
Availability Rules Section	283
Product Covenants Section	283
Interest & Commissions Section	284
Insurances Section	286
Discounts Section	287
Questions Section	290
Banking Product Formulas Section	291
Test Scenarios Section	293
Banking Product Documents Section	294
Banking Products Agreements Section	295
Self Bank Account Associated With The Product Section	297
Payment Allocation Settings Section	298
Mandatory Roles for Contract Approval Section	299
Return Of Goods Section	301
Closing Contract Settings Section	303
Allowed Transactions Section	304
Product Features Section	309
Product Destination Types Section	310
Associated Products Section	310
Mortgage Loans	312
Creating Mortgage Loans	313
Product Classification Section	316
General Data Section	319
Disburse Settings Section	320
Product Guarantees Section	320

Product Tranches Section	322
Payment Schedule Types Section	323
Schedule Templates Section	325
Holiday Settings Section	326
Availability Rules Section	329
Product Covenants Section	330
Interest & Commissions Section	331
Insurances Section	333
Discounts Section	334
Questions Section	337
Banking Product Formulas Section	338
Test Scenarios Section	340
Banking Product Documents Section	341
Banking Products Agreements Section	342
Self Bank Account Associated With The Product Section	344
Payment Allocation Settings Section	345
Mandatory Roles for Contract Approval Section	346
Return Of Goods Section	348
Closing Contract Settings Section	350
Allowed Transactions Section	351
Product Features Section	358
Product Destination Types Section	359
Associated Products Section	359
Overdrafts	361
Creating Overdrafts	362
Product Classification Section	365
General Data Section	368
Disburse Settings Section	368
Product Guarantees Section	369
Payment Schedule Types Section	370

Schedule Templates Section	373
Holiday Settings Section	374
Availability Rules Section	378
Product Covenants Section	378
Interest & Commissions Section	379
Insurances Section	381
Discounts Section	382
Questions Section	385
Banking Product Formulas Section	386
Test Scenarios Section	388
Banking Product Documents Section	389
Banking Products Agreements Section	390
Self Bank Account Associated With The Product Section	392
Payment Allocation Settings Section	393
Mandatory Roles for Contract Approval Section	394
Return Of Goods Section	396
Closing Contract Settings Section	398
Allowed Transactions Section	399
Product Features Section	406
Product Destination Types Section	407
Associated Products Section	407
Term Loans	409
Creating Term Loans	410
Product Classification Section	413
General Data Section	416
Disburse Settings Section	417
Product Guarantees Section	418
Product Tranches Section	420
Payment Schedule Types Section	420
Schedule Templates Section	423

Holiday Settings Section	424
Availability Rules Section	428
Product Covenants Section	428
Interest & Commissions Section	430
Insurances Section	432
Discounts Section	433
Questions Section	435
Banking Product Formulas Section	437
Test Scenarios Section	439
Banking Product Documents Section	440
Banking Products Agreements Section	440
Self Bank Account Associated With The Product Section	442
Payment Allocation Settings Section	443
Mandatory Roles for Contract Approval Section	445
Return Of Goods Section	446
Closing Contract Settings Section	448
Allowed Transactions Section	449
Product Features Section	456
Product Destination Types Section	456
Associated Products Section	457
Product Dimensions	460
Managing Interests and Commissions	461
Interests	462
Adding Interests	464
Interest Value	471
Interest Rates Collections	471
Banded Interests	472
Banking Formula Interest Rate	473
Interest Definition Best Practices	473
General Notes	474

Fixed Interest	474
Base Type Interest	475
Variable Interest	476
Collection Interest	477
Banded Interest for Current Accounts with Overdraft	478
Interest Lists	480
Adding Interest Lists	481
Commissions	481
Adding Commissions	483
Commission Definition Best Practices	490
General Notes	490
Editing The Value Of A Commission Already In Use	492
One-Time Fee (Once) Commissions	494
Periodical Commissions	496
Commissions Attached to Contract Transactions	497
Return Fee Commissions	499
Commission Lists	504
Adding Commission Lists	505
Item Filters	506
Insurance	508
Adding Insurances	509
Insurance Lists	511
Adding Insurance Lists	512
Discounts	513
Questions	515
Adding Questions	516
Deleting Questions	518
Exporting Questions	518

Product Filter	519
Adding Product Filters	519
Deleting Product Filters	521
Product Hierarchy	523
Product Class	523
Adding Product Classes	523
Product Subclass	524
Adding Product Subclasses	524
Product Category	525
Adding Product Categories	525
Product Subcategory	526
Adding Product Subcategories	526
Banking Product Classification	527
Adding Product Classifications	527
Payment Schedule Types	530
Schedule Element Class	530
Payment Schedule Types	530
Payment Schedule Type Column	547
Agreements	550
Adding Agreements	551
Banking Product Agreements	552
Banking Product Dictionaries	553
Allocation Method	554
Creating Allocation Methods	555
Banking Products	556
Banking Product Type	558
Creating Banking Product Type Records	559

Collateral Type	560
Creating Collateral Types	561
Commission Schema	563
Creating Commission Schemas	564
Commission Type	565
Creating Commission Types	566
Covenant	567
Creating Covenants	568
Loan Periodicity	569
Creating Loan Periodicity Records	570
Operation Item	571
Creating Operation Item Records	574
Product Destination Type	577
Creating Product Destination Types	578
Reconciliation Accounts	579
Creating Reconciliation Accounts	581
Reconciliation Accounts Usage in Core Banking	583
Transaction Type	585
Creating Transaction Types	586
Transaction Value Type	589
Transaction Item Accounting Configuration	591
Transaction Accounting Models	592
Banking Products' Life Cycle	595
Using Banking Products in Digital Journeys	596
Case Studies	627
Loan Equal Installment - Minimal Call	627
Loan Equal Principal Actual with Fees and Insurances	629
Loan Equal Installments with Residual Value	632

Data Visualization Example 634

Credit Card Schedule 637

Overview

The Banking Product Factory allows you to create and maintain banking products. A banking product can further be used in FintechOS digital journeys for processes such as loan origination or a hybrid journey for applying for more products. The banking products are configured from a graphical user interface while Banking Product Factory automatically populates and maintains the underlying data in a consistent data model. Consequently, you have a reliable data model for your product portfolio that you can reference when building digital journeys. Thus you can manage your product portfolio at will, without having to re-code your digital journeys every time a banking product is added, updated, or retired.

For instance, you can use Banking Product Factory to create a loan type with a specific amount interval, availability period, interest rate, commission, credit scoring criteria, etc. You can then use this type of loan as one of the options that are available to the applicant in a loan application digital journey. As your product portfolio evolves and you add new types of loans, modify some of the conditions for your products, or retire products, the options that show up (or no longer show up) in the loan application digital journey change automatically.

Banking Products Features

Banking Product Factory allows you to customize the product features. Here are some of the customizable features:

- Adjustable interest rates and commissions depending on commercial conditions or participation in campaigns;
- Full versioning functionality;
- Clone a banking product to create a new product based on an existing one;
- Product classification;
- Payment schedules;

- Guarantees;
- Availability periods;
- Scoring rules.

Additional Features

The following features are available when Banking Product Factory is implemented along with Core Banking:

- Core Banking related settings, such as transactions that can be performed on a banking product, reconciliation account associated with the product, mandatory roles for contract approval, payment allocation settings, or closing contract settings, found in the [Lean Core Settings](#) tab.
- Setting the specific accounts to be used by [Operational Ledger](#) for transactions performed on contracts based on a banking product, found in the [GL Settings](#) tab.

Integration with Formula Engine

Banking Product Factory leverages the capabilities of the [Formula Engine](#) to implement complex decision modeling for product availability, risk scoring, or insurance rules.

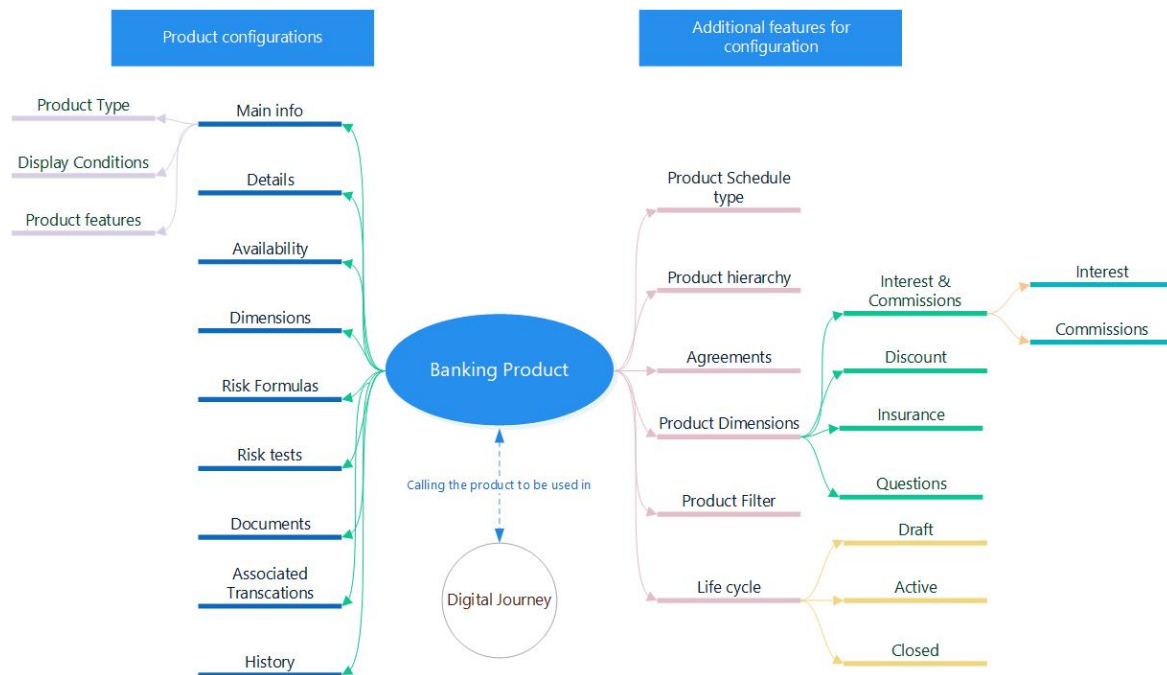
Applications

The Banking Product Factory can facilitate business processes, such as:

- Digital onboarding;
- Loan origination;
- Product portfolio management;
- Approval flows.

Configurations

The diagram below exhibits the extensive configurations applicable when creating a complete and esthetically pleasing banking product. The documentation explains the ramifications drawn below. You can start by establishing the product configurations for an individual product or by setting up the additional features and attaching them to a product.



Installing Banking Product Factory 3.2

Follow the steps described below to perform an automatic installation of the Banking Product Factory. This is a process of running a script, the `install_SysPack.bat` file, on your environment. The script automatically imports the content of the **Banking Product Factory v3.2** into your Innovation Studio.

IMPORTANT!

You must run the script on the machine where Innovation Studio is installed. Make sure you have access rights to Studio's database.

Dependencies

In order to install **Banking Product Factory v3.2**, first you need to install the following:

- **Innovation Studio** minimum version **v22.1.0.1**
- **SySDigitalSolutionPackages v22.1.0000**

IMPORTANT!

If you are installing **Banking Product Factory v3.2** on top of another version of Banking Product then you must previously run a **correction package**, named `BPFixInit.zip`. Find this package in the same **Banking Product Factory v3.2** archive file.

Pre-Installation Checklist

The SysPack has unique constraints on some of the standard entities like: FTOS_DFP_FlowSettings, FTOS_DFP_ProcessorSettings, FTOS_VersionSettings, FTOS_VersionSettingsItem, FTOS_EntityStatusSettings, FTOS_MKT_AudienceSegments, FTOS_MKT_Audience, and for all Banking Product entities.

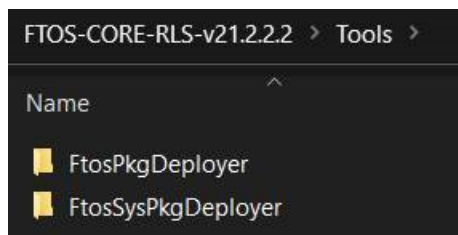
If you have already moved data using the **Configuration Data Deployment Package** menu, then you probably have already configured some unique constraints.

Before running the script, make sure you:

1. Disable the constraints that you have created on your environment, allowing the system to create the new ones after the Banking Product Factory v3.2 is imported.
2. Use the new **Configuration Data Definitions** imported with the Banking Product Factory v3.2 file when you export the data.

Installation Steps

1. Unzip your Banking Product v3.2.zip archive file.
2. Locate the *FtosSysPkgDeployer* folder in the FintechOS installation kit (the path is <unzipped_install_archive>\Tools\FtosSysPkgDeployer). You need it to install the Banking Product Factory v3.2.



3. Select and copy the *FtosSysPkgDeployer* folder.

4. Navigate to the location where you have unzipped the Banking Product v3.2.zip (let's call this location `<pkg_deployer_dir>`), then paste the `FtosSysPkgDeployer` folder there, within each and every zip file that comes with the package.

Banking Product v3.2	
Search Banking Product v3.2	
Name	Date modified
01.BPFixInit v3.2	5/4/2022 2:47 PM
02.Backup Settings v3.2	5/4/2022 2:48 PM
03.Banking Product Factory v3.2	5/4/2022 2:50 PM
04.Banking Product Factory Generic Security Roles v3.2	5/4/2022 2:50 PM

01.BPFixInit v3.2		
Search 01.BPFixInit v3.2		
Name	Size	Date modified
BPF_InitFix		5/4/2022 2:46 PM
FtosSysPkgDeployer		5/4/2022 2:47 PM
BPF_FixInit.zip	2 KB	5/4/2022 10:33 AM

02.Backup Settings v3.2		
Search 02.Backup Settings v3.2		
Name	Size	Date modified
Backup Restore Settings		5/4/2022 2:48 PM
FtosSysPkgDeployer		5/4/2022 2:48 PM
Backup Settings.zip	4 KB	5/4/2022 10:32 AM

03.Banking Product Factory v3.2		
Search 03.Banking Product Factory v3.2		
Name	Size	Date modified
Banking Product Factory SDK		5/4/2022 2:49 PM
FtosSysPkgDeployer		5/4/2022 2:48 PM
Banking_Product_Factory.zip	401 KB	5/4/2022 1:01 PM
README_install_dependencies.txt	0 KB	5/4/2022 2:49 PM
README_ReleaseNotes.txt	0 KB	5/4/2022 2:49 PM

04.Banking Product Factory Generic Security Roles v3.2		
Search 04.Banking Product Factory Generic Security Roles v3.2		
Name	Size	Date modified
FtosSysPkgDeployer		5/4/2022 2:48 PM
Banking_Product_Factory_Security_Roles.zip	33 KB	5/4/2022 10:33 AM

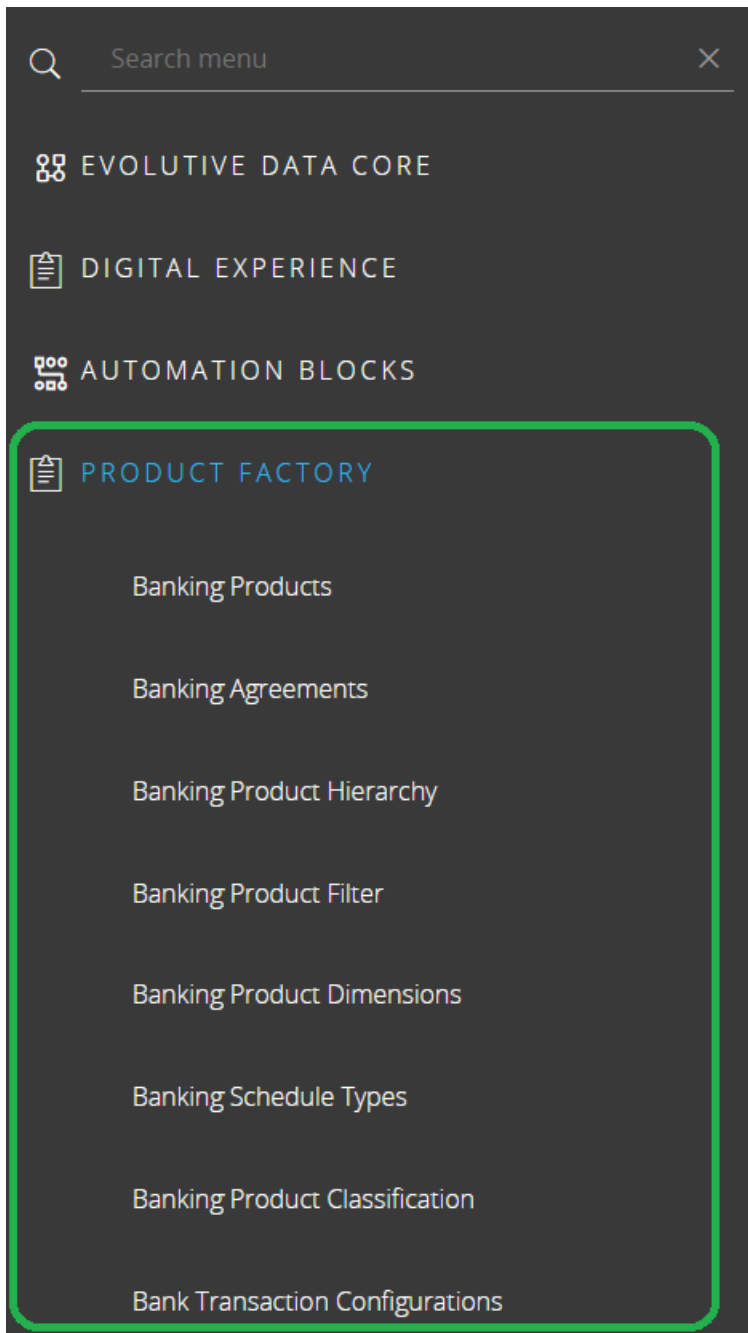
IMPORTANT!

Each zip file within the **Banking Product v3.2.zip** must be extracted and installed separately, in the given order!

If you decide not to use the default security roles that come with the package, simply skip the Banking Product Factory Generic Security Roles zip file.

5. Edit the `install_Syspack.bat` file. Replace the parameters described in the ["install_SysPack.bat Parameters Explanation" on page 23](#) section with your own values. Save and close the file.
6. Right-click `install_SysPack.bat` » Run as administrator.

The script starts running in your Windows console. Wait for it to finish. If your parameter values were correct, Innovation Studio has the **Banking Product** menu items visible after a refresh:



The `install_SysPack.bat` file allows you to import both the data model and the data:

install_SysPack.bat syntax for **Data Model** import

```
FtosSysPkgDeployer.exe -i -s "<StudioLink>" -u <AdminStudioUser> -p
<user_password> -z <DataBaseServer> -v <DB_user> -k <DB_user_
password> -d "<TheNameOfTheDataBase>" -r "<sypack_path>\01
DeploymentPackages\*.zip"
```

install_SysPack.bat syntax for **Data** import

```
FtosSysPkgDeployer.exe -g -s "<StudioLink>" -u <AdminStudioUser> -p
<user_password> -r "<sypack_path>\02
ConfigurationDataDeploymentPackages\*.zip"
```

NOTE

The syntax presented here is for information purposes only. Please run the actual `install_SysPack.bat` file.

install_SysPack.bat Parameters Explanation

- `<StudioLink>` - The web URL of the Innovation Studio installation, for example *http://localhost/ftos_studio*.
- `<AdminStudioUser>` - The username of the Innovation Studio user under which this import is executed. The user has to exist in Innovation Studio prior to this operation.
- `<user_password>` - The password for the Innovation Studio user.
- `<DataBaseServer>` - The name of the database server where the FintechOS installation database was created.
- `<DB_user>` - The username of the SQL Server user with administration rights on the FintechOS installation database.
- `<DB_user_password>` - The password for the above mentioned SQL user.
- `<TheNameOfTheDataBase>` - The name of the database where the Banking Product v3.2 is deployed.

- `<syspack_path>` - The physical path to the unzipped Banking Product v3.2 previously downloaded.

HINT

For more information about the script, please run `FtosSysPackageDeployer.exe` without any arguments to see the built-in help.

IMPORTANT!

If you're using **SQL Server Integrated Authentication**, make sure that the Windows user used for running the script has access to the FTOS database, with read/ write rights. Run the command without the SQL username/ password parameters.
If you're using **SQL Server Build In Authentication**, make sure that the SQL Server user has read/ write access to the FTOS database. Run the command with the SQL username/ password parameters.

Installing Banking Product Factory 3.2.1

HINT

This page contains the installation steps for Banking Product Factory v**3.2.1**. If you need to install the Banking Product Factory v**3.2**, follow the instructions on [this page](#).

Follow the steps described below to perform an automatic installation of the Banking Product Factory. This is a process of running a script, the `install_SysPack.bat` file, on your environment. The script automatically imports the content of the **Banking Product Factory v3.2.1** into your Innovation Studio.

IMPORTANT!

You must run the script on the machine where Innovation Studio is installed.
Make sure you have access rights to Studio's database.

Dependencies

In order to install **Banking Product Factory v3.2.1**, first you need to install the following:

- **Innovation Studio** minimum version **v22.1.0.1**
- **SySDigitalSolutionPackages v22.1.0001**

IMPORTANT!

If you are installing **Banking Product Factory v3.2.1** on top of another version of Banking Product then you must previously run a **correction package**, named **BPFixInit.zip**. Find this package in the same **Banking Product Factory v3.2.1** archive file.

Pre-Installation Checklist

The SysPack has unique constraints on some of the standard entities like: FTOS_DFP_FlowSettings, FTOS_DFP_ProcessorSettings, FTOS_VersionSettings, FTOS_VersionSettingsItem, FTOS_EntityStatusSettings, FTOS_MKT_AudienceSegments, FTOS_MKT_Audience, and for all Banking Product entities.

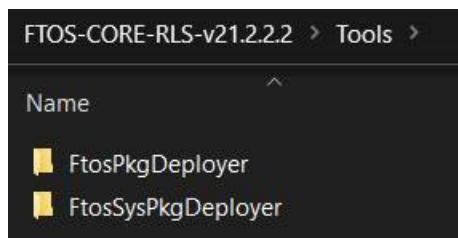
If you have already moved data using the **Configuration Data Deployment Package** menu, then you probably have already configured some unique constraints.

Before running the script, make sure you:

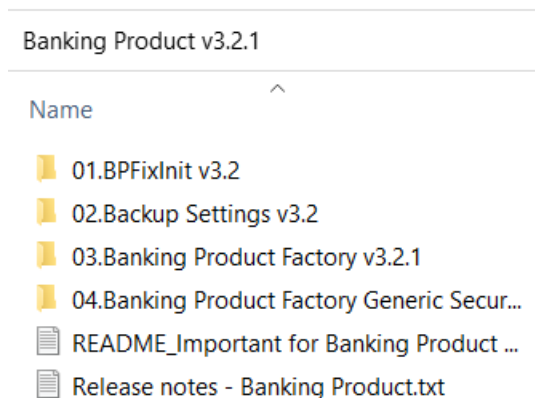
1. Disable the constraints that you have created on your environment, allowing the system to create the new ones after the Banking Product Factory v3.2.1 is imported.
2. Use the new **Configuration Data Definitions** imported with the Banking Product Factory v3.2.1 file when you export the data.

Installation Steps

1. Unzip your Banking Product v3.2.1.zip archive file.
2. Locate the *FtosSysPkgDeployer* folder in the FintechOS installation kit (the path is `<unzipped_install_archive>\Tools\FtosSysPkgDeployer`). You need it to install the Banking Product Factory v3.2.1.



3. Select and copy the *FtosSysPkgDeployer* folder.
4. Navigate to the location where you have unzipped the Banking Product v3.2.1.zip (let's call this location `<pkg_deployer_dir>`), then paste the *FtosSysPkgDeployer* folder there, within each and every zip file that comes with the package.



Banking Product v3.2.1 > 01.BPFixInit v3.2

Name

BPF_InitFix

FtosSysPkgDeployer

BPF_FixInit.zip

Banking Product v3.2.1 > 02.Backup Settings v3.2

Name

Backup Restore Settings

FtosSysPkgDeployer

Backup Settings.zip

Banking Product v3.2.1 > 03.Banking Product Factory v3.2.1

Name

Date modified

Banking Product Factory SDK

FtosSysPkgDeployer

Banking_Product_Factory.zip

README_install_dependencies.txt

README_ReleaseNotes.txt

5/17/2022

5/18/2022

5/17/2022

5/7/2022

5/7/2022

Banking Product v3.2.1 > 04.Banking Product Factory Generic Security Roles v3.2

Name

Date modified

Type

FtosSysPkgDeployer

Banking_Product_Factory_Security_Roles....

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5/7/2022 2:42 AM

File folder

Compress

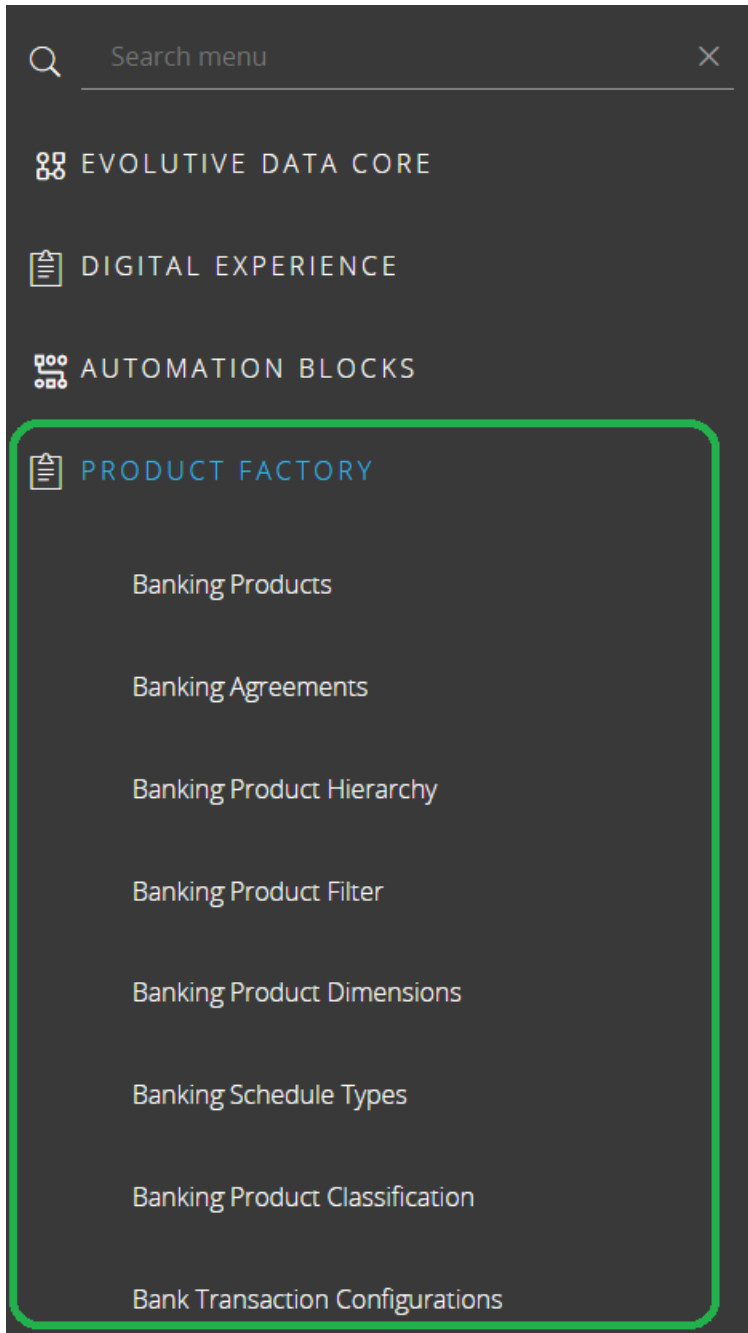
IMPORTANT!

Each zip file within the **Banking Product v3.2.1.zip** must be extracted and installed separately, in the given order!

If you decide not to use the default security roles that come with the package, simply skip the Banking Product Factory Generic Security Roles zip file.

5. Edit the `install_Syspack.bat` file. Replace the parameters described in the "[install_SysPack.bat Parameters Explanation](#)" on page 29 section with your own values. Save and close the file.
6. Right-click `install_SysPack.bat` » Run as administrator.

The script starts running in your Windows console. Wait for it to finish. If your parameter values were correct, Innovation Studio has the **Banking Product** menu items visible after a refresh:



The `install_SysPack.bat` file allows you to import both the data model and the data:

install_SysPack.bat syntax for **Data Model** import

```
FtosSysPkgDeployer.exe -i -s "<StudioLink>" -u <AdminStudioUser> -p
<user_password> -z <DataBaseServer> -v <DB_user> -k <DB_user_
password> -d "<TheNameOfTheDataBase>" -r "<sypack_path>\01
DeploymentPackages\*.zip"
```

install_SysPack.bat syntax for **Data** import

```
FtosSysPkgDeployer.exe -g -s "<StudioLink>" -u <AdminStudioUser> -p
<user_password> -r "<sypack_path>\02
ConfigurationDataDeploymentPackages\*.zip"
```

NOTE

The syntax presented here is for information purposes only. Please run the actual `install_SysPack.bat` file.

install_SysPack.bat Parameters Explanation

- `<StudioLink>` - The web URL of the Innovation Studio installation, for example *http://localhost/ftos_studio*.
- `<AdminStudioUser>` - The username of the Innovation Studio user under which this import is executed. The user has to exist in Innovation Studio prior to this operation.
- `<user_password>` - The password for the Innovation Studio user.
- `<DataBaseServer>` - The name of the database server where the FintechOS installation database was created.
- `<DB_user>` - The username of the SQL Server user with administration rights on the FintechOS installation database.
- `<DB_user_password>` - The password for the above mentioned SQL user.
- `<TheNameOfTheDataBase>` - The name of the database where the Banking Product v3.2.1 is deployed.

- `<syspack_path>` - The physical path to the unzipped Banking Product v3.2.1 previously downloaded.

HINT

For more information about the script, please run `FtosSysPackageDeployer.exe` without any arguments to see the built-in help.

IMPORTANT!

If you're using **SQL Server Integrated Authentication**, make sure that the Windows user used for running the script has access to the FTOS database, with read/ write rights. Run the command without the SQL username/ password parameters.

If you're using **SQL Server Build In Authentication**, make sure that the SQL Server user has read/ write access to the FTOS database. Run the command with the SQL username/ password parameters.

Security Roles

A security role is a set of privileges and levels of access to various actions/ functions within the High Productivity Fintech Infrastructure. Read the [Security Roles](#) topic for detailed information.

Banking Product Factory has a predefined security role specific for banking-related business needs. Banks can use the security roles to grant their employees access rights within its systems. Read the [Users](#) topic for information about associating security roles to users in Innovation Studio.

Banks can also create new security roles to fit their business needs. Read the [Creating Security Roles](#) topic for information about creating new security roles in Innovation Studio.

Predefined Banking Product Factory Security Roles

Banking Product Factory comes with the following predefined security roles that grant specific access rights to the users associated with such a role to the High Productivity Fintech Infrastructure's actions and functions:

Security Role	Description
Banking Product Admin	Users with this security role have read, insert, update and delete access rights to the banking product records within their organization. They can access and update all the entities related to the definition of banking products, and they can access all the banking menu items within the Product Factory menu.

IMPORTANT!

If a user is associated with more than one role, then the access rights are cumulative and the highest access right is granted.

The following sections offer detailed information about each security role's access rights to entities and endpoints within the High Productivity Fintech Infrastructure:

Banking Product Admin

A user with this security role has the following access rights to records in High Productivity Fintech Infrastructure's entities:

Entity	Scope	Read	Insert	Delete	Update
Account	Organization	1	0	0	0
approvalTask	Organization	1	1	0	1
AssociatedTransactions	Organization	1	1	1	1
attribute	Organization	1	0	0	0
entity	Organization	1	1	1	1
entitystatus	Organization	1	1	0	1
FT_Log_sp_exec	Organization	1	1	1	1
FTOS_BP_Agreement	Organization	1	1	1	1
FTOS_BP_BandedInterest	Organization	1	0	0	0
FTOS_BP_BankingProduct	Organization	1	1	1	1
FTOS_BP_BankingProduct_BW	Organization	1	1	1	1
FTOS_BP_BankingProduct_BWA	Organization	1	1	1	1
FTOS_BP_BankingProduct_X_FTOS_BP_ProductQuestion	Organization	1	1	1	1
FTOS_BP_BankingProductAgreement	Organization	1	1	1	1
FTOS_BP_BankingProductCommission	Organization	1	1	1	1

Entity	Scope	Read	Insert	Delete	Update
FTOS_BP_BankingProductDiscount	Organization	1	1	1	1
FTOS_BP_BankingProductDocument	Organization	1	1	1	1
FTOS_BP_BankingProductInsurance	Organization	1	1	1	1
FTOS_BP_BankingProductInterest	Organization	1	1	1	1
FTOS_BP_BankingProductMandatory Roles	Organization	1	1	1	1
FTOS_BP_BankingProductXFTOS_BP_BankingProduct	Organization	1	1	1	1
FTOS_BP_BankingProductXFTOS_BP_InterestCalcType	Organization	1	1	1	1
FTOS_BP_BankingProductXFTOS_BP_PaymentSchedType	Organization	1	1	1	1
FTOS_BP_BankingProductXFTOS_BP_ProductDestType	Organization	1	1	1	1
FTOS_BP_BankingProductXFTOS_BP_ProductGuarantee	Organization	1	1	1	1
FTOS_BP_BankingProductXMatrix	Organization	1	1	1	1
FTOS_BP_Category	Organization	1	1	1	1
FTOS_BP_Class	Organization	1	1	1	1
FTOS_BP_ClassificationType	Organization	1	1	1	1
FTOS_BP_CollateralType	Organization	1	1	1	1
FTOS_BP_Commission	Organization	1	1	1	1

Entity	Scope	Read	Insert	Delete	Update
FTOS_BP_CommissionList	Organization	1	1	1	1
FTOS_BP_CommissionListXFTOS_BP_Commission	Organization	1	1	1	1
FTOS_BP_CommissionSchema	Organization	1	1	1	1
FTOS_BP_CommissionType	Organization	1	1	1	1
FTOS_BP_CommissionValue	Organization	1	1	1	1
FTOS_BP_Covenant	Organization	1	1	1	1
FTOS_BP_Discount	Organization	1	1	1	1
FTOS_BP_Feature	Organization	1	1	1	1
FTOS_BP_Filter	Organization	1	1	1	1
FTOS_BP_FilterValue	Organization	1	1	1	1
FTOS_BP_Formula	Organization	1	1	1	1
FTOS_BP_FormulaType	Organization	1	1	1	1
FTOS_BP_GLAccounts	Organization	1	1	1	1
FTOS_BP_IncomeWeight	Organization	1	1	1	1
FTOS_BP_Insurance	Organization	1	1	1	1
FTOS_BP_InsuranceItem	Organization	1	1	1	1
FTOS_BP_InsuranceItemFilter	Organization	1	1	1	1
FTOS_BP_InsuranceList	Organization	1	1	1	1
FTOS_BP_InsuranceValue	Organization	1	1	1	1

Entity	Scope	Read	Insert	Delete	Update
FTOS_BP_InsuranceXFTOS_BP_InsuranceList	Organization	1	1	1	1
FTOS_BP_Interest	Organization	1	1	1	1
FTOS_BP_InterestCalculationType	Organization	1	1	1	1
FTOS_BP_InterestCommissionFilter	Organization	1	1	1	1
FTOS_BP_InterestCommissionFilterValue	Organization	1	1	1	1
FTOS_BP_InterestCommissionItem	Organization	1	1	1	1
FTOS_BP_InterestCommissionItemFilter	Organization	1	1	1	1
FTOS_BP_InterestList	Organization	1	1	1	1
FTOS_BP_InterestListXFTOS_BP_Interest	Organization	1	1	1	1
FTOS_BP_InterestRateMatrix	Organization	1	0	0	0
FTOS_BP_InterestValue	Organization	1	1	1	1
FTOS_BP_PaymentScheduleType	Organization	1	1	1	1
FTOS_BP_PaymentScheduleType_BW	Organization	1	1	0	1
FTOS_BP_PaymentScheduleTypeDetail	Organization	1	1	1	1
FTOS_BP_PaymentScheduleTypeDetailSource	Organization	1	1	1	1
FTOS_BP_ProductAvailabilityItemFilter	Organization	1	1	1	1

Entity	Scope	Read	Insert	Delete	Update
FTOS_BP_ProductClassification	Organization	1	1	1	1
FTOS_BP_ProductCovenant	Organization	1	1	1	1
FTOS_BP_ProductDestinationType	Organization	1	1	1	1
FTOS_BP_ProductDisbursement	Organization	1	1	1	1
FTOS_BP_ProductDiscountItemFilter	Organization	1	1	1	1
FTOS_BP_ProductGrace	Organization	1	1	1	1
FTOS_BP_ProductGuarantee	Organization	1	1	1	1
FTOS_BP_ProductGuaranteeStructure	Organization	1	1	1	1
FTOS_BP_ProductQuestion	Organization	1	1	1	1
FTOS_BP_ProductQuestion_BW	Organization	1	1	1	1
FTOS_BP_ProductQuestion_BWA	Organization	1	1	1	1
FTOS_BP_ScheduleElementClass	Organization	1	1	1	1
FTOS_BP_ScheduleTypeColumn	Organization	1	1	1	1
FTOS_BP_SubCategory	Organization	1	1	1	1
FTOS_BP_SubClass	Organization	1	1	1	1
FTOS_BP_SubClass_x_Account	Organization	1	1	1	1
FTOS_BP_TestScenario	Organization	1	1	1	1
FTOS_BP_TestScenarioOutput	Organization	1	1	1	1
FTOS_CALC_Formula	Organization	1	0	0	0

Entity	Scope	Read	Insert	Delete	Update
FTOS_CALC_FormulaInput	Organization	1	0	0	0
FTOS_CB_AllocationMethod	Organization	1	1	1	1
FTOS_CB_AllocationMethodDetail	Organization	1	1	1	1
FTOS_CB_Bank	Organization	1	1	1	1
FTOS_CB_BankAccount	Organization	1	1	1	1
FTOS_CB_BankAccountOperation	Organization	1	1	1	1
FTOS_CB_BankAccountOperationType	Organization	1	1	1	1
FTOS_CB_BankAccountTransaction	Organization	1	1	1	1
FTOS_CB_CalendarHoliday	Organization	1	1	1	1
FTOS_CB_ControlPanel	Organization	1	0	0	0
FTOS_CB_Holiday	Organization	1	1	1	1
FTOS_CB_OperationItem	Organization	1	1	1	1
FTOS_CB_PeriodicityType	Organization	1	1	1	1
FTOS_CB_TransactionFee	Organization	1	1	1	1
FTOS_CB_TransactionFeeItem	Organization	1	1	1	1
FTOS_CB_TransactionFeeItemFilter	Organization	1	1	1	1
FTOS_CB_TransactionFeeList	Organization	1	1	1	1
FTOS_CB_TransactionFeeValue	Organization	1	1	1	1
FTOS_CB_TransactionOperationType	Organization	1	1	1	1

Entity	Scope	Read	Insert	Delete	Update
FTOS_CB_TransactionProcessor	Organization	1	1	1	1
FTOS_CB_WeekDay	Organization	1	1	1	1
FTOS_CMB_Country	Organization	1	1	1	1
FTOS_CMB_Currency	Organization	1	1	1	1
FTOS_EntityStatusSettings	Organization	1	1	1	1
FTOS_GL_AccountingChart	Organization	1	0	0	0
FTOS_GL_AccountingScope	Organization	1	0	0	0
FTOS_GL_AccountingSystem	Organization	1	0	0	0
FTOS_GL_TransactionAccountingModel	Organization	1	0	0	0
FTOS_GL_TransactionItemAccountingConfig	Organization	1	0	0	0
FTOS_GL_TransactionType	Organization	1	1	1	1
FTOS_GL_TransactionValueType	Organization	1	0	0	0
FTOS_VersionSettings	Organization	1	0	0	0
FTOS_VersionSettingsItem	Organization	1	0	0	0
HolidayShiftCountries	Organization	1	1	1	1
optionset	Organization	1	0	0	0
optionsetitem	Organization	1	1	1	1
report	Organization	1	0	0	0

A user with this security role can access the following endpoints:

Endpoints
FTOS_BP_AddMatrixValues
FTOS_BP_CallFormula
FTOS_BP_CheckFromToDates
FTOS_BP_CheckMandatoryRoleXLimitType
FTOS_BP_CommissionSchemaDetail
FTOS_BP_EntityVersion
FTOS_BP_Formula_CreateDataMapping
FTOS_BP_GetAvailabilityFiltersOnProduct
FTOS_BP_GetAvailablePaymentsSchedule
FTOS_BP_GetAvailableProductDiscounts
FTOS_BP_GetAvailableProductFeatures
FTOS_BP_GetAvailableProductImage
FTOS_BP_GetAvailableProducts
FTOS_BP_GetAvailableProductsExtra
FTOS_BP_GetBankingProductDetails
FTOS_BP_GetCommissionDetail
FTOS_BP_GetCommissionInfo
FTOS_BP_GetInterestDetail
FTOS_BP_GetPeriodicityTypeInfo
FTOS_BP_GetPrimaryAttribute
FTOS_BP_GetProductDocuments
FTOS_BP_GetProductInsuranceList
FTOS_BP_GetProductInterestCommissionList
FTOS_BP_GetProductType
FTOS_BP_GetScheduleFields
FTOS_BP_IsEditableForm
FTOS_BP_SetBankingProductCommissionRules
FTOS_BP_SetBankingProductInsuranceRules
FTOS_BP_SetBankingProductInterestRules
FTOS_BP_Simulate
FTOS_BP_TestCallFormula
FTOS_CB_CalculatePMT
FTOS_CB_CountQuestionsOnProduct
FTOS_CB_GetQuestionsOnProduct
FTOS_CB_SaveCustomQuestion
FTOS_CheckGL
FTOS_CheckLicense
FTOS_Entity Version

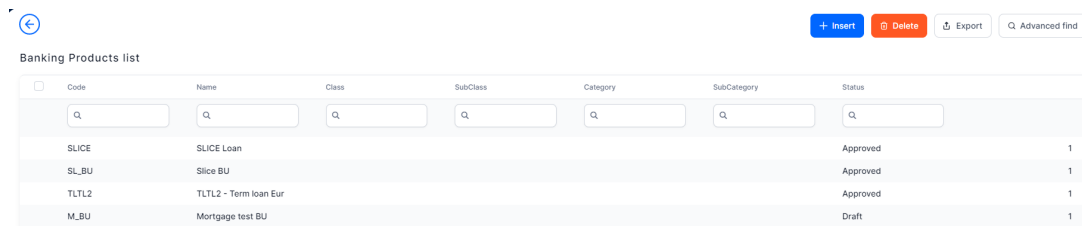
Endpoints
FTOS_EntityDuplicate
FTOS_IsRelatedEntities

Managing Banking Products

There is a great variety of banking products and hybrid products created in order to offer the best service to a customer. Our Banking Product List offers a global view of every product created in your High Productivity Fintech Infrastructure, allowing you to visualize and manage them. Based on viewing rights, a user has access to the existing products.

To manage banking products:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, click **Product Factory**.
4. Click **Banking Products** to open the **Banking Products List** page.



Code	Name	Class	SubClass	Category	SubCategory	Status	
SLICE	SLICE Loan					Approved	1
SL_BU	Slice BU					Approved	1
TLTL2	TLTL2 - Term loan Eur					Approved	1
M_BU	Mortgage test BU					Draft	1

On the **Banking Products List** page, you can:

- Add a new banking product by clicking the **Insert** button at the top right corner.
- Edit an existing banking product from the list by double-clicking it.
- Delete a banking product by selecting it and clicking the **Delete** button at the top right corner.

NOTE

For banking products in **Active** status, you can't change any of their related entities (such as features, discounts, product guarantee, interest or commission item, formula, test scenario, product covenant, product disbursement, product availability

item filter). To change any of the product's related entities, create a new version of the banking product record.

Actions

Due to the overwhelming number of possible products that can be created, the High Productivity Fintech Infrastructure has buttons that help shorten the processes of creating or managing a product. Such actions aid the user to quickly streamline several processes.

In the selected banking product's page, in the top right corner, a series of buttons (depicted below in **green**) trigger different actions.

The screenshot shows the 'Main Information' tab of a banking product record. At the top, there's a status bar with 'CURRENT STATUS: APPROVED' and 'NEXT STATUS: CLOSED'. Below this, product metadata is displayed: CODE: SLICE, PRODUCT: SLICE Loan, START DATE: 05/09/2020, END DATE: 31/12/2030, VERSION: 3, and VERSION DATE: 08/09/2021 10:44. A navigation bar contains tabs from 1 to 10. In the top right corner, four green buttons are numbered 1 through 4. The main form area is titled 'Main Information' and contains several input fields: Banking Product Type (Term Loan), Currency (RON), Banking Product Code (SLICE), External Code (SLICE), Start Date (05/09/2020), End Date (31/12/2030), Name (SLICE Loan), Class, SubClass, Category, and SubCategory.

- Button 1 triggers the **duplicate product** action. Thus, a new banking product with the current product's configurations is created. Both products are usable in a digital journey. For the duplicated product, the Banking Product code and Name should be changed according to your business needs.
- Button 2 creates a **new version of the exiting product**. The new version has to be approved before you start using it. If it is not approved, then the initial version can still be used..
- Button 3 is the **Save and reload** button.
- Button 4 opens the **Banking Product Business Workflow Transitions List**.

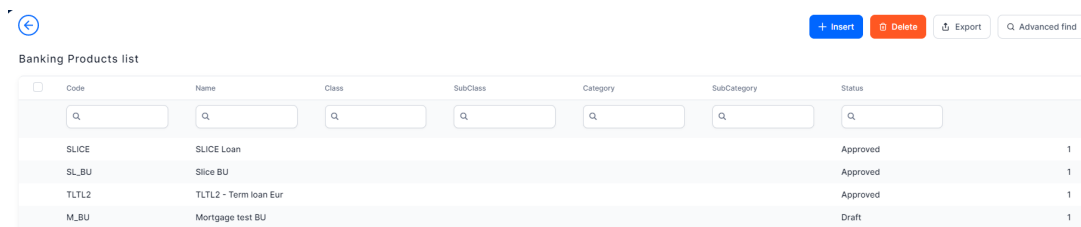
The following pages exhibit the possible major types of banking products.

Bank Accounts

The basic product for any bank is an account. Below are the possible configurations for a complete account, functional in any digital journey.

To manage banking products:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, click **Product Factory**.
4. Click **Banking Products** to open the **Banking Products List** page.



Code	Name	Class	SubClass	Category	SubCategory	Status	
SLICE	SLICE Loan					Approved	1
SL_BU	Slice BU					Approved	1
TLTL2	TLTL2 - Term loan Eur					Approved	1
M_BU	Mortgage test BU					Draft	1

On the **Banking Products List** page, you can:

- Add a new banking product by clicking the **Insert** button at the top right corner.
- Edit an existing banking product from the list by double-clicking it.
- Delete a banking product by selecting it and clicking the **Delete** button at the top right corner.

NOTE

For banking products in **Active** status, you can't change any of their related entities (such as features, discounts, product guarantee, interest or commission item, formula, test scenario, product covenant, product disbursement, product availability item filter). To change any of the product's related entities, create a new version of the banking product record.

Creating Bank Accounts

To create a new banking product, click the **Insert** button on the top right side of the page. A new page opens, with a series of tabs that assist you in configuring the banking product:

1. **Main Info** - The first tab requires the basic elements for the creation of a product such as product type, name, code, hierarchy and features.
2. **Details** - This tab requires further elements that build on the first tab such as interest, payment type, top-ups, withdrawals and associated products.
3. **Availability** - This tab determines the monetary range and the time frame when the product is available for customers.
4. **Dimensions** - This tab displays the interests, commissions, insurances, discounts and questions valid for a product.
5. **Product Formula Engine** - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. **Documents** - This tab contains all the attached documents available for a product.
7. **Lean Core Settings** - This tab holds Core Banking related settings, such as transactions that are done to and from a banking product, reconciliation account associated with the product, mandatory roles for contract approval, payment allocation settings, or closing contract settings are found in this tab.
8. **History** - This tab displays the versions of the product, along with workflow status and the user who modified the product.
9. **Origination Elements** - This tab holds the elements required in origination journeys, such as product benefits, display conditions, features, destination types, or associated products.

10. [GL Settings](#) - This tab contains the accounts to be used by Operational Ledger for transactions performed on contracts based on this banking product.

Main Info

The **Main Info** tab requires the basic elements for the creation of a product such as name, code, currency, validity, or product classification.

The following fields are available:

Field	Required	Data Type	Details
Main Information			
Banking Product Type	Yes	Option Set	<p>Choose one for the following:</p> <ul style="list-style-type: none"> • Bank Account • Card • Credit Card • Deposit • Leasing • Mortgage • Overdraft • Term Loan <div> <p>NOTE</p> <p>Your product type selection greatly influences the next steps. It is important to choose the right type of product to build.</p> </div>
Currency	Yes	Lookup	Choose the currency for this banking product.

Field	Required	Data Type	Details
Banking Product Code	Yes	Text	Enter the code of the product. It can have 10 characters and it is used in the contract. It uses a sequencer and the code of the product type.
External Code	No	Text	The code of the product imported from an external system, if applicable. It can have 10 characters and it is not used in the contract.
Start Date	Yes	Date	Select the date when the product becomes available.
End Date	Yes	Date	Select the last date from when the product is available. From that date forward, the product is no longer available.
Name	Yes	Text	Enter the name of the product.
Class	No	Option set	Select the class of the product. This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 523
Subclass	No	Option set	Select the subclass of the product. This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 523
Category	No	Option set	Select the category of the product. This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 523
SubCategory	No	Option set	Select the subcategory of the product. This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 523
Description			

Field	Required	Data Type	Details
Description	No	Text area	Write any description or additional text here.

Click the **Save and Reload** button at the top right corner of the page.

Product Classification Section

In the **Product Classification** section, you can insert or remove existing product classification items. To add a product classification item, click **Insert Existing** and select an already existing item.

Product Classification

<input type="checkbox"/>	Code	Name	Classification Type	Valid From	Valid To
<input type="text" value="Q"/>	<input type="text" value="Q"/>	<input type="text" value="Q"/>	<input type="text" value="Q"/>	<input type="text" value="Q"/>	<input type="text" value="Q"/>
	REG1	Classification ...	Regulatory	01/01/2020	31/12/2030

You can also create a new product classification item by clicking **Insert**. On the newly displayed **Add Product Classification** page, fill in the following fields:

←
✓

Add Product Classification

Main Information

Name	Code	Valid From	Valid To	Classification Type	Is Default
<input type="text" value="Reg 2"/>	<input type="text" value="REG2"/>	<input type="text" value="18/04/2022"/>	<input type="text" value="30/04/2029"/>	<input type="text" value="Regula..."/>	<input type="checkbox"/>

[Classified Banking Products](#)

Field	Required	Data Type	Details
Classification Type	Yes	Option set	Choose the classification type of the item. Possible values: Regulatory, Restructuring.
Name	Yes	Text	Enter the name of the classification item.
Code	Yes	Text	Enter the unique code of the classification item.

Field	Required	Data Type	Details
Is Default	Yes	Boolean	Select the checkbox if this classification item is default.
Valid From	Yes	Invariant Date	Select the date from which the product classification item is valid.
Valid To	Yes	Invariant Date	Select the date until when the product classification item is valid.

The **Banking Products Classification Section** is displayed after saving the classification item record and allows you to insert existing banking products. The following information is displayed here:

Field	Details
Code	The code of the banking product added to the product classification item.
Name	The name of the banking product.
Class	The class of the banking product.
SubClass	The subclass of the banking product.
Category	The category of the banking product.
SubCategory	The subcategory of the banking product.
Status	The status of the banking product record.

Click the **Save and Reload** button at the top right corner of the page.

IMPORTANT! For bank accounts, select Banking Product Type = **Bank Account**.

The screenshot displays the 'Banking Product Factory' application interface. At the top, a navigation bar contains tabs numbered 1 through 10: Main Info, Details, Availability, Dimensions, Product Formula Engine, Documents, Lean Core Settings, History, Origination Elements, and GL Settings. The 'Main Info' tab is active.

The 'Main Information' section includes several input fields:

- Banking Product Type:** A dropdown menu with 'Bank Account' selected.
- Currency:** A dropdown menu with 'EUR' selected.
- Banking Product Code:** A text field containing 'REG1_BAEUR'.
- External Code:** An empty text field.
- Start Date:** A date picker showing '19/10/2021'.
- End Date:** A date picker showing '19/10/2030'.
- Name:** A text field containing 'Bank Account EUR'.
- Class:** A dropdown menu.
- SubClass:** A dropdown menu.
- Category:** A dropdown menu.
- SubCategory:** A dropdown menu.

Below the 'Main Information' section is a large text area for the **Description**.

The **Product Classification** section is located at the bottom right. It features a table with columns: Code, Name, Classification Type, Valid From, and Valid To. Above the table are buttons for '+ Insert existing' and 'X Remove existing'. The table contains one row:

Code	Name	Classification Type	Valid From	Valid To
REG1	Classification ...	Regulatory	01/01/2020	31/12/2030

Details

The **Details** tab requires further elements such as interest, payment type, top-ups and withdrawals.

For the **General Data** section, the following fields are available:

Field	Required	Data Type	Details
Auto Roll Over	Yes	Boolean	If the checkbox is selected, the contract is automatically prolonged. This is used mostly for deposits or any product that can undergo the extension of contract.
Allow Top Ups	No	Boolean	Select the checkbox if sum you can top up the sum of money.
Allow Withdrawals	No	Boolean	Select the checkbox if the customer can withdraw money for this product.
Allow negotiated IR	No	Boolean	Select the checkbox if the interest rate is negotiable for this product.
Allow Overdraft	No	Boolean	Only displayed for current account type bank accounts. Select the checkbox if the current account has an overdraft functionality attached to it. Follow the information available on the Current Account with Overdraft page.
Interest Is Capitalized	Yes	Boolean	Only applicable if there is an interest rate. Select the checkbox if true.

Field	Required	Data Type	Details
Interest Payment Type	Yes	Option set	<p>Choose one from the following:</p> <ul style="list-style-type: none"> • Monthly • Maturity • Yearly • Daily • Quarterly.

NOTE

If you select the **Allow Top Ups** and **Allow Withdrawals** checkboxes, then the Top Up Account, Transfer between my bank accounts and Withdraw transaction types are automatically attached in the **Associated Transactions** tab.

Click the **Save and Reload** button at the top right corner of the page.

The screenshot shows the 'Details' tab of the Banking Product Factory interface. The 'General Data' section contains the following settings:

- Auto Roll Over:** ☐ (unchecked)
- Allow Top Ups:** ☒ (checked)
- Allow Withdrawals:** ☒ (checked)
- Allow negotiated IR:** ☐ (unchecked)
- Allow Overdraft:** ☐ (unchecked)
- Interest is Capitalized:** ☒ (checked)
- Interest Payment Type:** [none] (dropdown menu)

Availability

The **Availability** tab determines the monetary range and the time frame when the product is available for customers.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Product Formula Engine 6 Documents 7 Lean Core Settings 8 History 9 Origination Elements 10 GL Settings

Product Availability

Minimum Amount: Maximum Amount: Minimum Period: Maximum Period:

Availability Rules

Product Availability Item Filters:

Product Covenants:

Type	Covenant	Valid From	Valid to	Value
<input type="text" value="Q"/>	<input type="text" value="Q"/>	<input type="text" value="Q"/> <input type="text" value="Q"/>	<input type="text" value="Q"/> <input type="text" value="Q"/>	<input type="text" value="Q"/>

The following fields are available:

Field	Required	Data Type	Details
Minimum Period	No	Whole Number	The minimum duration of the product mentioned in the contract.
Maximum Period	No	Whole Number	The maximum duration of the product mentioned in the contract.
Minimum Amount	No	Whole Number	The minimum amount of the product for which the bank opens a contract.
Maximum Amount	No	Whole Number	The maximum amount of the product for which the bank opens a contract.

Availability Rules Section

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see "[Product Filter](#)" on page 519.

Availability Rules

Product Availability Item Filters

☐ Description

CA >< 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Product Covenants Section

In the **Product Covenants** section you can set certain conventions that applicants must abide by after getting the loan. This is usually applicable for corporate clients that must meet certain requirements in order to continue to receive disbursements.

Product Covenants

<div> <div>+ Insert</div> <div>X Delete</div> <div>Export</div> <div>Refresh</div> </div>					
<input type="checkbox"/>	Type	Covenant	Valid From	Valid to	Value
	<input type="text"/>	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/>
	Affirmati...	Borrowers should perform tax obligations	19/04/2022	20/04/2030	
	Financial	Lender can monitor borrower's current r...	19/04/2022	20/04/2030	

Click the **Insert** button to add a covenant to the product. Each covenant can be attributed a value, an availability period, and a review frequency in months. Read more about covenants in the "[Covenant](#)" on [page 567](#) page.

Click the **Save and Reload** button at the top right corner of the page.

Dimensions

The **Dimensions** tab displays the interests, commissions, insurances, discount and questions valid for a product.

1 Main Info
2 Details
3 Availability
4 Dimensions
5 Product Formula Engine
6 Documents
7 Loan Core Settings
8 History
9 Origination Elements
10 GL Settings

Interest & Commissions

+ Insert

X Delete

Export

Refresh

MCA

Discounts

+ Insert

X Delete

Export

Refresh

No data

Insurances

+ Insert

X Delete

Export

Refresh

House Insurance

Questions

+ Insert existing

X Remove existing

Question1 Active
Question2 Active

You can insert, delete or export interest, commissions, insurances, discounts or questions. To add a new one, click **Insert** and fill-in the fields detailed in the sections below.

NOTE

To configure the interest and commissions separately, navigate to **Main > Product Factory > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions Section

Click **Insert** to add an [interest](#) or a [commission](#). In the **Interest & Commission Item** page, fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Enter a code for this particular interest/ commission.
Item Name	Yes	Text	Enter a name.
Start Date	No	Date	The start date when the interest/ commission becomes effective.
End Date	No	Date	The end date for the interest/ commission.
Interest List	No	Option set	Select from which list the interest is a part of.
Commissions List	No	Option set	Select from which list the commission is a part of.
Minimum Interest Rate (%)	No	Numeric	Enter the percent applicable as a minimum interest rate at the contract level.
Is Negotiable	No	Boolean	Select the checkbox to specify that every interest, commission or margin field at the contract level is negotiable and can be edited.

Click the **Save and Reload** button at the top right corner of the page.

In the **Interest & Commission Item Filters** section, click **Insert** to insert an [item filter](#) and fill in the following fields:

Field	Required	Data Type	Details
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Value/ Date	No	Text/Date	Select the beginning value/ date for the filter.
Until Value/ Until Date	No	Text/Date	Select the maximum value/ date for the filter.
Description	No	Text area	This field is automatically filled in after clicking the Save and Reload button. The values/ dates inserted above are turned into an expression.
For Lookup attributes			
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Option Set	No	Option set	It is automatically filled in with the option set name created for the attribute.
Description	No	Text area	It is left blank. Add a description if needed.
Grid of Options	No	Grid	This field is automatically filled in after clicking the Save and Reload button. The values of the option set are displayed. Select the Boolean for the values you wish to include in the filter.



Save and close

Save and reload

Edit Interest & Commission Item Filter

Main Information

Filter

AL_Amount

↓

Value

1

Until Value

50,000

Description

AL_Amount >< 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Insurances Section

For any banking product, you can select a pre-existing insurance or create a new one. To add a new **insurance**, fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Insert a code for this particular insurance.
Item Name	Yes	Text	Insert a name.
Start Date	No	Date	It is the start date when the insurance becomes effective.
End Date	No	Date	It is the end date for the insurance.
Details	No	Text area	It is left blank. Add a description if needed.
Insurance List	No	Option set	Select from which list the insurance is a part of.

Click the **Save and Reload** button at the top right corner of the page.

In the **Insurance Item Filters** section, click **Insert** and fill in the following fields:

Field	Required	Data type	Description
Filter	Yes	Option set	The name inserted earlier.
Value	Yes	Text	The starting value for the attribute.
Until Value	Yes	Text	The ending value of the interval.

Field	Required	Data type	Description
Description	No	Text area	Insert the proper description for the availability filter.

Click the **Save and Close** button at the top right corner of the page.

Discounts Section

For any banking product, you can add discounts of any nature. You can select a pre-existing discount or create a new one.

Click the **Insert** button to add a new [discount](#). In the **Details** page, fill in the following fields:

Field	Required	Data Type	Details
Name	Yes	Text	Insert the appropriate name for the discount.
Discount	No	Option set	Choose one of the pre-configured types of discounts or create a new one. According to the selected type, new fields appear on the page requiring to be filled in.
Value discount	No	Numeric	Insert the value of the discount to be applied, e.g. 15.
Start date	Yes	Date	It is the start date when the discount becomes effective.
End date	Yes	Date	It is the end date for the discount.
Applied to dimension	No	Option set	Specifies for which product dimension this discount is applicable (interest, commission or insurance). This is autocompleted by the selected discount's dimension.

Field	Required	Data Type	Details
Commission type	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount. Specifies for which commission type this discount is applicable. This is autocompleted by the selected discount's default commission type.
Commission	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount. Specifies for which commission this discount is applicable. This is autocompleted by the selected discount's default commission.
Insurance class	No	Lookup	This field appears if the selected discount = Discount Life Insurance or Interest Discount. Specifies for which insurance class this discount is applicable (credit, home, life or other insurance class). This is autocompleted by the selected discount's insurance class.
Insurance	No	Lookup	This field appears if the selected discount = Discount Life Insurance. Specifies for which insurance this discount is applicable. This is autocompleted by the selected discount's insurance.
Interest type	No	Lookup	This field appears if the selected discount = Interest discount. Specifies for which interest type this discount is applicable.

Field	Required	Data Type	Details
Use Banking Formula	No	Boolean	If you select this checkbox, the discount is calculated using the Banking Formula engine.
Is optional discount?	No	Boolean	Selecting this checkbox results in the discount being applied only if the customer agrees to the discount.
Is percentage	No	Boolean	If you select this checkbox, the discount is calculated as a percentage from the contract's amount.
Destination entity	No	Option set	Select the entity where to register the discount. This field opens when the Is optional discount? checkbox is selected.
Destination entity attribute	No	Option set	Select the attribute where to register the discount. This field opens when the Is optional discount? checkbox is selected.

Click the **Save and Reload** button at the top right corner of the page.

In the **Product Discount Item Filter** section, click **Insert** and fill in the fields as specified in the **Product Filter page**. The fields displayed depend on the selected filter.

Click the **Save and Reload** button at the top right corner of the page.

Questions Section

Choose one or more questions to add to the banking product, or insert a new one.

To insert a new [question](#), click **Insert existing**, then click **Insert**. In the **Add Banking Product Question** page, fill in the following fields:

Field	Required	Data type	Description
Question	No	Text	Enter the appropriate name.

Field	Required	Data type	Description
Answer Type	No	Option set	Select the type of answer the customer has to give: <ul style="list-style-type: none"> • text • numeric • option set.
Answer Entity	No	Option set	Select the entity where the answer is stored.
Answer Field	No	Option set	Select the attribute where the answer is stored.

Click the **Save and Reload** button at the top right corner of the page.

The **Banking Products List** shows where the question is used.

IMPORTANT!

The question has to be activated in order for it to be added to the banking product.

Click the **Save and Close** button at the top right corner of the page.

For example, this is how a question is displayed in a digital journey in the FintechOS Portal:

The screenshot shows a digital journey interface. At the top, there's a navigation bar with 'CURRENT STATUS: INITIALIZED' and 'NEXT STATUS: CHOOSE STATUS'. Below this is a header 'EDIT LOAN APPLICATION'. The main content area is titled 'Eligibility Questions' and includes a sub-header: 'We ask for this information so that we can carry out the checks needed to consider you for a mortgage'. The form contains three fields: 'DEPOSIT SOURCE' with a dropdown menu showing 'Select...', 'RETIREMENT DATE' with a date picker, and 'RETIRED' with radio buttons for 'Yes' and 'No' (where 'No' is selected). A 'Finish' button is located at the bottom right of the form.

Product Formula Engine

The **Product Formula Engine** tab keeps formulas built with [Formula Engine](#) for the banking product. Such formulas can be used to determine the eligibility of a customer.

The screenshot shows the 'Product Formula Engine' tab in the Banking Product Factory. It contains two main sections: 'Banking Product Formulas' and 'Test Scenarios'. Each section has a search bar with filters for 'Name', 'Formula Type', and 'Formula'. Below the filters, there are buttons for '+ Insert', 'X Delete', 'Export', and 'Refresh'. In the 'Banking Product Formulas' section, a formula is listed with Name 'CA', Formula Type 'CommissionFormula', and Formula 'commissionByAmount'. In the 'Test Scenarios' section, a formula is listed with Name 'Duplicate-19-04-2022_11:07:57' and Formula Type 'CommissionFormula'.

Banking Product Formulas Section

In the **Banking Product Formulas** section, choose an already defined formula or click **Insert** to configure a new one, for example a formula for eligibility or scoring purposes. For information on how to build a formula, see [Define Formula Inputs](#).

In the **Add Banking Product Formula** page, fill in the following fields:

The screenshot shows the 'Edit Banking Product Formula' page. At the top, there are buttons for 'Save and close' and 'Save and reload'. Below the title 'Edit Banking Product Formula', there is a 'Main Information' section. It contains four fields: 'Name' (with value 'CA'), 'Banking Product' (with a 'Duplicate' button), 'Formula Type' (with value 'CommissionFormula'), and 'Formula' (with value 'commissionByAmount'). Each field has a dropdown arrow and a pencil icon. Below these fields is a 'Data Mapping' section with a field containing the value 'BPFormulaType_Test Formula_3647267821582_formula'. A 'Map Data' button is located at the bottom right of the 'Data Mapping' section.

Field	Required	Data type	Description
Name	Yes	Text	Enter an appropriate name.
Banking Product	No	Option set	The name of the banking product is inserted automatically.
Formula Type	Yes	Lookup	Select the type of formula configured before, e.g. scoring /eligibility.

Field	Required	Data type	Description
Formula	Yes	Lookup	Select the previously configured formula. <div style="border: 1px solid #f0a060; padding: 10px; background-color: #fff9e6;"> <p>IMPORTANT!</p> <p>The formula must be activated before attaching it to a product.</p> </div>
Data Mapping	No	Lookup	Select the previously configured data mapping.

After selecting the desired formula, click **Save and reload**, then click **Map Data**.

← Save and close Save and reload

1 Definition 2 Input 3 Output

Formula parameter mapping

Data Mapping Type Banking Product

Master Entity FTOS_CB_Contract

Operation Name test

Name BPFormulaType_Test Formula_1647267821582_formula

In the **Formula Mapping** page, click **Input** and configure the input data for the formula.

Click **Output** and configure the output for the formula.

← Save and close Save and reload

1 Definition 2 Input 3 Output

FTOS_CB_Contract - Output

× step1 click to map

Click the **Save and Close** button at the top right corner of the page.

Such formulas can be used in digital journey steps, for example when the customer inserts their financial data.

EDIT RETAIL APPLICANT DATA

Income & Outgoings

We use your expected income and outgoings to work out how much we'll be able to lend and to ensure that any mortgage we may offer you is affordable.

WHAT IS YOUR ANNUAL SALARY BEFORE TAX? €

PAYING MONTHLY FOR OTHER LOANS: €

TOTAL CREDIT CARDS LIMITS: €

OTHER SPENDINGS: €

LIFE, HEALTH INSURANCE AND PRIVATE PENSIONS

ARE YOU MARRIED? [none]

NUMBER OF CHILDREN: 0

CHILDCARE AND EDUCATION COSTS: €

HOW MANY FINANCIAL DEPENDANTS: 0

MAINTENANCE FOR DEPENDANTS:

EDUCATION LEVEL: [none]

EMPLOYMENT STATUS: [none]

EMPLOYMENT MONTHS:

YOUR RESIDENCE IS: [none]

YOUR RENT IS:

Test Scenarios Section

A good practice is to test the formula before displaying it in a digital journey. You can do that in the **Test Scenarios** section.

Click **Insert** to open the **Add Test Scenario** page.

Insert a **Test Scenario Type** from the option set. The keys and the values are shown. Click the **Save and Reload** button at the top right corner of the page.

← Save and close Save and reload

Edit Test Scenario

Main Information

Test Formula Type CommissionFormula

Key	Value
Amount	23.45

☐ Save Output Data **Calculate**

Test Scenario Outputs

+ Insert X Delete Export Refresh

Click the **Calculate** button. The outputs are displayed in the **Test Scenario Outputs** section. These outputs can be saved by selecting the **Save Output Data** checkbox next to **Calculate**.

Documents

The **Documents** tab contains all the attached documents available for a product.

Banking Product Documents Section

The previously associated documents are displayed in the **Banking Product Documents** section.

To attach a new document to the banking product, click **Insert** and fill in the following fields:

Field	Data Type	Description
Operation Code	Whole number	Enter a code for the document.
Banking Copies No	Whole number	Insert the number of copies made.
Report	Lookup	Select a document from the list.
Document Type	Option set	Select a document type from the list.
Is Mandatory	Boolean	Select if the document is mandatory.
Includes Debtor	Boolean	Select if the document includes the debtor.
Includes Coborrower	Boolean	Select if the document includes the co-borrower.
Requires Signature	Boolean	Select if the document requires to be signed.
Is accord	Boolean	Select if the document represents the accord.

Click the **Save and Close** button at the top right corner of the page.

Banking Products Agreements Section

The agreements that a customer needs to go through are displayed in the **Banking Products Agreements** section.

To attach a new agreement to the banking product, click **Insert** and fill in the following fields:

Field	Required	Data Type	Description
Agreements	Yes	Option set	Select an agreement from the list.
Banking Product	Yes	Option set	It is automatically filled in.
Code	No	Whole number	Insert the corresponding code.
Is Mandatory	No	Boolean	Select if the agreement is mandatory for the product.

Click the **Save and Close** button at the top right corner of the page.

For more information on how to configure a contract or an agreement, see the [Digital Document Processor](#).

Lean Core Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

Transactions types that are performed to and from a banking product are displayed in the **Lean Core Settings** tab. The tab also holds information about the reconciliation account associated with the products, mandatory roles for

contract approval, payment allocation settings, the treatment of returned goods for contracts based on this banking product (only for Term Loans and Mortgage banking products), and closing contract settings.

Self Bank Account Associated With The Product Section

For each banking product, you must select a reconciliation account, which is the bank account to be used for transactions.

Next to the **Reconciliation Account** field, select a value from the list to be the current account from which or to which the money is wired from or to.

NOTE

This account must have the same currency as the product, because the translations are performed from and into this account.

Select a value for the **Negative Value Treatment** drop-down to specify how Core Banking treats situations when the funds of the reconciliation account associated with the banking product used in the contract would go below zero if a disbursement event would be approved. The possible values are:

- **Error** - there is an error message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can't be approved and the balance can't go below zero. Select this value if you want to block any transactions that would result in a negative balance of the reconciliation account associated to the banking product.
- **Warning** - there is a warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can be approved and the balance can go below zero.
- **NoMessage** - there is no error or warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account. The event can be approved and the balance can go below zero.

NOTE

Core Banking also has a system parameter, `ReconciliationAccountTreatment`. That is a system-wide setting, applicable to events for contracts based on all banking products without a specified `Negative balance treatment` value. Core Banking takes into consideration the settings used at the banking product level (the `Negative balance treatment` field's value). Thus, if the value is specified at the banking product level, then that value takes precedence over the system parameter's setting.

If you associate the same reconciliation account to more than one banking product, then the setting selected in banking product A is applied for contract events based on banking product A, while for the banking product B, Core Banking would apply the setting selected at the level of banking product B.

Payment Allocation Settings Section

This section holds the payment allocation settings. This is where you can decide which allocation method should be used to determine the order in which credit items are prioritized when repaying loans, credit accounts, and so on. You can also define the grace period settings.

Payment Allocation Settings

Repayment Allocation Method	Grace Days for Repayment	Penalty for grace period
<div>CostOrder</div> <div>↓ ✎</div>	<div>5</div>	<input type="checkbox"/>

Fill in the following fields:

Field	Required	Data Type	Details
Payment Allocation Method	No	Lookup	The payment allocation method represents the recovery order of amounts from payment notifications. Select a payment allocation method from the list.
Grace Days for Repayment	No	Whole number	Insert the number of days for which the bank expects a payment without calculating penalty.
Penalty for grace period	No	Boolean	If you select the checkbox, the penalty interest is applied on the loan contract without taking into consideration the grace period defined at contract level, being calculated for the difference between system date - due date, if the grace period passed and the customer didn't pay the due amounts. If you leave this checkbox unselected, the penalty interest is applied on the loan contract taking into consideration the grace period defined at contract level, being calculated for system date - due date + grace days for repayment.

Click the **Save and Reload** button at the top right corner of the page.

Mandatory Roles for Contract Approval Section

The **Mandatory Roles** section allows you to add the roles of the participants that are mandatory to exist at the contract level for contracts based on this banking product. In other words, when creating contracts based on banking products with Merchant role in this section, you must add a customer with the same Merchant role as contract participant, otherwise, the contract cannot be approved. When **Search Limit** is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role, in this case **Merchant Exposure**.

Mandatory Roles for Contract Approval

The screenshot shows the 'Mandatory Roles for Contract Approval' section. At the top right, there are four buttons: '+ Insert', 'X Delete', 'Export', and 'Refresh'. Below these buttons is a table with two columns: 'Role' and 'Search Limit'. The 'Role' column has a search input field with a magnifying glass icon and a dropdown menu. The 'Search Limit' column has a dropdown menu with '(All)' selected. Below the table, there is a 'Beneficiary' label and a checkbox.

In the **Mandatory Roles** section, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Lookup	The banking product for which you define mandatory roles. This is automatically completed with the current banking product.
Role	Yes	Option Set	Select the role of the participants that are mandatory to exist at the contract level for contracts based on this banking product.

Field	Required	Data Type	Details
Search Limit	Yes	Boolean	<p>When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role.</p> <p>If you select a role not associated with a customer limit type in Core Banking, the Search Limit field becomes read-only and unselected.</p>

← Add Mandatory Role

Save and close Save and reload Save and new

Main Information

Banking Product Duplicate Role Merchant Search Limit ☒

Click the **Save and Reload** button at the top right corner of the page.

Return Of Goods Section

IMPORTANT!

This section is displayed only for **Term Loan** and **Mortgage** banking products.

The fields within this section allow you to define whether a contract based on the banking product can have Returned Amount or Goods transactions or not, and the specific conditions for these transactions. The Returned Amount or Goods transaction type can be used when a customer returns all or part of a loan or mortgage in a short while after contract creation, if the banking product was defined to allow such transactions. You can set up Return Fee type commissions, to return all or some of the claimed commission to the borrower.

To configure the treatment of returned goods for contracts based on this banking product, fill in the following fields:

Field	Required	Data Type	Details
Allow Return Of Goods	Yes	Boolean	Select this checkbox if the contracts based on this banking product accept Return of Goods transactions. Default value: False. If selected, the Accepted Days For Return and Return Message fields are displayed, otherwise, these fields are not visible.
Accepted Days For Return	Yes	Whole Number	Specify the number of days after contract creation during which the return of goods transaction can be created and approved.
Return Message	Yes	Option Set	<p>Select the behavior of messages generated by Core Banking for situations when the Returned Amount or Goods transaction's approval date + the number of accepted days for return \geq the current date. Possible values are taken from the Warning Error Treatment option set. According to the desired behavior, choose:</p> <ul style="list-style-type: none"> • Error, if the transaction should not be approved and an error message should be displayed; • Warning, if the transaction can be approved, but a warning message should be displayed; • NoMessage, if the transaction can be approved without any messages.

Return Of Goods

Allow Return Of Goods



Accepted Days For Return

Return Message

Warning

Click the **Save and Reload** button at the top right corner of the page. If Allow Return Of Goods = True, then the Returned Amount of Goods transaction is automatically added to the **Transaction Types** section.

Closing Contract Settings Section

IMPORTANT!

This section is displayed only for **Term Loan** and **Mortgage** banking products.

In the **Closing Contract Settings** section, you can configure the default closure settings for contracts based on this banking product.

Closing Contract Settings

Buffer Close Days

Close Real Time



Closing Is Flexible



Contract Is Closed Automatically



Fill in the following fields:

Field	Required	Data Type	Details
Buffer Close Days	No	Whole Number	Enter the number of days used as buffer before automatically closing the contract when the contract reaches maturity and its balance reaches zero. If Buffer Close Days > 0, then Contract Is Closed Automatically = False.

Field	Required	Data Type	Details
Close Real Time	No	Boolean	If you select this checkbox, the contract based on this banking product is closed in real-time, when the contract reaches maturity and its balance reaches zero, without waiting for the end of day processes. If Close Real Time = True, then Buffer Close Days = 0 and Contract Is Closed Automatically = True.
Closing Is Flexible	No	Boolean	If you select this checkbox, the closure details of the contract based on this banking product can be modified at the contract creation.
Contract Is Closed Automatically	No	Boolean	If you select this checkbox, the contract based on this banking product is closed automatically at maturity, if the balance reaches zero. If Contract Is Closed Automatically = False, then Close Real Time = False.

Click the **Save and Close** button at the top right corner of the page.

Allowed Transactions Section

In the **Allowed Transactions** section, you can associate possible transaction types with the selected banking product. Click **Insert existing** and select the desired transaction types.

Double-click a selected transaction type to edit it.

Transaction Configuration

Save and close

Save and reload

Edit Transaction Type

Settings

Name

Disbursement

Transaction Code

DSB

Process Type

Disbursement

Edit Form

FTOS_CB_EventDisbursement

Transaction Operation Type

Disbursement

Is System Transaction

☐

Is Automatic Transaction

☐

Real Time Process

☐

Only One Draft

☒

Generate New Contract Version

☐

Commission Type

Return Commission Type

Accounting Configurations

Generates Accounting Entry

☒

OL Master Entity

FTOS_CB_ContractEvent

Purge Configurations

To Be Purged

☒

Purge Number of Days

30

Master Purge Entity

FTOS_CB_ContractEvent

Transaction Value Types

+ Insert

X Delete

Export

Refresh

☐ Transaction Type

Type

Value Type Name

Is Header

Value Type Attrib...

(All)

Transaction Item Accounting Configurations

+ Insert

X Delete

Export

Refresh

☐ Transaction...

Accountin...

Accountin...

Chart Acc...

Currency

Operation...

Take From...

In the **Edit Transaction Type** section, fill in the following fields:

Field	Required	Data Type	Details
Settings			
Name	Yes	Text	Name of the transaction type.
Transaction Code	Yes	Text	The code of the transaction type.
Is Automatic Transaction	Yes	Boolean	This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations.
Is System Transactions	No	Boolean	This checkbox marks the transaction as being neither a credit of the account, nor an allocation of funds, but a transaction that does not influence other transactions within the account. System transactions are meant to be used only for accounting.

Field	Required	Data Type	Details
Real Time Process		Boolean	This checkbox marks the transaction as to be processed in real-time. If the value is True, then the transaction is processed right away. If the value is False, then the transaction is inserted as a bank account transaction queue record.
Edit Form	No	Lookup	The form used to edit this transaction type. The lookup only shows forms defined on the Contract Event entity.
Only One Draft	No	Boolean	If you select this checkbox, there can be only one record of this transaction type in Draft status created at the contract level.
Generate New Contract Version	No	Boolean	This checkbox allows you to specify if a new contract version should be generated by this transaction type.
Commission Type	No	Lookup	The commission type applicable for this transaction type. Return fee commissions are filtered out and can't be selected.
Return Commission Type	No	Lookup	The return fee commission type applicable for this transaction type. Only return fee commissions can be selected.

Field	Required	Data Type	Details
Process Type	Yes	Option set	<p>This field associates the process type with the transaction operation type, which makes the connection with the transaction motor of bank accounts. Select one of the processes defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div>
Accounting Configurations			
Generates Accounting Entry	Yes	Boolean	This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity.
OL Master Entity	Yes	Lookup	The entity referenced by the accounting systems.
Purge Configurations			
To Be Purged	No	Boolean	This checkbox marks the transaction as purgeable. If selected, it allows you to purge or archive records in Draft status.
Purge Number of Days	Yes	Whole Number	The default number of calendar days that a record can be kept in Draft status before it is purged. For additional information, see the Core Banking System Parameters page. This field is displayed only when To Be Purged = True.

Field	Required	Data Type	Details
Master Purge Entity	Yes	Lookup	The master purge entity under which the draft records are. This field is displayed only when To Be Purged = True.

You can also edit the information in the **Transaction Value Types**, **Transaction Item Accounting Configurations** and **Transaction Accounting Models** sections. Read more details about Transaction Types in the **Operational Ledger** User Guide.

Click the **Save and Close** button at the top right corner of the page.

The following transaction types are typically used for bank accounts:

- **Top Up Account** - If added at banking product level, the customer is allowed to make top ups at the contract level. When a top up transaction is recorded in a contract, at the next maturity date the customer receives the interest for the initial amount up until the top up date, plus the interest for the full amount (initial amount + top up amount) proportional from top up to payment date.
This transaction type is automatically added in the **Associated Transactions** tab if **Allow Top Ups** was selected in the **Details** tab.
- **Withdraw** - If added at banking product level, the customer is allowed to make withdrawals at the contract level.
This transaction type is automatically added in the **Associated Transactions** tab if **Allow Withdrawals** was selected in the **Details** tab.
- **Transfer between my bank accounts** - If added at banking product level, the customer is allowed to move funds between their accounts at the contract level.
This transaction type is automatically added in the **Associated Transactions** tab if **Allow Withdrawals** was selected in the **Details** tab.
- **Accruals and Provisions** - System transaction. If added at banking product level, the accruals and provisions for contracts can be calculated on a daily basis.
This transaction type is not added automatically. Make sure you insert

it in the **Associated Transactions** tab.

- **Revert Transfer between my bank accounts - System** transaction. If added at banking product level, transfers between the same customer's bank account can be reverted after being performed. This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

NOTE

If you selected the **Allow Top Ups** and **Allow Withdrawals** checkboxes within the **Details** tab, then the Top Up Account, Transfer between my bank accounts and Withdraw transaction types are automatically attached in the **Associated Transactions** tab.

History

The **History** tab displays the versions of the banking product, their workflow status and the user who modified the product.

Label	Name	attributeVersionDate	attributeVersion	Modified by user
Draft	Duplicate	19/04/2022 10:29	1	

Here you can track the product's life cycle and review older versions that are no longer active (for details, see ["Banking Products' Life Cycle"](#) on page 595).

Origination Elements

The **Origination Elements** tab holds the elements required in origination journey, such as product benefits, display conditions, features, destination types, or associated products.

You can fill in the following fields:

Field	Required	Data Type	Details
Product Image	No	File	Insert an image representative for the product.
Document	No	File	Insert the document representative for the product.
Benefits	No	Text area	Insert the advantages of owning the banking product. You can format the text in the text editor window.
Display Conditions	No	Text area	Insert the conditions for the applicant, e.g. age limit, annual turnover, education level, income, registration documents.

Click the **Save and Reload** button at the top right corner of the page.

Product Features Section

In the **Product Features** section, you can insert, delete or export features. To add a feature, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Feature	No	Text	Enter the name of the product feature.
Is Main Feature	No	Boolean	Select the checkbox if it is the major feature.
Display Name	No	Text	Enter the display name of the feature.

Click the **Save and Reload** button at the top right corner of the page.

Product Destination Types Section

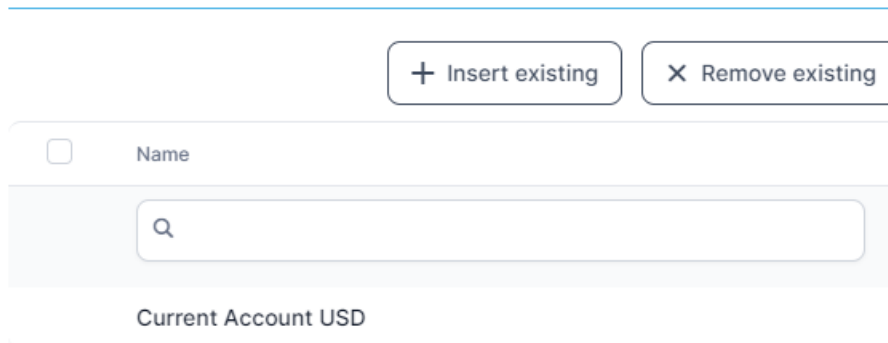
The **Product Destination Types** section allows for insertion or removal of existing product destination types. Click **Insert existing** and select one of the existing destination types, or insert a new one. To create a new destination type, insert a name and specify if it is default. For this case, the following have been configured:

- Loan Collateral
- Loan disbursements
- Personal
- Repayments.

Associated Products Section

The **Associated Products** section allows for insertion or removal of existing products. It is especially useful when you wish to create a link between two products. You can insert or remove a product from the list or create a new one.

Associated Products



The interface for the 'Associated Products' section includes a header with two buttons: '+ Insert existing' and 'X Remove existing'. Below the header is a table with a 'Name' column. The first row of the table displays 'Current Account USD'.

Click the **Save and Reload** button at the top right corner of the page.

GL Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

In the **Banking Product GL Accounts** section, you can set specific accounts to be used by the **Operational Ledger** system for transactions performed on contracts based on this banking product. Thus, you can overwrite the generic settings of the Operational Ledger, instructing it to use the accounts specified at banking product level.

To add specific accounts to be used by **Operational Ledger**, click **Insert** and fill in the following fields in the displayed **Add Banking Product GL Account** page:

Field	Required	Data Type	Description
Product	Yes	Option set	Select from the list the banking product. Automatically completed with the banking product you are currently editing.
Accounting System	Yes	Option set	Select from the list the desired accounting system. The list contains the records created in the FTOS_GL_AccountingSystem entity.
Accounting Scope	Yes	Option set	Select from the list the corresponding accounting scope. The list contains the records created in the FTOS_GL_AccountingScope entity.

Field	Required	Data Type	Description
Item	No	Option set	Select from the list the corresponding transaction item. The list contains the records created in the FTOS_GL_TransactionItemAccountingConfig entity.
GL Account	Yes	Option set	Select from the list the corresponding GL account. The list is filtered based on the previously selected accounting system. It contains the accounts defined in the FTOS_GL_AccountingChart entity that were added to the chosen accounting system record.

Click the **Save and Reload** button at the top right corner of the page.

Current Accounts with Overdraft

A current account with an attached overdraft functionality allows customers to withdraw funds from the account even if the available balance goes below zero. If there is a prior agreement with the account provider for an overdraft, and the amount overdrawn is within the authorized overdraft limit, then interest is normally charged at the agreed rate. If the negative balance exceeds the agreed terms, then additional fees may be charged and higher interest rates may apply. The customer may use the account beyond their available balance (credit balance) and may have a debit balance as low as the approved overdraft/ limit. The overdraft can be added on top of existing current accounts.

To manage banking products:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, click **Product Factory**.

4. Click **Banking Products** to open the **Banking Products List** page.

Banking Products list

Code	Name	Class	SubClass	Category	SubCategory	Status	
SLICE	SLICE Loan					Approved	1
SL_BU	Slice BU					Approved	1
TLTL2	TLTL2 - Term loan Eur					Approved	1
M_BU	Mortgage test BU					Draft	1

On the **Banking Products List** page, you can:

- Add a new banking product by clicking the **Insert** button at the top right corner.
- Edit an existing banking product from the list by double-clicking it.
- Delete a banking product by selecting it and clicking the **Delete** button at the top right corner.

NOTE

For banking products in **Active** status, you can't change any of their related entities (such as features, discounts, product guarantee, interest or commission item, formula, test scenario, product covenant, product disbursement, product availability item filter). To change any of the product's related entities, create a new version of the banking product record.

Creating Current Accounts with Overdraft

To create a new banking product, click the **Insert** button on the top right side of the page. A new page opens, with a series of tabs that assist you in configuring the banking product:

1. **Main Info** - The first tab requires the basic elements for the creation of a product such as product type, name, code, hierarchy and features.
2. **Details** - This tab requires further elements that build on the first tab such as interest, payment type, top-ups, withdrawals and associated products.
3. **Availability** - This tab determines the monetary range and the time frame when the product is available for customers.

4. [Dimensions](#) - This tab displays the interests, commissions, insurances, discounts and questions valid for a product.
5. [Product Formula Engine](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Documents](#) - This tab contains all the attached documents available for a product.
7. [Lean Core Settings](#) - This tab holds Core Banking related settings, such as transactions that are done to and from a banking product, reconciliation account associated with the product, mandatory roles for contract approval, payment allocation settings, or closing contract settings are found in this tab.
8. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
9. [Origination Elements](#) - This tab holds the elements required in origination journeys, such as product benefits, display conditions, features, destination types, or associated products.
10. [GL Settings](#) - This tab contains the accounts to be used by Operational Ledger for transactions performed on contracts based on this banking product.

Main Info

The **Main Info** tab requires the basic elements for the creation of a product such as name, code, currency, validity, or product classification.

The following fields are available:

Field	Required	Data Type	Details
Main Information			

Field	Required	Data Type	Details
Banking Product Type	Yes	Option Set	<p>Choose one for the following:</p> <ul style="list-style-type: none"> • Bank Account • Card • Credit Card • Deposit • Leasing • Mortgage • Overdraft • Term Loan <div> NOTE Your product type selection greatly influences the next steps. It is important to choose the right type of product to build. </div>
Currency	Yes	Lookup	Choose the currency for this banking product.
Banking Product Code	Yes	Text	Enter the code of the product. It can have 10 characters and it is used in the contract. It uses a sequencer and the code of the product type.
External Code	No	Text	The code of the product imported from an external system, if applicable. It can have 10 characters and it is not used in the contract.

Field	Required	Data Type	Details
Start Date	Yes	Date	Select the date when the product becomes available.
End Date	Yes	Date	Select the last date from when the product is available. From that date forward, the product is no longer available.
Name	Yes	Text	Enter the name of the product.
Class	No	Option set	Select the class of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Subclass	No	Option set	Select the subclass of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Category	No	Option set	Select the category of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
SubCategory	No	Option set	Select the subcategory of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Description			
Description	No	Text area	Write any description or additional text here.

Click the **Save and Reload** button at the top right corner of the page.

Product Classification Section

In the **Product Classification** section, you can insert or remove existing product classification items. To add a product classification item, click **Insert Existing** and select an already existing item.

Product Classification

+ Insert existing ✕ Remove existing

<input type="checkbox"/>	Code	Name	Classification Type	Valid From	Valid To
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	REG1	Classification ...	Regulatory	01/01/2020	31/12/2030

You can also create a new product classification item by clicking **Insert**. On the newly displayed **Add Product Classification** page, fill in the following fields:

←
✓
Save and close
Save and reload
Save and new

Add Product Classification

Main Information

Name	Code	Valid From	Valid To	Classification Type	Is Default
<input type="text" value="Reg 2"/>	<input type="text" value="REG2"/>	<input type="text" value="18/04/2022"/>	<input type="text" value="30/04/2029"/>	<input type="text" value="Regula..."/>	<input type="checkbox"/>

[Classified Banking Products](#)

Field	Required	Data Type	Details
Classification Type	Yes	Option set	Choose the classification type of the item. Possible values: Regulatory, Restructuring.
Name	Yes	Text	Enter the name of the classification item.
Code	Yes	Text	Enter the unique code of the classification item.
Is Default	Yes	Boolean	Select the checkbox if this classification item is default.
Valid From	Yes	Invariant Date	Select the date from which the product classification item is valid.
Valid To	Yes	Invariant Date	Select the date until when the product classification item is valid.

The **Banking Products Classification Section** is displayed after saving the classification item record and allows you to insert existing banking products. The following information is displayed here:

Field	Details
Code	The code of the banking product added to the product classification item.
Name	The name of the banking product.
Class	The class of the banking product.
SubClass	The subclass of the banking product.
Category	The category of the banking product.
SubCategory	The subcategory of the banking product.
Status	The status of the banking product record.

Click the **Save and Reload** button at the top right corner of the page.

IMPORTANT! For current accounts with overdraft functionality, select Banking Product Type = **Bank Account**.

Details

The **Details** tab requires further elements such as interest, payment type or product destination types.

General Data Section

For the **General Data** section, the following fields are available:

Field	Required	Data Type	Details
Auto Rollover	Yes	Boolean	<p>If the checkbox is selected here at banking product level, the contract is renewed at maturity date in exactly the same conditions.</p> <p>If the checkbox remains unchecked, the contract is automatically closed at maturity date.</p>

Field	Required	Data Type	Details
Allow Top Ups	No	Boolean	<p>Select if the amount can be topped up with a sum of money.</p> <ul style="list-style-type: none"> If selected, the Top Up Account transaction is automatically loaded in the Allowed Transactions section, which means that the customer is allowed to make top ups at the contract level. When a top up transaction is recorded in a contract, at the next maturity date the interest is calculated for the initial amount up until the top up date, plus the interest for the full amount (initial

Field	Required	Data Type	Details
			<p>amount + top up amount)</p> <p>proportional from top up to payment date.</p> <ul style="list-style-type: none"> • If not selected, the top up transaction is not allowed at the contract level.

Field	Required	Data Type	Details
Allow Withdrawals	No	Boolean	<p>Select if the customer can take out money for this product.</p> <ul style="list-style-type: none"> If selected, the Withdraw and Transfer between my bank accounts transactions are automatically loaded in the Allowed Transactions section, which means that the customer is allowed to make withdrawals at the contract level. If not selected, the Withdraw and Transfer between my bank accounts transactions are not loaded, thus these transaction

Field	Required	Data Type	Details
			types are not allowed at the contract level.

Field	Required	Data Type	Details
Allow negotiated IR	No	Boolean	<p>Select if the interest rate is negotiable for this product at the contract level.</p> <ul style="list-style-type: none"> • If selected, the Total Interest Rate field from the banking contract is automatically completed with the value configured on the banking product, but it is editable, so that the bank can change this value and insert the negotiated one. • If not selected, the Total Interest Rate field from the banking contract is automatically completed with the value

Field	Required	Data Type	Details
			configured on the banking product, but the value is read-only and cannot be changed.
Allow Overdraft	No	Boolean	Only displayed for current account type bank accounts. This is where you specify that the account has an overdraft functionality attached to it, so select the checkbox. The Payment Schedule Types section is displayed after selecting this checkbox.

Field	Required	Data Type	Details
Interest is capitalized	Yes	Boolean	<p>Only applicable if there is an interest rate.</p> <ul style="list-style-type: none"> • If the checkbox is not selected, the interest is paid in the account specified on the contract. • If selected, then the interest is added over the product amount, so that on the next payment date the customer receives the interest applied on both interest and product amount.
Interest Payment Type	Yes	Option set	<p>Choose one from the following:</p> <ul style="list-style-type: none"> • Monthly • Maturity • Yearly • Daily • Quarterly.

NOTE

If you select the **Allow Top Ups** and **Allow Withdrawals** checkboxes, then the Top Up Account, Transfer between my bank accounts and Withdraw transaction types are automatically attached in the **Lean Core Settings** tab.

Click the **Save and Reload** button at the top right corner of the page.

1 Main Info

2 Details

3 Availability

4 Dimensions

5 Product Formula Engine

6 Documents

7 Lean Core Settings

8 History

9 Origination Elements

10 GL Settings

General Data

Auto Roll Over

Allow Top Ups

Allow Withdrawals

Allow negotiated IR

Allow Overdraft

Interest Is Capitalized

Interest Payment Type

Payment Schedule Types

Period Type

Periodicity Type

Schedule Templates

+ Insert existing

X Remove existing

Holiday Shift For Repayment Installments

Defer Due Date

Holiday Shift Method

Country Calendars

+ Insert existing

X Remove existing

Payment Schedule Types Section

In the **Payment Schedule Types** section, the following fields are available:

MANAGING BANKING PRODUCTS

96

Field	Required	Data Type	Details
Period Type	No	Option set	<p>Select the period of availability for the product. Choose one:</p> <ul style="list-style-type: none"> • Days • Weeks • Months • Years • Once. <div> NOTE The period type must be the same as the measurement unit of the Periodicity Type. </div>

Field	Required	Data Type	Details
Periodicity Type	Yes	Option set	<p>Select the regularity of payments. Select one from the following:</p> <ul style="list-style-type: none"> • Once (the whole amount is paid at maturity) • Weekly • Monthly • Bimonthly • Trimestrial • 4 Weeks • Semestrial • Annual • 30Days. <div> <p>NOTE</p> <p>If the measurement unit of the selected Periodicity Type = Days, then Holiday Shift For Repayment Installments = False and it cannot be changed.</p> </div>

Click the **Save and Reload** button at the top right corner of the page.

Schedule Templates Section

In the **Schedule Templates** section, you can associate/ delete payment schedule types to/ from the banking product.

Schedule Templates

<input type="checkbox"/>	Name
<input type="text" value="Q"/>	
	Credit Card Installments
	One principal installment

To associate a payment schedule type to the banking product, click **Insert Existing** and select one of the already defined types. Go to ["Payment Schedule Types"](#) on page 530 to read more about this.

IMPORTANT!

When creating a new Term Loan, Mortgage, or Overdraft banking product, you must select at least one payment schedule type, otherwise you can't approve the product. If the **Schedule Templates** section has no records, an error message is displayed upon transitioning the product into the **Approved** status: "At least one Payment schedule type definition must be selected for approval!"

Click the **Save and Reload** button at the top right corner of the page.

Holiday Settings Section

In the **Holiday Settings** section, the following fields are available:

Holiday Settings

Holiday Shift For Repayment Installments

☒

Defer Due Date

☒

Holiday Shift Method

Forward

Country Calendars

+ Insert existing

× Remove existing

☐

Name

Q

Romania

Field	Required	Data Type	Details
Holiday Shift For Repayment Installments	Yes	Boolean	<p>This checkbox marks if the holidays are considered for the calculation of the maturity schedule.</p> <div>NOTE The Country Calendars section and the Defer Due Date and Holiday Shift Method fields appear if you select this checkbox.</div>
Defer Due Date	Yes	Boolean	<p>If you select the checkbox, the payment schedule calculates the next payment amount as if the due date has not changed even when the due date falls on a holiday. This checkbox is selected by default.</p>

Field	Required	Data Type	Details
Holiday Shift Method	No	Option set	<p>Select from the list the method to be used when calculating the due date if that date falls to a holiday. The due date can be shifted before or after the holiday.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • None - the due date is not shifted. • Forward - the due date is shifted to the next working day after the initially calculated due date. • Backward - the due date is shifted to the last working day before the initially calculated due date. <p>Default value: Forward.</p>

In the **Country calendars** section, you can insert or delete calendars. You can work with multiple calendars as well. Click the **Insert Existing** button and add the country's name. If the maturity date coincides with a holiday, it is allocated automatically on the next business day.

Click the **Save and Reload** button at the top right corner of the page.

Availability

The **Availability** tab determines the monetary range and the time frame when the product is available for customers.

Product Availability

Minimum Amount: 1,000 Maximum Amount: 100,000 Minimum Period: Maximum Period:

Start Period For Unusage After Activation(Months): 3 Expire period for Overdraft (Months): 5

Availability Rules

Product Availability Item Filters Product Covenants

Buttons: + Insert, X Delete, Export, Refresh

Fields: Description, Type, Covenant, Valid From, Valid to, Value

The following fields are available:

Field	Required	Data Type	Details
Minimum Period	No	Whole Number	The minimum duration of the product mentioned in the contract.
Maximum Period	No	Whole Number	The maximum duration of the product mentioned in the contract.
Minimum Amount	No	Whole Number	The minimum amount of the product for which the bank opens a contract.
Maximum Amount	No	Whole Number	The maximum amount of the product for which the bank opens a contract.
Start Period For Unusage After Activation (Months)	No	Whole Number	The number of months after contract activation when the amount unused from the contract starts to be charged with unusage fees.
Expire period for Overdraft (Months)	Yes	Whole Number	The number of months after which the overdraft feature of the current account expires and the banking product starts behaving like a simple current account.

Availability Rules Section

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see "[Product Filter](#)" on page 519.

Availability Rules

Product Availability Item Filters

+ Insert × Delete 📄 Export 🔄 Refresh

☐ Description

CA >< 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Product Covenants Section

In the **Product Covenants** section you can set certain conventions that applicants must abide by after getting the loan. This is usually applicable for corporate clients that must meet certain requirements in order to continue to receive disbursements.

Product Covenants

+ Insert × Delete 📄 Export 🔄 Refresh

<input type="checkbox"/>	Type	Covenant	Valid From	Valid to	Value
	<input type="text"/>	<input type="text"/>	<input type="text"/> 📅	<input type="text"/> 📅	<input type="text"/>
	Affirmati...	Borrowers should perform tax obligations	19/04/2022	20/04/2030	
	Financial	Lender can monitor borrower's current r...	19/04/2022	20/04/2030	

Click the **Insert** button to add a covenant to the product. Each covenant can be attributed a value, an availability period, and a review frequency in months. Read more about covenants in the ["Covenant" on page 567](#) page.

Click the **Save and Reload** button at the top right corner of the page.

Dimensions

The **Dimensions** tab displays the interests, commissions, insurances, discount and questions valid for a product.

The screenshot displays the 'Dimensions' menu with four sub-sections:

- Interest & Commissions:** Includes an 'Insert' button and a search bar. Below the search bar, 'MCA' is listed.
- Insurances:** Includes an 'Insert' button and a search bar. Below the search bar, 'House Insurance' is listed.
- Discounts:** Includes an 'Insert' button and a search bar. Below the search bar, a table with columns: Name, Discount, End Date, Start Date, and Value Discount is shown. The table is currently empty, displaying 'No data'.
- Questions:** Includes an 'Insert existing' button and a search bar. Below the search bar, a table with columns: Question and Business Status is shown. The table contains two rows: 'Question1' with status 'Active' and 'Question2' with status 'Active'.

You can insert, delete or export interest, commissions, insurances, discounts or questions. To add a new one, click **Insert** and fill-in the fields detailed in the sections below.

NOTE

To configure the interest and commissions separately, navigate to **Main > Product Factory > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions Section

Click **Insert** to add an [interest](#) or a [commission](#). In the **Interest & Commission Item** page, fill in the following fields:

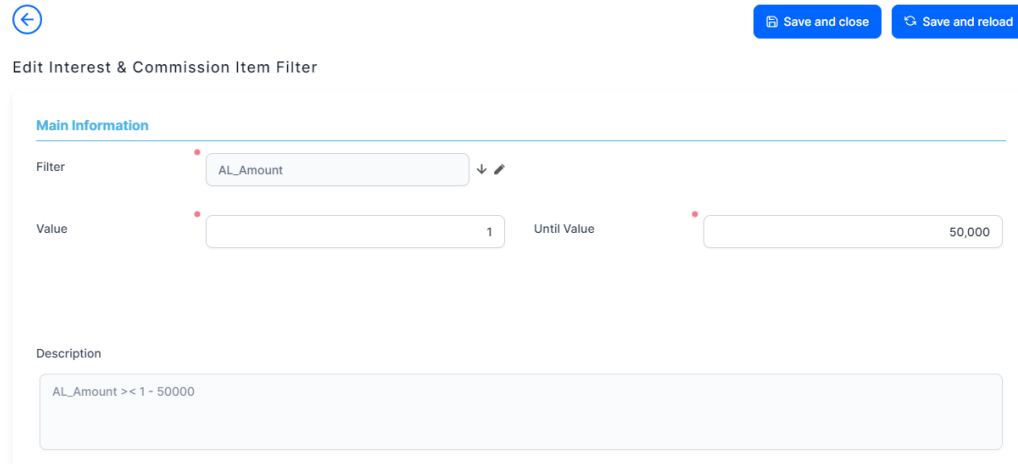
Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Enter a code for this particular interest/ commission.
Item Name	Yes	Text	Enter a name.
Start Date	No	Date	The start date when the interest/ commission becomes effective.
End Date	No	Date	The end date for the interest/ commission.
Interest List	No	Option set	Select from which list the interest is a part of.
Commissions List	No	Option set	Select from which list the commission is a part of.

Field	Required	Data Type	Details
Minimum Interest Rate (%)	No	Numeric	Enter the percent applicable as a minimum interest rate at the contract level.
Is Negotiable	No	Boolean	Select the checkbox to specify that every interest, commission or margin field at the contract level is negotiable and can be edited.

Click the **Save and Reload** button at the top right corner of the page.

In the **Interest & Commission Item Filters** section, click **Insert** to insert an [item filter](#) and fill in the following fields:

Field	Required	Data Type	Details
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Value/ Date	No	Text/Date	Select the beginning value/ date for the filter.
Until Value/ Until Date	No	Text/Date	Select the maximum value/ date for the filter.
Description	No	Text area	This field is automatically filled in after clicking the Save and Reload button. The values/ dates inserted above are turned into an expression.
For Lookup attributes			
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Option Set	No	Option set	It is automatically filled in with the option set name created for the attribute.
Description	No	Text area	It is left blank. Add a description if needed.
Grid of Options	No	Grid	This field is automatically filled in after clicking the Save and Reload button. The values of the option set are displayed. Select the Boolean for the values you wish to include in the filter.



← Save and close Save and reload

Edit Interest & Commission Item Filter

Main Information

Filter AL_Amount ↓

Value 1 Until Value 50,000

Description

AL_Amount > 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Insurances Section

For any banking product, you can select a pre-existing insurance or create a new one. To add a new **insurance**, fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Insert a code for this particular insurance.
Item Name	Yes	Text	Insert a name.
Start Date	No	Date	It is the start date when the insurance becomes effective.
End Date	No	Date	It is the end date for the insurance.
Details	No	Text area	It is left blank. Add a description if needed.
Insurance List	No	Option set	Select from which list the insurance is a part of.

Click the **Save and Reload** button at the top right corner of the page.

In the **Insurance Item Filters** section, click **Insert** and fill in the following fields:

Field	Required	Data type	Description
Filter	Yes	Option set	The name inserted earlier.
Value	Yes	Text	The starting value for the attribute.
Until Value	Yes	Text	The ending value of the interval.
Description	No	Text area	Insert the proper description for the availability filter.

Click the **Save and Close** button at the top right corner of the page.

Discounts Section

For any banking product, you can add discounts of any nature. You can select a pre-existing discount or create a new one.

Click the **Insert** button to add a new **discount**. In the **Details** page, fill in the following fields:

Field	Required	Data Type	Details
Name	Yes	Text	Insert the appropriate name for the discount.
Discount	No	Option set	Choose one of the pre-configured types of discounts or create a new one. According to the selected type, new fields appear on the page requiring to be filled in.
Value discount	No	Numeric	Insert the value of the discount to be applied, e.g. 15.

Field	Required	Data Type	Details
Start date	Yes	Date	It is the start date when the discount becomes effective.
End date	Yes	Date	It is the end date for the discount.
Applied to dimension	No	Option set	Specifies for which product dimension this discount is applicable (interest, commission or insurance). This is autocompleted by the selected discount's dimension.
Commission type	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount. Specifies for which commission type this discount is applicable. This is autocompleted by the selected discount's default commission type.
Commission	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount. Specifies for which commission this discount is applicable. This is autocompleted by the selected discount's default commission.
Insurance class	No	Lookup	This field appears if the selected discount = Discount Life Insurance or Interest Discount. Specifies for which insurance class this discount is applicable (credit, home, life or other insurance class). This is autocompleted by the selected discount's insurance class.

Field	Required	Data Type	Details
Insurance	No	Lookup	This field appears if the selected discount = Discount Life Insurance. Specifies for which insurance this discount is applicable. This is autocompleted by the selected discount's insurance.
Interest type	No	Lookup	This field appears if the selected discount = Interest discount. Specifies for which interest type this discount is applicable.
Use Banking Formula	No	Boolean	If you select this checkbox, the discount is calculated using the Banking Formula engine.
Is optional discount?	No	Boolean	Selecting this checkbox results in the discount being applied only if the customer agrees to the discount.
Is percentage	No	Boolean	If you select this checkbox, the discount is calculated as a percentage from the contract's amount.
Destination entity	No	Option set	Select the entity where to register the discount. This field opens when the Is optional discount? checkbox is selected.
Destination entity attribute	No	Option set	Select the attribute where to register the discount. This field opens when the Is optional discount? checkbox is selected.

Click the **Save and Reload** button at the top right corner of the page.

In the **Product Discount Item Filter** section, click **Insert** and fill in the fields as specified in the **Product Filter page**. The fields displayed depend on the selected filter.

Click the **Save and Reload** button at the top right corner of the page.

Questions Section

Choose one or more questions to add to the banking product, or insert a new one.

To insert a new [question](#), click **Insert existing**, then click **Insert**. In the **Add Banking Product Question** page, fill in the following fields:

Field	Required	Data type	Description
Question	No	Text	Enter the appropriate name.
Answer Type	No	Option set	Select the type of answer the customer has to give: <ul style="list-style-type: none"> • text • numeric • option set.
Answer Entity	No	Option set	Select the entity where the answer is stored.
Answer Field	No	Option set	Select the attribute where the answer is stored.

Click the **Save and Reload** button at the top right corner of the page.

The **Banking Products List** shows where the question is used.

IMPORTANT!

The question has to be activated in order for it to be added to the banking product.

Click the **Save and Close** button at the top right corner of the page.

For example, this is how a question is displayed in a digital journey in the FintechOS Portal:

The screenshot shows a web application interface for editing a loan application. At the top, there's a navigation bar with 'CURRENT STATUS: INITIALIZED' and 'NEXT STATUS: CHOOSE STATUS'. Below this is a blue header bar that says 'EDIT LOAN APPLICATION'. The main content area is titled 'Eligibility Questions' and includes a sub-header: 'We ask for this information so that we can carry out the checks needed to consider you for a mortgage'. There are three input fields: 'DEPOSIT SOURCE' with a dropdown menu showing 'Select...', 'RETIREMENT DATE' with a date picker, and 'RETIRED' with radio buttons for 'Yes' and 'No' (the 'No' button is selected). A 'Finish' button is located at the bottom right of the form.

Product Formula Engine

The **Product Formula Engine** tab keeps formulas built with [Formula Engine](#) for the banking product. Such formulas can be used to determine the eligibility of a customer.

The screenshot shows the 'Product Formula Engine' tab in a web application. It has a navigation bar with tabs: 1 Main Info, 2 Details, 3 Availability, 4 Dimensions, 5 Product Formula Engine (selected), 6 Documents, 7 Loan Core Settings, 8 History, 9 Origination Elements, 10 GL Settings. Below the navigation bar, there are two main sections: 'Banking Product Formulas' and 'Test Scenarios'. Each section has a table with columns for Name, Formula Type, and Formula. The 'Banking Product Formulas' table has one row with Name 'CA', Formula Type 'CommissionFormula', and Formula 'commissionByAmount'. The 'Test Scenarios' table has one row with Name 'Duplicate-19-04-2022_11:07:57' and Formula Type 'CommissionFormula'. Both sections have buttons for '+ Insert', 'X Delete', 'Export', and 'Refresh'.

Banking Product Formulas Section

In the **Banking Product Formulas** section, choose an already defined formula or click **Insert** to configure a new one, for example a formula for eligibility or scoring purposes. For information on how to build a formula, see [Define Formula Inputs](#).

In the **Add Banking Product Formula** page, fill in the following fields:

The screenshot shows the 'Add Banking Product Formula' page. It has a navigation bar with a back arrow and two buttons: 'Save and close' and 'Save and reload'. Below the navigation bar, there's a section titled 'Main Information' with a table. The table has four columns: Name, Banking Product, Formula Type, and Formula. The 'Name' column has a value 'CA'. The 'Banking Product' column has a value 'Duplicate'. The 'Formula Type' column has a value 'CommissionFormula'. The 'Formula' column has a value 'commissionByAmount'. Below the table, there's a 'Data Mapping' section with a dropdown menu showing 'BPFormulaType_TestFormula_1647267821582_formula'. A 'Map Data' button is located at the bottom right.

Field	Required	Data type	Description
Name	Yes	Text	Enter an appropriate name.
Banking Product	No	Option set	The name of the banking product is inserted automatically.
Formula Type	Yes	Lookup	Select the type of formula configured before, e.g. scoring /eligibility.
Formula	Yes	Lookup	Select the previously configured formula. IMPORTANT! The formula must be activated before attaching it to a product.
Data Mapping	No	Lookup	Select the previously configured data mapping.

After selecting the desired formula, click **Save and reload**, then click **Map Data**.

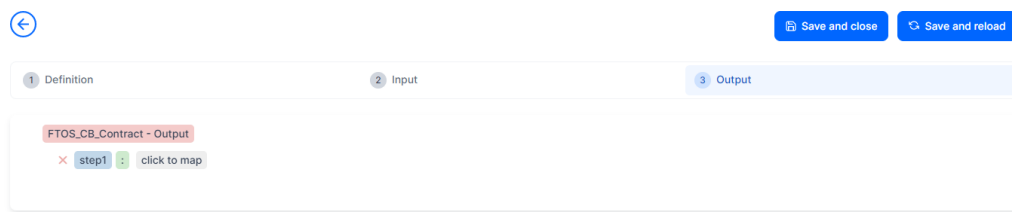
The screenshot shows the 'Formula Mapping' page with three tabs: 'Definition', 'Input', and 'Output'. The 'Input' tab is active. It contains a section titled 'Formula parameter mapping' with the following fields:

- Data Mapping Type:** Banking Product
- Master Entity:** FTOS_CB_Contract
- Operation Name:** test
- Name:** BPFormulaType_Test Formula_1647267821582_formula

At the top right of the page, there are two buttons: 'Save and close' and 'Save and reload'.

In the **Formula Mapping** page, click **Input** and configure the input data for the formula.

Click **Output** and configure the output for the formula.



Click the **Save and Close** button at the top right corner of the page.

Such formulas can be used in digital journey steps, for example when the customer inserts their financial data.

Test Scenarios Section

A good practice is to test the formula before displaying it in a digital journey. You can do that in the **Test Scenarios** section.

Click **Insert** to open the **Add Test Scenario** page.

Insert a **Test Scenario Type** from the option set. The keys and the values are shown. Click the **Save and Reload** button at the top right corner of the page.

← Save and close Save and reload

Edit Test Scenario

Main Information

Test Formula Type CommissionFormula

Key Value

Amount 23.45

☐ Save Output Data Calculate

Test Scenario Outputs

+ Insert X Delete Export Refresh

Name

Click the **Calculate** button. The outputs are displayed in the **Test Scenario Outputs** section. These outputs can be saved by selecting the **Save Output Data** checkbox next to **Calculate**.

Documents

The **Documents** tab contains all the attached documents available for a product.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Product Formula Engine 6 Documents 7 Lean Core Settings 8 History 9 Origination Elements 10 GL Settings

Banking Product Documents

+ Insert X Delete Export Refresh

Report Banking Copies No Operation Code

Status overview of the queues 2 TC

Banking Product Agreements

+ Insert X Delete Export Refresh

Code

No data

Banking Product Documents Section

The previously associated documents are displayed in the **Banking Product Documents** section.

To attach a new document to the banking product, click **Insert** and fill in the following fields:

Field	Data Type	Description
Operation Code	Whole number	Enter a code for the document.

Field	Data Type	Description
Banking Copies No	Whole number	Insert the number of copies made.
Report	Lookup	Select a document from the list.
Document Type	Option set	Select a document type from the list.
Is Mandatory	Boolean	Select if the document is mandatory.
Includes Debtor	Boolean	Select if the document includes the debtor.
Includes Coborrower	Boolean	Select if the document includes the co-borrower.
Requires Signature	Boolean	Select if the document requires to be signed.
Is accord	Boolean	Select if the document represents the accord.

⏪ Save and close Save and reload Save and new

Add Banking Product Document

Banking Product Document

Operation Code: PASS Banking Copies No: 2 Report: Passport Document Type: Passport

Is Mandatory: ☒ Yes ☐ No Includes Debtor: ☐ Yes ☒ No Includes Coborrower: ☐ Yes ☒ No Requires Signature: ☐ Yes ☒ No

Is Accord: ☐ Yes ☒ No

Click the **Save and Close** button at the top right corner of the page.

Banking Products Agreements Section

The agreements that a customer needs to go through are displayed in the **Banking Products Agreements** section.

To attach a new agreement to the banking product, click **Insert** and fill in the following fields:

Field	Required	Data Type	Description
Agreements	Yes	Option set	Select an agreement from the list.
Banking Product	Yes	Option set	It is automatically filled in.
Code	No	Whole number	Insert the corresponding code.
Is Mandatory	No	Boolean	Select if the agreement is mandatory for the product.

Edit Banking Product Agreement

Save and close Save and reload

Main Information

Agreement Code Banking Product Is Mandatory

Popescu Broker + AGR SLICE Loan + ✓

Click the **Save and Close** button at the top right corner of the page.

For more information on how to configure a contract or an agreement, see the [Digital Document Processor](#).

Lean Core Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

Transactions types that are performed to and from a banking product are displayed in the **Lean Core Settings** tab. The tab also holds information about the reconciliation account associated with the products, mandatory roles for contract approval, payment allocation settings, the treatment of returned goods for contracts based on this banking product (only for Term Loans and Mortgage banking products), and closing contract settings.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Product Formula Engine 6 Documents 7 Lean Core Settings 8 History 9 Origination Elements 10 GL Settings

Self Bank Account Associated With The Product

Reconciliation Account Negative balance treatment

Reconciliation EUR NoMessage

Mandatory Roles for Contract Approval

+ Insert X Delete Export Refresh

Role Search Limit

Beneficiary

Closing Contract Settings

Buffer Close Days Close Real Time Closing Is Flexible

Contract Is Closed Automatically

Payment Allocation Settings

Repayment Allocation Method Grace Days for Repayment Penalty for grace period

CostOrder

Allowed Transactions

+ Insert existing X Remove existing

Name

Top Up Account

Transfer between my bank accounts

Withdraw

Self Bank Account Associated With The Product Section

For each banking product, you must select a reconciliation account, which is the bank account to be used for transactions.

Self Bank Account Associated With The Product

Reconciliation Account	Negative balance treatment
<div>Reconciliation EUR</div> <div>↓</div>	<div>NoMessage</div> <div>▼</div>

Next to the **Reconciliation Account** field, select a value from the list to be the current account from which or to which the money is wired from or to.

NOTE

This account must have the same currency as the product, because the translations are performed from and into this account.

Select a value for the **Negative Value Treatment** drop-down to specify how Core Banking treats situations when the funds of the reconciliation account associated with the banking product used in the contract would go below zero if a disbursement event would be approved. The possible values are:

- **Error** - there is an error message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can't be approved and the balance can't go below zero. Select this value if you want to block any transactions that would result in a negative balance of the reconciliation account associated to the banking product.
- **Warning** - there is a warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can be approved and the balance can go below zero.

- **NoMessage** - there is no error or warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account. The event can be approved and the balance can go below zero.

NOTE

Core Banking also has a system parameter, **ReconciliationAccountTreatment**. That is a system-wide setting, applicable to events for contracts based on all banking products without a specified **Negative balance treatment** value. Core Banking takes into consideration the settings used at the banking product level (the **Negative balance treatment** field's value). Thus, if the value is specified at the banking product level, then that value takes precedence over the system parameter's setting.

If you associate the same reconciliation account to more than one banking product, then the setting selected in banking product A is applied for contract events based on banking product A, while for the banking product B, Core Banking would apply the setting selected at the level of banking product B.

Payment Allocation Settings Section

This section holds the payment allocation settings. This is where you can decide which allocation method should be used to determine the order in which credit items are prioritized when repaying loans, credit accounts, and so on. You can also define the grace period settings.

Payment Allocation Settings

Repayment Allocation Method	Grace Days for Repayment	Penalty for grace period
<div>CostOrder</div> <div>↓ ✎</div>	<div>5</div>	<input type="checkbox"/>

Fill in the following fields:

Field	Required	Data Type	Details
Payment Allocation Method	No	Lookup	The payment allocation method represents the recovery order of amounts from payment notifications. Select a payment allocation method from the list.
Grace Days for Repayment	No	Whole number	Insert the number of days for which the bank expects a payment without calculating penalty.
Penalty for grace period	No	Boolean	If you select the checkbox, the penalty interest is applied on the loan contract without taking into consideration the grace period defined at contract level, being calculated for the difference between system date - due date, if the grace period passed and the customer didn't pay the due amounts. If you leave this checkbox unselected, the penalty interest is applied on the loan contract taking into consideration the grace period defined at contract level, being calculated for system date - due date + grace days for repayment.

Click the **Save and Reload** button at the top right corner of the page.

Mandatory Roles for Contract Approval Section

The **Mandatory Roles** section allows you to add the roles of the participants that are mandatory to exist at the contract level for contracts based on this banking product. In other words, when creating contracts based on banking products with Merchant role in this section, you must add a customer with the same Merchant role as contract participant, otherwise, the contract cannot be approved. When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role, in this case Merchant Exposure.

Mandatory Roles for Contract Approval

☐ Role Search Limit

☐ Beneficiary

In the **Mandatory Roles** section, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Lookup	The banking product for which you define mandatory roles. This is automatically completed with the current banking product.
Role	Yes	Option Set	Select the role of the participants that are mandatory to exist at the contract level for contracts based on this banking product.
Search Limit	Yes	Boolean	When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role. If you select a role not associated with a customer limit type in Core Banking, the Search Limit field becomes read-only and unselected.

⏪

Add Mandatory Role

Main Information

Banking Product

Role

Search Limit

☒

Click the **Save and Reload** button at the top right corner of the page.

Return Of Goods Section

IMPORTANT!

This section is displayed only for **Term Loan** and **Mortgage** banking products.

The fields within this section allow you to define whether a contract based on the banking product can have Returned Amount or Goods transactions or not, and the specific conditions for these transactions. The Returned Amount or Goods transaction type can be used when a customer returns all or part of a loan or mortgage in a short while after contract creation, if the banking product was defined to allow such transactions. You can set up Return Fee type commissions, to return all or some of the claimed commission to the borrower.

To configure the treatment of returned goods for contracts based on this banking product, fill in the following fields:

Field	Required	Data Type	Details
Allow Return Of Goods	Yes	Boolean	Select this checkbox if the contracts based on this banking product accept Return of Goods transactions. Default value: False. If selected, the Accepted Days For Return and Return Message fields are displayed, otherwise, these fields are not visible.
Accepted Days For Return	Yes	Whole Number	Specify the number of days after contract creation during which the return of goods transaction can be created and approved.

Field	Required	Data Type	Details
Return Message	Yes	Option Set	<p>Select the behavior of messages generated by Core Banking for situations when the Returned Amount or Goods transaction's approval date + the number of accepted days for return \geq the current date. Possible values are taken from the Warning Error Treatment option set. According to the desired behavior, choose:</p> <ul style="list-style-type: none"> • Error, if the transaction should not be approved and an error message should be displayed; • Warning, if the transaction can be approved, but a warning message should be displayed; • NoMessage, if the transaction can be approved without any messages.

Return Of Goods

Allow Return Of Goods



Accepted Days For Return

Return Message

Click the **Save and Reload** button at the top right corner of the page. If Allow Return Of Goods = True, then the Returned Amount of Goods transaction is automatically added to the **Transaction Types** section.

Closing Contract Settings Section

IMPORTANT!

This section is displayed only for **Term Loan** and **Mortgage** banking products.

In the **Closing Contract Settings** section, you can configure the default closure settings for contracts based on this banking product.

Closing Contract Settings

Buffer Close Days

10

Close Real Time

☐

Closing Is Flexible

☒

Contract Is Closed Automatically

☒

Fill in the following fields:

Field	Required	Data Type	Details
Buffer Close Days	No	Whole Number	Enter the number of days used as buffer before automatically closing the contract when the contract reaches maturity and its balance reaches zero. If Buffer Close Days > 0, then Contract Is Closed Automatically = False.

Field	Required	Data Type	Details
Close Real Time	No	Boolean	If you select this checkbox, the contract based on this banking product is closed in real-time, when the contract reaches maturity and its balance reaches zero, without waiting for the end of day processes. If Close Real Time = True, then Buffer Close Days = 0 and Contract Is Closed Automatically = True.
Closing Is Flexible	No	Boolean	If you select this checkbox, the closure details of the contract based on this banking product can be modified at the contract creation.
Contract Is Closed Automatically	No	Boolean	If you select this checkbox, the contract based on this banking product is closed automatically at maturity, if the balance reaches zero. If Contract Is Closed Automatically = False, then Close Real Time = False.

Click the **Save and Close** button at the top right corner of the page.

Allowed Transactions Section

In the **Allowed Transactions** section, you can associate possible transaction types with the selected banking product. Click **Insert existing** and select the desired transaction types.

Double-click a selected transaction type to edit it.

Transaction Configuration

Save and close

Save and reload

Edit Transaction Type

Settings

Name

Disbursement

Transaction Code

DSB

Process Type

Disbursement

Edit Form

FTOS_CB_EventDisbursement

Transaction Operation Type

Disbursement

Is System Transaction

☐

Is Automatic Transaction

☐

Real Time Process

☐

Only One Draft

☒

Generate New Contract Version

☐

Commission Type

Return Commission Type

Accounting Configurations

Generates Accounting Entry

☒

OL Master Entity

FTOS_CB_ContractEvent

Purge Configurations

To Be Purged

☒

Purge Number of Days

30

Master Purge Entity

FTOS_CB_ContractEvent

Transaction Value Types

+ Insert

X Delete

Export

Refresh

☐ Transaction Type

Type

Value Type Name

Is Header

Value Type Attrib...

(All)

Transaction Item Accounting Configurations

+ Insert

X Delete

Export

Refresh

☐ Transactio...

Accountin...

Accountin...

Chart Acc...

Currency

Operation...

Take From...

In the **Edit Transaction Type** section, fill in the following fields:

Field	Required	Data Type	Details
Settings			
Name	Yes	Text	Name of the transaction type.
Transaction Code	Yes	Text	The code of the transaction type.
Is Automatic Transaction	Yes	Boolean	This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations.
Is System Transactions	No	Boolean	This checkbox marks the transaction as being neither a credit of the account, nor an allocation of funds, but a transaction that does not influence other transactions within the account. System transactions are meant to be used only for accounting.

Field	Required	Data Type	Details
Real Time Process		Boolean	This checkbox marks the transaction as to be processed in real-time. If the value is True, then the transaction is processed right away. If the value is False, then the transaction is inserted as a bank account transaction queue record.
Edit Form	No	Lookup	The form used to edit this transaction type. The lookup only shows forms defined on the Contract Event entity.
Only One Draft	No	Boolean	If you select this checkbox, there can be only one record of this transaction type in Draft status created at the contract level.
Generate New Contract Version	No	Boolean	This checkbox allows you to specify if a new contract version should be generated by this transaction type.
Commission Type	No	Lookup	The commission type applicable for this transaction type. Return fee commissions are filtered out and can't be selected.
Return Commission Type	No	Lookup	The return fee commission type applicable for this transaction type. Only return fee commissions can be selected.

Field	Required	Data Type	Details
Process Type	Yes	Option set	<p>This field associates the process type with the transaction operation type, which makes the connection with the transaction motor of bank accounts. Select one of the processes defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div>
Accounting Configurations			
Generates Accounting Entry	Yes	Boolean	This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity.
OL Master Entity	Yes	Lookup	The entity referenced by the accounting systems.
Purge Configurations			
To Be Purged	No	Boolean	This checkbox marks the transaction as purgeable. If selected, it allows you to purge or archive records in Draft status.
Purge Number of Days	Yes	Whole Number	The default number of calendar days that a record can be kept in Draft status before it is purged. For additional information, see the Core Banking System Parameters page. This field is displayed only when To Be Purged = True.

Field	Required	Data Type	Details
Master Purge Entity	Yes	Lookup	The master purge entity under which the draft records are. This field is displayed only when To Be Purged = True.

You can also edit the information in the **Transaction Value Types**, **Transaction Item Accounting Configurations** and **Transaction Accounting Models** sections. Read more details about Transaction Types in the **Operational Ledger** User Guide.

Click the **Save and Close** button at the top right corner of the page.

The following transaction types are typically used for current accounts with overdraft functionality:

- **Top Up Account** - If added at banking product level, the customer is allowed to make top ups at the contract level. When a top up transaction is recorded in a contract, at the next maturity date the customer receives the interest for the initial amount up until the top up date, plus the interest for the full amount (initial amount + top up amount) proportional from top up to payment date.

This transaction type is automatically added in the **Associated Transactions** tab if **Allow Top Ups** was selected in the [Details tab](#).

- **Withdraw** - If added at banking product level, the customer is allowed to make withdrawals at the contract level.

This transaction type is automatically added in the **Associated Transactions** tab if **Allow Withdrawals** was selected in the [Details tab](#).

If this transaction type is not inserted for deposits, in order to have access to the funds before maturity date, the customer has to liquidate the deposit. In this case the interest is not paid.

- **Transfer between my bank accounts** - If added at banking product level, the customer is allowed to move funds between their accounts at the contract level.

This transaction type is automatically added in the **Associated Transactions** tab if **Allow Withdrawals** was selected in the [Details tab](#).

- **Accruals and Provisions** - System transaction. If added at banking product level, the accruals and provisions for contracts can be calculated on a daily basis.

This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Overdraft Payment** - If added at banking product level, the customer can perform payments from the current account using the overdraft functionality, practically using an amount larger than the positive balance of the account, up to the overdraft limit defined at the contract level.

This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Revert Transfer between my bank accounts** - System transaction. If added at banking product level, transfers between the same customer's bank account can be reverted after being performed.

This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Interest capitalization** - System transaction. If added at banking product level, the interest for contracts can be capitalized.

This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

NOTE

If you selected the **Allow Top Ups** and **Allow Withdrawals** checkboxes

within the **Details** tab, then the Top Up Account, Transfer between my bank accounts and Withdraw transaction types are automatically attached in the **Associated Transactions** tab.

History

The **History** tab displays the versions of the banking product, their workflow status and the user who modified the product.

Label	Name	attributeVersionDate	attributeVersion	Modified by user
Draft	Duplicate	19/04/2022 10:29	1	[User Icon]

Here you can track the product's life cycle and review older versions that are no longer active (for details, see ["Banking Products' Life Cycle"](#) on page 595).

Origination Elements

The **Origination Elements** tab holds the elements required in origination journey, such as product benefits, display conditions, features, destination types, or associated products.

Product Image
ProductIMG.jpg
Add file or Drop file here

Document
ProductPresentationDoc.pdf
Add file or Drop file here

Benefits
Quick Approval
Low Interest Rates

Display Conditions

Product Features
+ Insert X Delete Export Refresh
Feature DisplayName Show Order
NMNGTFEES No Management ... 1

Product Destination Types
+ Insert existing X Remove existing
Display Name
Personal

Associated Products
+ Insert existing X Remove existing
Name
Current Account USD

You can fill in the following fields:

Field	Required	Data Type	Details
Product Image	No	File	Insert an image representative for the product.
Document	No	File	Insert the document representative for the product.
Benefits	No	Text area	Insert the advantages of owning the banking product. You can format the text in the text editor window.
Display Conditions	No	Text area	Insert the conditions for the applicant, e.g. age limit, annual turnover, education level, income, registration documents.

Click the **Save and Reload** button at the top right corner of the page.

Product Features Section

In the **Product Features** section, you can insert, delete or export features. To add a feature, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Feature	No	Text	Enter the name of the product feature.
Is Main Feature	No	Boolean	Select the checkbox if it is the major feature.
Display Name	No	Text	Enter the display name of the feature.

Click the **Save and Reload** button at the top right corner of the page.

Product Destination Types Section

The **Product Destination Types** section allows for insertion or removal of existing product destination types. Click **Insert existing** and select one of the existing destination types, or insert a new one. To create a new destination type, insert a name and specify if it is default. For this case, the following have been configured:

- Loan Collateral
- Loan disbursements

- Personal
- Repayments.

Associated Products Section

The **Associated Products** section allows for insertion or removal of existing products. It is especially useful when you wish to create a link between two products. You can insert or remove a product from the list or create a new one.

Associated Products

The interface for the 'Associated Products' section includes a header with two buttons: '+ Insert existing' and 'X Remove existing'. Below this is a table with a search bar and a list of products. The first row shows a checkbox, the text 'Name', a search input field with a magnifying glass icon, and the text 'Current Account USD'.

Click the **Save and Reload** button at the top right corner of the page.

GL Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

In the **Banking Product GL Accounts** section, you can set specific accounts to be used by the **Operational Ledger** system for transactions performed on contracts based on this banking product. Thus, you can overwrite the generic settings of the Operational Ledger, instructing it to use the accounts specified at banking product level.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Product Formula Engine 6 Documents 7 Loan Core Settings 8 History 9 Origination Elements 10 GL Settings

Banking Product GL Accounts

+ Insert X Delete Export Refresh

Product Accounting System Accounting Scope Item GL Account

Q Q Q Q Q

Duplicate 0001 FixDeposit Loan Admin Fee 20110 Commercial loans

To add specific accounts to be used by **Operational Ledger**, click **Insert** and fill in the following fields in the displayed **Add Banking Product GL Account** page:

← Save and close Save and reload Save and new

Add Banking Product GL Account

Main Information

Product Accounting System Accounting Scope Item GL Account

Duplicate 0001 FixDeposit Loan Admin Fee 20110 Commercial loans

Field	Required	Data Type	Description
Product	Yes	Option set	Select from the list the banking product. Automatically completed with the banking product you are currently editing.
Accounting System	Yes	Option set	Select from the list the desired accounting system. The list contains the records created in the FTOS_GL_AccountingSystem entity.
Accounting Scope	Yes	Option set	Select from the list the corresponding accounting scope. The list contains the records created in the FTOS_GL_AccountingScope entity.
Item	No	Option set	Select from the list the corresponding transaction item. The list contains the records created in the FTOS_GL_TransactionItemAccountingConfig entity.

Field	Required	Data Type	Description
GL Account	Yes	Option set	Select from the list the corresponding GL account. The list is filtered based on the previously selected accounting system. It contains the accounts defined in the FTOS_GL_AccountingChart entity that were added to the chosen accounting system record.

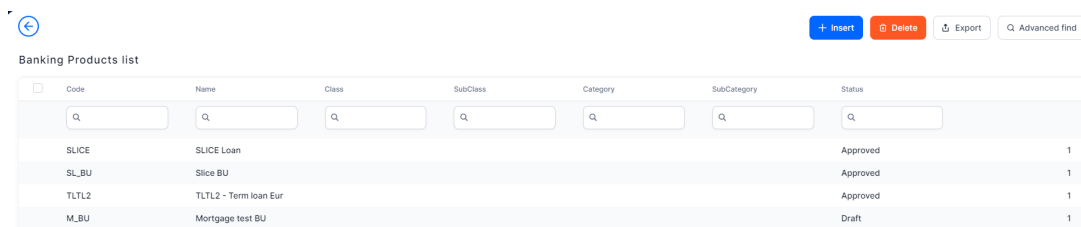
Click the **Save and Reload** button at the top right corner of the page.

Cards

A card is a payment card issued by a bank. Cards let customers access funds in checking or savings accounts or make purchases.

To manage banking products:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, click **Product Factory**.
4. Click **Banking Products** to open the **Banking Products List** page.



<input type="checkbox"/>	Code	Name	Class	SubClass	Category	SubCategory	Status	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	SLICE	SLICE Loan					Approved	1
	SL_BU	Slice BU					Approved	1
	TLTL2	TLTL2 - Term loan Eur					Approved	1
	M_BU	Mortgage test BU					Draft	1

On the **Banking Products List** page, you can:

- Add a new banking product by clicking the **Insert** button at the top right corner.
- Edit an existing banking product from the list by double-clicking it.
- Delete a banking product by selecting it and clicking the **Delete** button at the top right corner.

NOTE

For banking products in **Active** status, you can't change any of their related entities (such as features, discounts, product guarantee, interest or commission item, formula, test scenario, product covenant, product disbursement, product availability item filter). To change any of the product's related entities, create a new version of the banking product record.

Creating Cards

To create a new banking product, click the **Insert** button on the top right side of the page. A new page opens, with a series of tabs that assist you in configuring the banking product:

1. **Main Info** - The first tab requires the basic elements for the creation of a product such as product type, name, code, hierarchy and features.
2. **Details** - This tab requires further elements that build on the first tab such as interest, payment type, top-ups, withdrawals and associated products.
3. **Availability** - This tab determines the monetary range and the time frame when the product is available for customers.
4. **Dimensions** - This tab displays the interests, commissions, insurances, discounts and questions valid for a product.
5. **Product Formula Engine** - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. **Documents** - This tab contains all the attached documents available for a product.

7. [Lean Core Settings](#) - This tab holds Core Banking related settings, such as transactions that are done to and from a banking product, reconciliation account associated with the product, mandatory roles for contract approval, payment allocation settings, or closing contract settings are found in this tab.
8. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
9. [Origination Elements](#) - This tab holds the elements required in origination journeys, such as product benefits, display conditions, features, destination types, or associated products.
10. [GL Settings](#) - This tab contains the accounts to be used by Operational Ledger for transactions performed on contracts based on this banking product.

Main Info

The **Main Info** tab requires the basic elements for the creation of a product such as name, code, currency, validity, or product classification.

The following fields are available:

Field	Required	Data Type	Details
Main Information			

Field	Required	Data Type	Details
Banking Product Type	Yes	Option Set	<p>Choose one for the following:</p> <ul style="list-style-type: none"> • Bank Account • Card • Credit Card • Deposit • Leasing • Mortgage • Overdraft • Term Loan <div> NOTE Your product type selection greatly influences the next steps. It is important to choose the right type of product to build. </div>
Currency	Yes	Lookup	Choose the currency for this banking product.
Banking Product Code	Yes	Text	Enter the code of the product. It can have 10 characters and it is used in the contract. It uses a sequencer and the code of the product type.
External Code	No	Text	The code of the product imported from an external system, if applicable. It can have 10 characters and it is not used in the contract.

Field	Required	Data Type	Details
Start Date	Yes	Date	Select the date when the product becomes available.
End Date	Yes	Date	Select the last date from when the product is available. From that date forward, the product is no longer available.
Name	Yes	Text	Enter the name of the product.
Class	No	Option set	Select the class of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Subclass	No	Option set	Select the subclass of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Category	No	Option set	Select the category of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
SubCategory	No	Option set	Select the subcategory of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Description			
Description	No	Text area	Write any description or additional text here.

Click the **Save and Reload** button at the top right corner of the page.

Product Classification Section

In the **Product Classification** section, you can insert or remove existing product classification items. To add a product classification item, click **Insert Existing** and select an already existing item.

Product Classification

+ Insert existing ✕ Remove existing

<input type="checkbox"/>	Code	Name	Classification Type	Valid From	Valid To
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	REG1	Classification ...	Regulatory	01/01/2020	31/12/2030

You can also create a new product classification item by clicking **Insert**. On the newly displayed **Add Product Classification** page, fill in the following fields:

←
✓
Save and close
Save and reload
Save and new

Add Product Classification

Main Information

Name	Code	Valid From	Valid To	Classification Type	Is Default
<input type="text" value="Reg 2"/>	<input type="text" value="REG2"/>	<input type="text" value="18/04/2022"/>	<input type="text" value="30/04/2029"/>	<input type="text" value="Regula..."/>	<input type="checkbox"/>

[Classified Banking Products](#)

Field	Required	Data Type	Details
Classification Type	Yes	Option set	Choose the classification type of the item. Possible values: Regulatory, Restructuring.
Name	Yes	Text	Enter the name of the classification item.
Code	Yes	Text	Enter the unique code of the classification item.
Is Default	Yes	Boolean	Select the checkbox if this classification item is default.
Valid From	Yes	Invariant Date	Select the date from which the product classification item is valid.
Valid To	Yes	Invariant Date	Select the date until when the product classification item is valid.

The **Banking Products Classification Section** is displayed after saving the classification item record and allows you to insert existing banking products. The following information is displayed here:

Field	Details
Code	The code of the banking product added to the product classification item.
Name	The name of the banking product.
Class	The class of the banking product.
SubClass	The subclass of the banking product.
Category	The category of the banking product.
SubCategory	The subcategory of the banking product.
Status	The status of the banking product record.

Click the **Save and Reload** button at the top right corner of the page.

IMPORTANT! For cards, select Banking Product Type = **Card**.

Details

The **Details** tab requires further elements such as interest, payment type, top-ups and withdrawals.

For the **General Data** section, the following fields are available:

Field	Required	Data Type	Details
General Data			
Auto Rollover	No	Boolean	If the checkbox is selected, the contract is renewed at maturity date in exactly the same conditions. If it remains unchecked, the contract is automatically closed at maturity date. The field is used mostly for deposits or any product that can undergo the extension of contract.
Allow Refinancing	No	Boolean	Select if the account can be refinanced for this product.

Field	Required	Data Type	Details
Allow Restructuring	No	Boolean	Select if the contract can be restructured.
Allow CoDebtor	No	Boolean	Select if another debtor exists for this product.
Max No. of CoDebtors	No	Text	Set the maximum number of debtors possible for this product.
Allow Top Ups	No	Boolean	Select if the amount can be topped up with a sum of money.
Allow Withdrawals	No	Boolean	Select if the customer can take out money for this product.
Allow Negotiated IR	No	Boolean	Select if for this product the interest rate is negotiable.
Allow Overdraft	No	Boolean	Select if for this product allows overdrafts.
Interest Is Capitalized	No	Boolean	Only applicable if there is an interest rate. Select if true.
Interest Payment Type	No	Option Set	<p>Select the regularity of interest payments. Select one from the following:</p> <ul style="list-style-type: none"> • Once (the whole interest amount is paid at maturity) • Monthly • Trimester • Semestrial • Annual.
Disburse Settings			
Auto Disbursement	Yes	Boolean	Specify if the disbursement is automatically performed when the contract is approved.

Field	Required	Data Type	Details
Max No Disbursements	No	Whole number	Enter the maximum number of disbursements that can be configured for this product.
Activ Tranches On Document Submission	No	Boolean	If you select this checkbox, then the tranches are activated (disbursements are created and approved) after certain documents are submitted. It is the Financial Institution's responsibility to verify the content of the submitted documents.

Click the **Save and Reload** button at the top right corner of the page.

1 Main Info
2 Details
3 Availability
4 Dimensions
5 Product Formula Engine
6 Documents
7 Loan Core Settings
8 History
9 Origination Elements
10 GL Settings

General Data

Auto Roll Over
☒

Allow Refinancing
☐

Allow Restructuring
☐

Allow CoDebtor
☐

Max No. Of CoDebtors

Allow Top Ups
☒

Allow Withdrawals
☒

Allow negotiated IR
☐

Allow Overdraft
☒

Interest Is Capitalized
☐

Interest Payment Type

Disburse Settings

Autodisbursement
☐

Max No Disbursements

Product Guarantees

Is Guaranteed
☒

Collateral Cover Percent

Allow Collateral Partial Release
☐

Allowed Guarantee Types

+ Insert
X Delete
Export
Refresh

Guarantee Type	Max Accepted Covering Percent
<input type="text"/>	<input type="text"/>

No data

Payment Schedule Types

Period Type

Periodicity Type

Schedule Templates

+ Insert existing
X Remove existing

Name
<input type="text"/>

No data

Holiday Settings

Holiday Shift For Repayment Installments
☒

Defer Due Date
☒

Holiday Shift Method

Country Calendars

+ Insert existing
X Remove existing

Name
<input type="text"/>

Romania

Product Guarantees Section

For the **Product Guarantees** section, the following fields are available:

Field	Required	Data Type	Details
Is Guaranteed	Yes	Boolean	<p>This checkbox marks the product as secured or unsecured.</p> <div> <p>NOTE</p> <p>The Collateral Cover Percent and Allow Collateral Partial Release fields and the Allowed Guarantee Types section appear when you select this checkbox.</p> </div>
Collateral Cover Percent	No	Whole number	The percent that the collateral person on the contract pays. It usually is over 100%.
Allow Collateral Partial Release	No	Boolean	A partial release is a mortgage provision that allows some of the collateral to be released from a mortgage after the borrower pays a certain amount of the loan.

Product Guarantees

Is Guaranteed

☒

Collateral Cover Percent

100

Allow Collateral Partial Release

☐

Allowed Guarantee Types

+ Insert

✕ Delete

📄 Export

🔄 Refresh

☐

Guarantee Type

Max Accepted Covering Percent

Q

Q

FixDeposit

85.00

In the **Allowed Guarantee Types** section, displayed if the **Is Guaranteed** checkbox was selected earlier, you can insert or delete allowed guarantee types. To insert a guarantee type, click the **Insert** button and fill in the name, maximum accepted covering percent, and select the guarantee type.

Add Product Guarantee Structure

Product Guarantee Structure

Banking Product

Card

Guarantee Type

FixDeposit

Max Accepted Covering Percent

85

Name

Deposit

Click the **Save and Reload** button at the top right corner of the page.

Payment Schedule Types Section

In the **Payment Schedule Types** section, the following fields are available:

Field	Required	Data Type	Details
Period Type	No	Option set	<p>Select the period of availability for the product. Choose one:</p> <ul style="list-style-type: none"> • Days • Weeks • Months • Years • Once. <div> <p>NOTE</p> <p>The period type must be the same as the measurement unit of the Periodicity Type.</p> </div>

Field	Required	Data Type	Details
Periodicity Type	Yes	Option set	<p>Select the regularity of payments. Select one from the following:</p> <ul style="list-style-type: none"> • Once (the whole amount is paid at maturity) • Weekly • Monthly • Bimonthly • Trimestrial • 4 Weeks • Semestrial • Annual • 30Days. <div> <p>NOTE</p> <p>If the measurement unit of the selected Periodicity Type = Days, then Holiday Shift For Repayment Installments = False and it cannot be changed.</p> </div>

Click the **Save and Reload** button at the top right corner of the page.

Schedule Templates Section

In the **Schedule Templates** section, you can associate/ delete payment schedule types to/ from the banking product.

Schedule Templates

+ Insert existing

✕ Remove existing

<input type="checkbox"/>	Name
	<input type="text"/>
	Credit Card Installments
	One principal installment

To associate a payment schedule type to the banking product, click **Insert Existing** and select one of the already defined types. Go to ["Payment Schedule Types"](#) on page 530 to read more about this.

IMPORTANT!

When creating a new Term Loan, Mortgage, or Overdraft banking product, you must select at least one payment schedule type, otherwise you can't approve the product. If the **Schedule Templates** section has no records, an error message is displayed upon transitioning the product into the **Approved** status: "At least one Payment schedule type definition must be selected for approval!"

Click the **Save and Reload** button at the top right corner of the page.

Holiday Settings Section

In the **Holiday Settings** section, the following fields are available:

Holiday Settings

Holiday Shift For Repayment Installments

☒

Defer Due Date

☒

Holiday Shift Method

Forward

Country Calendars

+ Insert existing

× Remove existing

☐

Name

Q

Romania

Field	Required	Data Type	Details
Holiday Shift For Repayment Installments	Yes	Boolean	<p>This checkbox marks if the holidays are considered for the calculation of the maturity schedule.</p> <div>NOTE The Country Calendars section and the Defer Due Date and Holiday Shift Method fields appear if you select this checkbox.</div>
Defer Due Date	Yes	Boolean	<p>If you select the checkbox, the payment schedule calculates the next payment amount as if the due date has not changed even when the due date falls on a holiday. This checkbox is selected by default.</p>

Field	Required	Data Type	Details
Holiday Shift Method	No	Option set	<p>Select from the list the method to be used when calculating the due date if that date falls to a holiday. The due date can be shifted before or after the holiday.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • None - the due date is not shifted. • Forward - the due date is shifted to the next working day after the initially calculated due date. • Backward - the due date is shifted to the last working day before the initially calculated due date. <p>Default value: Forward.</p>

In the **Country calendars** section, you can insert or delete calendars. You can work with multiple calendars as well. Click the **Insert Existing** button and add the country's name. If the maturity date coincides with a holiday, it is allocated automatically on the next business day.

Click the **Save and Reload** button at the top right corner of the page.

Availability

The **Availability** tab determines the monetary range and the time frame when the product is available for customers.

1 Main Info2 Details3 Availability4 Dimensions5 Product Formula Engine6 Documents7 Lean Core Settings8 History9 Origination Elements10 OL Settings

Product Availability

Minimum Amount

Maximum Amount

Minimum Period

Maximum Period

1

121,321

1

361

Availability Rules

Product Availability Item Filters

+ Insert

X Delete

Export

Refresh

Description

Q

Product Covenants

+ Insert

X Delete

Export

Refresh

Type

Covenant

Valid From

Valid to

Value

Q

Q

Q

Q

Q

The following fields are available:

Field	Required	Data Type	Details
Minimum Period	No	Whole Number	The minimum duration of the product mentioned in the contract.
Maximum Period	No	Whole Number	The maximum duration of the product mentioned in the contract.
Minimum Amount	No	Whole Number	The minimum amount of the product for which the bank opens a contract.
Maximum Amount	No	Whole Number	The maximum amount of the product for which the bank opens a contract.

Availability Rules Section

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see "[Product Filter](#)" on page 519.

Availability Rules

Product Availability Item Filters

+ Insert

X Delete

Export

Refresh

Description

Q

CA >< 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Product Covenants Section

In the **Product Covenants** section you can set certain conventions that applicants must abide by after getting the loan. This is usually applicable for corporate clients that must meet certain requirements in order to continue to receive disbursements.

Product Covenants

<div> <div>+ Insert</div> <div>X Delete</div> <div>Export</div> <div>Refresh</div> </div>					
<input type="checkbox"/>	Type	Covenant	Valid From	Valid to	Value
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Affirmati...	Borrowers should perform tax obligations	19/04/2022	20/04/2030	
	Financial	Lender can monitor borrower's current r...	19/04/2022	20/04/2030	

Click the **Insert** button to add a covenant to the product. Each covenant can be attributed a value, an availability period, and a review frequency in months. Read more about covenants in the "[Covenant](#)" on page 567 page.

Click the **Save and Reload** button at the top right corner of the page.

Dimensions

The **Dimensions** tab displays the interests, commissions, insurances, discount and questions valid for a product.

1 Main Info
2 Details
3 Availability
4 Dimensions
5 Product Formula Engine
6 Documents
7 Loan Core Settings
8 History
9 Origination Elements
10 GL Settings

Interest & Commissions

+ Insert

X Delete

Export

Refresh

MCA

Discounts

+ Insert

X Delete

Export

Refresh

No data

Insurances

+ Insert

X Delete

Export

Refresh

House Insurance

Questions

+ Insert existing

X Remove existing

Question1 Active
Question2 Active

You can insert, delete or export interest, commissions, insurances, discounts or questions. To add a new one, click **Insert** and fill-in the fields detailed in the sections below.

NOTE

To configure the interest and commissions separately, navigate to **Main > Product Factory > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions Section

Click **Insert** to add an [interest](#) or a [commission](#). In the **Interest & Commission Item** page, fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Enter a code for this particular interest/ commission.
Item Name	Yes	Text	Enter a name.
Start Date	No	Date	The start date when the interest/ commission becomes effective.
End Date	No	Date	The end date for the interest/ commission.
Interest List	No	Option set	Select from which list the interest is a part of.
Commissions List	No	Option set	Select from which list the commission is a part of.
Minimum Interest Rate (%)	No	Numeric	Enter the percent applicable as a minimum interest rate at the contract level.
Is Negotiable	No	Boolean	Select the checkbox to specify that every interest, commission or margin field at the contract level is negotiable and can be edited.

Click the **Save and Reload** button at the top right corner of the page.

In the **Interest & Commission Item Filters** section, click **Insert** to insert an [item filter](#) and fill in the following fields:

Field	Required	Data Type	Details
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Value/ Date	No	Text/Date	Select the beginning value/ date for the filter.
Until Value/ Until Date	No	Text/Date	Select the maximum value/ date for the filter.
Description	No	Text area	This field is automatically filled in after clicking the Save and Reload button. The values/ dates inserted above are turned into an expression.
For Lookup attributes			
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Option Set	No	Option set	It is automatically filled in with the option set name created for the attribute.
Description	No	Text area	It is left blank. Add a description if needed.
Grid of Options	No	Grid	This field is automatically filled in after clicking the Save and Reload button. The values of the option set are displayed. Select the Boolean for the values you wish to include in the filter.



Save and close

Save and reload

Edit Interest & Commission Item Filter

Main Information

Filter

AL_Amount

Value

1

Until Value

50,000

Description

AL_Amount >< 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Insurances Section

For any banking product, you can select a pre-existing insurance or create a new one. To add a new [insurance](#), fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Insert a code for this particular insurance.
Item Name	Yes	Text	Insert a name.
Start Date	No	Date	It is the start date when the insurance becomes effective.
End Date	No	Date	It is the end date for the insurance.
Details	No	Text area	It is left blank. Add a description if needed.
Insurance List	No	Option set	Select from which list the insurance is a part of.

Click the **Save and Reload** button at the top right corner of the page.

In the **Insurance Item Filters** section, click **Insert** and fill in the following fields:

Field	Required	Data type	Description
Filter	Yes	Option set	The name inserted earlier.
Value	Yes	Text	The starting value for the attribute.
Until Value	Yes	Text	The ending value of the interval.

Field	Required	Data type	Description
Description	No	Text area	Insert the proper description for the availability filter.

Click the **Save and Close** button at the top right corner of the page.

Discounts Section

For any banking product, you can add discounts of any nature. You can select a pre-existing discount or create a new one.

Click the **Insert** button to add a new [discount](#). In the **Details** page, fill in the following fields:

Field	Required	Data Type	Details
Name	Yes	Text	Insert the appropriate name for the discount.
Discount	No	Option set	Choose one of the pre-configured types of discounts or create a new one. According to the selected type, new fields appear on the page requiring to be filled in.
Value discount	No	Numeric	Insert the value of the discount to be applied, e.g. 15.
Start date	Yes	Date	It is the start date when the discount becomes effective.
End date	Yes	Date	It is the end date for the discount.
Applied to dimension	No	Option set	Specifies for which product dimension this discount is applicable (interest, commission or insurance). This is autocompleted by the selected discount's dimension.

Field	Required	Data Type	Details
Commission type	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount. Specifies for which commission type this discount is applicable. This is autocompleted by the selected discount's default commission type.
Commission	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount. Specifies for which commission this discount is applicable. This is autocompleted by the selected discount's default commission.
Insurance class	No	Lookup	This field appears if the selected discount = Discount Life Insurance or Interest Discount. Specifies for which insurance class this discount is applicable (credit, home, life or other insurance class). This is autocompleted by the selected discount's insurance class.
Insurance	No	Lookup	This field appears if the selected discount = Discount Life Insurance. Specifies for which insurance this discount is applicable. This is autocompleted by the selected discount's insurance.
Interest type	No	Lookup	This field appears if the selected discount = Interest discount. Specifies for which interest type this discount is applicable.

Field	Required	Data Type	Details
Use Banking Formula	No	Boolean	If you select this checkbox, the discount is calculated using the Banking Formula engine.
Is optional discount?	No	Boolean	Selecting this checkbox results in the discount being applied only if the customer agrees to the discount.
Is percentage	No	Boolean	If you select this checkbox, the discount is calculated as a percentage from the contract's amount.
Destination entity	No	Option set	Select the entity where to register the discount. This field opens when the Is optional discount? checkbox is selected.
Destination entity attribute	No	Option set	Select the attribute where to register the discount. This field opens when the Is optional discount? checkbox is selected.

Click the **Save and Reload** button at the top right corner of the page.

In the **Product Discount Item Filter** section, click **Insert** and fill in the fields as specified in the **Product Filter page**. The fields displayed depend on the selected filter.

Click the **Save and Reload** button at the top right corner of the page.

Questions Section

Choose one or more questions to add to the banking product, or insert a new one.

To insert a new [question](#), click **Insert existing**, then click **Insert**. In the **Add Banking Product Question** page, fill in the following fields:

Field	Required	Data type	Description
Question	No	Text	Enter the appropriate name.

Field	Required	Data type	Description
Answer Type	No	Option set	Select the type of answer the customer has to give: <ul style="list-style-type: none"> • text • numeric • option set.
Answer Entity	No	Option set	Select the entity where the answer is stored.
Answer Field	No	Option set	Select the attribute where the answer is stored.

Click the **Save and Reload** button at the top right corner of the page.

The **Banking Products List** shows where the question is used.

IMPORTANT!

The question has to be activated in order for it to be added to the banking product.

Click the **Save and Close** button at the top right corner of the page.

For example, this is how a question is displayed in a digital journey in the FintechOS Portal:

The screenshot shows a digital journey interface for a loan application. At the top, there's a progress bar with 'CURRENT STATUS: INITIALIZED' and 'NEXT STATUS: CHOOSE STATUS'. Below this is a blue header bar that says 'EDIT LOAN APPLICATION'. The main content area is titled 'Eligibility Questions' and includes a sub-header: 'We ask for this information so that we can carry out the checks needed to consider you for a mortgage'. There are three input fields: 'DEPOSIT SOURCE' with a dropdown menu showing 'Select...', 'RETIREMENT DATE' with a date picker, and 'RETIRED' with radio buttons for 'Yes' and 'No' (where 'No' is selected). A 'Finish' button is located at the bottom right of the form.

Product Formula Engine

The **Product Formula Engine** tab keeps formulas built with [Formula Engine](#) for the banking product. Such formulas can be used to determine the eligibility of a customer.

The screenshot shows the 'Product Formula Engine' tab in the Banking Product Factory. It contains two main sections: 'Banking Product Formulas' and 'Test Scenarios'. Each section has a search bar and three buttons: '+ Insert', 'X Delete', and 'Export'. Below the search bars, there are filters for 'Name', 'Formula Type', and 'Formula'. In the 'Banking Product Formulas' section, the filters show 'CA' for Name, 'CommissionFormula' for Formula Type, and 'commissionByAmount' for Formula. In the 'Test Scenarios' section, the filters show 'Duplicate-19-04-2022_11:07:57' for Name and 'CommissionFormula' for Formula Type.

Banking Product Formulas Section

In the **Banking Product Formulas** section, choose an already defined formula or click **Insert** to configure a new one, for example a formula for eligibility or scoring purposes. For information on how to build a formula, see [Define Formula Inputs](#).

In the **Add Banking Product Formula** page, fill in the following fields:

The screenshot shows the 'Edit Banking Product Formula' page. At the top, there are two buttons: 'Save and close' and 'Save and reload'. Below the title 'Edit Banking Product Formula', there is a section titled 'Main Information'. This section contains four fields: 'Name' (with value 'CA'), 'Banking Product' (with value 'Duplicate'), 'Formula Type' (with value 'CommissionFormula'), and 'Formula' (with value 'commissionByAmount'). Each field has a 'Duplicate' button and a 'Map Data' button. Below the 'Main Information' section, there is a 'Data Mapping' section with a field containing the value 'BPFormulaType_Test Formula_3647267821582_formula' and a 'Map Data' button.

Field	Required	Data type	Description
Name	Yes	Text	Enter an appropriate name.
Banking Product	No	Option set	The name of the banking product is inserted automatically.
Formula Type	Yes	Lookup	Select the type of formula configured before, e.g. scoring /eligibility.

Field	Required	Data type	Description
Formula	Yes	Lookup	Select the previously configured formula. <div style="background-color: #f9a825; padding: 10px; border: 1px solid #f9a825;"> <p>IMPORTANT!</p> <p>The formula must be activated before attaching it to a product.</p> </div>
Data Mapping	No	Lookup	Select the previously configured data mapping.

After selecting the desired formula, click **Save and reload**, then click **Map Data**.

← Save and close Save and reload

1 Definition 2 Input 3 Output

Formula parameter mapping

Data Mapping Type Banking Product

Master Entity FTOS_CB_Contract

Operation Name test

Name BPFormulaType_Test Formula_1647267821582_formula

In the **Formula Mapping** page, click **Input** and configure the input data for the formula.

Click **Output** and configure the output for the formula.

← Save and close Save and reload

1 Definition 2 Input 3 Output

FTOS_CB_Contract - Output

× step1 click to map

Click the **Save and Close** button at the top right corner of the page.

Such formulas can be used in digital journey steps, for example when the customer inserts their financial data.

EDIT RETAIL APPLICANT DATA

Income & Outgoings

We use your expected income and outgoings to work out how much we'll be able to lend and to ensure that any mortgage we may offer you is affordable.

WHAT IS YOUR ANNUAL SALARY BEFORE TAX? €

PAYING MONTHLY FOR OTHER LOANS: €

TOTAL CREDIT CARDS LIMITS: €

OTHER SPENDING: €

LIFE, HEALTH INSURANCE AND PRIVATE PENSIONS

ARE YOU MARRIED? [none]

NUMBER OF CHILDREN: 0

CHILDCARE AND EDUCATION COSTS: €

HOW MANY FINANCIAL DEPENDANTS: 0

MAINTENANCE FOR DEPENDANTS:

EDUCATION LEVEL: [none]

EMPLOYMENT STATUS: [none]

EMPLOYMENT MONTHS:

YOUR RESIDENCE IS: [none]

YOUR RENT IS:

Test Scenarios Section

A good practice is to test the formula before displaying it in a digital journey. You can do that in the **Test Scenarios** section.

Click **Insert** to open the **Add Test Scenario** page.

Insert a **Test Scenario Type** from the option set. The keys and the values are shown. Click the **Save and Reload** button at the top right corner of the page.

← Save and close Save and reload

Edit Test Scenario

Main Information

Test Formula Type: CommissionFormula

Key	Value
Amount	23.45

Save Output Data Calculate

Test Scenario Outputs

+ Insert X Delete Export Refresh

Name

Click the **Calculate** button. The outputs are displayed in the **Test Scenario Outputs** section. These outputs can be saved by selecting the **Save Output Data** checkbox next to **Calculate**.

Documents

The **Documents** tab contains all the attached documents available for a product.

Banking Product Documents Section

The previously associated documents are displayed in the **Banking Product Documents** section.

To attach a new document to the banking product, click **Insert** and fill in the following fields:

Field	Data Type	Description
Operation Code	Whole number	Enter a code for the document.
Banking Copies No	Whole number	Insert the number of copies made.
Report	Lookup	Select a document from the list.
Document Type	Option set	Select a document type from the list.
Is Mandatory	Boolean	Select if the document is mandatory.
Includes Debtor	Boolean	Select if the document includes the debtor.
Includes Coborrower	Boolean	Select if the document includes the co-borrower.
Requires Signature	Boolean	Select if the document requires to be signed.
Is accord	Boolean	Select if the document represents the accord.

Click the **Save and Close** button at the top right corner of the page.

Banking Products Agreements Section

The agreements that a customer needs to go through are displayed in the **Banking Products Agreements** section.

To attach a new agreement to the banking product, click **Insert** and fill in the following fields:

Field	Required	Data Type	Description
Agreements	Yes	Option set	Select an agreement from the list.
Banking Product	Yes	Option set	It is automatically filled in.
Code	No	Whole number	Insert the corresponding code.
Is Mandatory	No	Boolean	Select if the agreement is mandatory for the product.

Click the **Save and Close** button at the top right corner of the page.

For more information on how to configure a contract or an agreement, see the [Digital Document Processor](#).

Lean Core Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

Transactions types that are performed to and from a banking product are displayed in the **Lean Core Settings** tab. The tab also holds information about the reconciliation account associated with the products, mandatory roles for

contract approval, payment allocation settings, the treatment of returned goods for contracts based on this banking product (only for Term Loans and Mortgage banking products), and closing contract settings.

Self Bank Account Associated With The Product Section

For each banking product, you must select a reconciliation account, which is the bank account to be used for transactions.

Next to the **Reconciliation Account** field, select a value from the list to be the current account from which or to which the money is wired from or to.

NOTE

This account must have the same currency as the product, because the translations are performed from and into this account.

Select a value for the **Negative Value Treatment** drop-down to specify how Core Banking treats situations when the funds of the reconciliation account associated with the banking product used in the contract would go below zero if a disbursement event would be approved. The possible values are:

- **Error** - there is an error message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can't be approved and the balance can't go below zero. Select this value if you want to block any transactions that would result in a negative balance of the reconciliation account associated to the banking product.
- **Warning** - there is a warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can be approved and the balance can go below zero.
- **NoMessage** - there is no error or warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account. The event can be approved and the balance can go below zero.

NOTE

Core Banking also has a system parameter, `ReconciliationAccountTreatment`. That is a system-wide setting, applicable to events for contracts based on all banking products without a specified `Negative balance treatment` value. Core Banking takes into consideration the settings used at the banking product level (the `Negative balance treatment` field's value). Thus, if the value is specified at the banking product level, then that value takes precedence over the system parameter's setting.

If you associate the same reconciliation account to more than one banking product, then the setting selected in banking product A is applied for contract events based on banking product A, while for the banking product B, Core Banking would apply the setting selected at the level of banking product B.

Payment Allocation Settings Section

This section holds the payment allocation settings. This is where you can decide which allocation method should be used to determine the order in which credit items are prioritized when repaying loans, credit accounts, and so on. You can also define the grace period settings.

Payment Allocation Settings

Repayment Allocation Method	Grace Days for Repayment	Penalty for grace period
<div>CostOrder</div> <div>↓ ✎</div>	<div>5</div>	<input type="checkbox"/>

Fill in the following fields:

Field	Required	Data Type	Details
Payment Allocation Method	No	Lookup	The payment allocation method represents the recovery order of amounts from payment notifications. Select a payment allocation method from the list.
Grace Days for Repayment	No	Whole number	Insert the number of days for which the bank expects a payment without calculating penalty.
Penalty for grace period	No	Boolean	If you select the checkbox, the penalty interest is applied on the loan contract without taking into consideration the grace period defined at contract level, being calculated for the difference between system date - due date, if the grace period passed and the customer didn't pay the due amounts. If you leave this checkbox unselected, the penalty interest is applied on the loan contract taking into consideration the grace period defined at contract level, being calculated for system date - due date + grace days for repayment.

Click the **Save and Reload** button at the top right corner of the page.

Mandatory Roles for Contract Approval Section

The **Mandatory Roles** section allows you to add the roles of the participants that are mandatory to exist at the contract level for contracts based on this banking product. In other words, when creating contracts based on banking products with Merchant role in this section, you must add a customer with the same Merchant role as contract participant, otherwise, the contract cannot be approved. When **Search Limit** is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role, in this case **Merchant Exposure**.

Mandatory Roles for Contract Approval

In the **Mandatory Roles** section, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Lookup	The banking product for which you define mandatory roles. This is automatically completed with the current banking product.
Role	Yes	Option Set	Select the role of the participants that are mandatory to exist at the contract level for contracts based on this banking product.

Field	Required	Data Type	Details
Search Limit	Yes	Boolean	<p>When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role.</p> <p>If you select a role not associated with a customer limit type in Core Banking, the Search Limit field becomes read-only and unselected.</p>

← Add Mandatory Role

Save and close Save and reload Save and new

Main Information

Banking Product Role Search Limit

Duplicate Merchant ☒

Click the **Save and Reload** button at the top right corner of the page.

Return Of Goods Section

IMPORTANT!

This section is displayed only for **Term Loan** and **Mortgage** banking products.

The fields within this section allow you to define whether a contract based on the banking product can have Returned Amount or Goods transactions or not, and the specific conditions for these transactions. The Returned Amount or Goods transaction type can be used when a customer returns all or part of a loan or mortgage in a short while after contract creation, if the banking product was defined to allow such transactions. You can set up Return Fee type commissions, to return all or some of the claimed commission to the borrower.

To configure the treatment of returned goods for contracts based on this banking product, fill in the following fields:

Field	Required	Data Type	Details
Allow Return Of Goods	Yes	Boolean	Select this checkbox if the contracts based on this banking product accept Return of Goods transactions. Default value: False. If selected, the Accepted Days For Return and Return Message fields are displayed, otherwise, these fields are not visible.
Accepted Days For Return	Yes	Whole Number	Specify the number of days after contract creation during which the return of goods transaction can be created and approved.
Return Message	Yes	Option Set	<p>Select the behavior of messages generated by Core Banking for situations when the Returned Amount or Goods transaction's approval date + the number of accepted days for return \geq the current date. Possible values are taken from the Warning Error Treatment option set. According to the desired behavior, choose:</p> <ul style="list-style-type: none"> • Error, if the transaction should not be approved and an error message should be displayed; • Warning, if the transaction can be approved, but a warning message should be displayed; • NoMessage, if the transaction can be approved without any messages.

Return Of Goods

Allow Return Of Goods



Accepted Days For Return



Return Message



Click the **Save and Reload** button at the top right corner of the page. If Allow Return Of Goods = True, then the Returned Amount of Goods transaction is automatically added to the **Transaction Types** section.

Closing Contract Settings Section**IMPORTANT!**

This section is displayed only for **Term Loan** and **Mortgage** banking products.

In the **Closing Contract Settings** section, you can configure the default closure settings for contracts based on this banking product.

Closing Contract Settings

Buffer Close Days

Close Real Time



Closing Is Flexible



Contract Is Closed Automatically



Fill in the following fields:

Field	Required	Data Type	Details
Buffer Close Days	No	Whole Number	Enter the number of days used as buffer before automatically closing the contract when the contract reaches maturity and its balance reaches zero. If Buffer Close Days > 0, then Contract Is Closed Automatically = False.

Field	Required	Data Type	Details
Close Real Time	No	Boolean	If you select this checkbox, the contract based on this banking product is closed in real-time, when the contract reaches maturity and its balance reaches zero, without waiting for the end of day processes. If Close Real Time = True, then Buffer Close Days = 0 and Contract Is Closed Automatically = True.
Closing Is Flexible	No	Boolean	If you select this checkbox, the closure details of the contract based on this banking product can be modified at the contract creation.
Contract Is Closed Automatically	No	Boolean	If you select this checkbox, the contract based on this banking product is closed automatically at maturity, if the balance reaches zero. If Contract Is Closed Automatically = False, then Close Real Time = False.

Click the **Save and Close** button at the top right corner of the page.

Allowed Transactions Section

In the **Allowed Transactions** section, you can associate possible transaction types with the selected banking product. Click **Insert existing** and select the desired transaction types.

Double-click a selected transaction type to edit it.

Transaction Configuration

Save and close

Save and reload

Edit Transaction Type

Settings

Name

Disbursement

Transaction Code

DSB

Process Type

Disbursement

Edit Form

FTOS_CB_EventDisbursement

Transaction Operation Type

Disbursement

Is System Transaction

☐

Is Automatic Transaction

☐

Real Time Process

☐

Only One Draft

☒

Generate New Contract Version

☐

Commission Type

Return Commission Type

Accounting Configurations

Generates Accounting Entry

☒

OL Master Entity

FTOS_CB_ContractEvent

Purge Configurations

To Be Purged

☒

Purge Number of Days

30

Master Purge Entity

FTOS_CB_ContractEvent

Transaction Value Types

+ Insert

X Delete

Export

Refresh

☐ Transaction Type

Type

Value Type Name

Is Header

Value Type Attrib...

(All)

Transaction Item Accounting Configurations

+ Insert

X Delete

Export

Refresh

☐ Transaction...

Accountin...

Accountin...

Chart Acc...

Currency

Operation...

Take From...

In the **Edit Transaction Type** section, fill in the following fields:

Field	Required	Data Type	Details
Settings			
Name	Yes	Text	Name of the transaction type.
Transaction Code	Yes	Text	The code of the transaction type.
Is Automatic Transaction	Yes	Boolean	This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations.
Is System Transactions	No	Boolean	This checkbox marks the transaction as being neither a credit of the account, nor an allocation of funds, but a transaction that does not influence other transactions within the account. System transactions are meant to be used only for accounting.

Field	Required	Data Type	Details
Real Time Process		Boolean	This checkbox marks the transaction as to be processed in real-time. If the value is True, then the transaction is processed right away. If the value is False, then the transaction is inserted as a bank account transaction queue record.
Edit Form	No	Lookup	The form used to edit this transaction type. The lookup only shows forms defined on the Contract Event entity.
Only One Draft	No	Boolean	If you select this checkbox, there can be only one record of this transaction type in Draft status created at the contract level.
Generate New Contract Version	No	Boolean	This checkbox allows you to specify if a new contract version should be generated by this transaction type.
Commission Type	No	Lookup	The commission type applicable for this transaction type. Return fee commissions are filtered out and can't be selected.
Return Commission Type	No	Lookup	The return fee commission type applicable for this transaction type. Only return fee commissions can be selected.

Field	Required	Data Type	Details
Process Type	Yes	Option set	<p>This field associates the process type with the transaction operation type, which makes the connection with the transaction motor of bank accounts. Select one of the processes defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div>
Accounting Configurations			
Generates Accounting Entry	Yes	Boolean	This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity.
OL Master Entity	Yes	Lookup	The entity referenced by the accounting systems.
Purge Configurations			
To Be Purged	No	Boolean	This checkbox marks the transaction as purgeable. If selected, it allows you to purge or archive records in Draft status.
Purge Number of Days	Yes	Whole Number	The default number of calendar days that a record can be kept in Draft status before it is purged. For additional information, see the Core Banking System Parameters page. This field is displayed only when To Be Purged = True.

Field	Required	Data Type	Details
Master Purge Entity	Yes	Lookup	The master purge entity under which the draft records are. This field is displayed only when To Be Purged = True.

You can also edit the information in the **Transaction Value Types**, **Transaction Item Accounting Configurations** and **Transaction Accounting Models** sections. Read more details about Transaction Types in the **Operational Ledger** User Guide.

Click the **Save and Close** button at the top right corner of the page.

History

The **History** tab displays the versions of the banking product, their workflow status and the user who modified the product.

Here you can track the product's life cycle and review older versions that are no longer active (for details, see "[Banking Products' Life Cycle](#)" on page 595).

Origination Elements

The **Origination Elements** tab holds the elements required in origination journey, such as product benefits, display conditions, features, destination types, or associated products.

You can fill in the following fields:

Field	Required	Data Type	Details
Product Image	No	File	Insert an image representative for the product.
Document	No	File	Insert the document representative for the product.
Benefits	No	Text area	Insert the advantages of owning the banking product. You can format the text in the text editor window.
Display Conditions	No	Text area	Insert the conditions for the applicant, e.g. age limit, annual turnover, education level, income, registration documents.

Click the **Save and Reload** button at the top right corner of the page.

Product Features Section

In the **Product Features** section, you can insert, delete or export features. To add a feature, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Feature	No	Text	Enter the name of the product feature.
Is Main Feature	No	Boolean	Select the checkbox if it is the major feature.
Display Name	No	Text	Enter the display name of the feature.

Click the **Save and Reload** button at the top right corner of the page.

Product Destination Types Section

The **Product Destination Types** section allows for insertion or removal of existing product destination types. Click **Insert existing** and select one of the existing destination types, or insert a new one. To create a new destination type, insert a name and specify if it is default. For this case, the following have been configured:

- Loan Collateral
- Loan disbursements
- Personal
- Repayments.

Associated Products Section

The **Associated Products** section allows for insertion or removal of existing products. It is especially useful when you wish to create a link between two products. You can insert or remove a product from the list or create a new one.

Associated Products

The screenshot shows the 'Associated Products' section. At the top, there are two buttons: '+ Insert existing' and 'X Remove existing'. Below these is a table with a 'Name' column. The first row in the table is 'Current Account USD'.

Click the **Save and Reload** button at the top right corner of the page.

GL Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

In the **Banking Product GL Accounts** section, you can set specific accounts to be used by the **Operational Ledger** system for transactions performed on contracts based on this banking product. Thus, you can overwrite the generic settings of the Operational Ledger, instructing it to use the accounts specified at banking product level.

To add specific accounts to be used by **Operational Ledger**, click **Insert** and fill in the following fields in the displayed **Add Banking Product GL Account** page:

Field	Required	Data Type	Description
Product	Yes	Option set	Select from the list the banking product. Automatically completed with the banking product you are currently editing.
Accounting System	Yes	Option set	Select from the list the desired accounting system. The list contains the records created in the FTOS_GL_AccountingSystem entity.
Accounting Scope	Yes	Option set	Select from the list the corresponding accounting scope. The list contains the records created in the FTOS_GL_AccountingScope entity.

Field	Required	Data Type	Description
Item	No	Option set	Select from the list the corresponding transaction item. The list contains the records created in the FTOS_GL_TransactionItemAccountingConfig entity.
GL Account	Yes	Option set	Select from the list the corresponding GL account. The list is filtered based on the previously selected accounting system. It contains the accounts defined in the FTOS_GL_AccountingChart entity that were added to the chosen accounting system record.

Click the **Save and Reload** button at the top right corner of the page.

Credit Cards

A credit card allows the customer to make purchases without bringing out any amount of cash. Instead, the customer borrows funds from the issuing bank, to make purchases.

To manage banking products:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, click **Product Factory**.

4. Click **Banking Products** to open the **Banking Products List** page.

Banking Products list

[+ Insert](#)
[@ Delete](#)
[📄 Export](#)
[🔍 Advanced find](#)

<input type="checkbox"/>	Code	Name	Class	SubClass	Category	SubCategory	Status	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	SLICE	SLICE Loan					Approved	1
	SL_BU	Slice BU					Approved	1
	TLTL2	TLTL2 - Term loan Eur					Approved	1
	M_BU	Mortgage test BU					Draft	1

On the **Banking Products List** page, you can:

- Add a new banking product by clicking the **Insert** button at the top right corner.
- Edit an existing banking product from the list by double-clicking it.
- Delete a banking product by selecting it and clicking the **Delete** button at the top right corner.

NOTE

For banking products in **Active** status, you can't change any of their related entities (such as features, discounts, product guarantee, interest or commission item, formula, test scenario, product covenant, product disbursement, product availability item filter). To change any of the product's related entities, create a new version of the banking product record.

Creating Credit Cards

To create a new banking product, click the **Insert** button on the top right side of the page. A new page opens, with a series of tabs that assist you in configuring the banking product:

1. **Main Info** - The first tab requires the basic elements for the creation of a product such as product type, name, code, hierarchy and features.
2. **Details** - This tab requires further elements that build on the first tab such as interest, payment type, top-ups, withdrawals and associated products.

3. [Availability](#) - This tab determines the monetary range and the time frame when the product is available for customers.
4. [Dimensions](#) - This tab displays the interests, commissions, insurances, discounts and questions valid for a product.
5. [Product Formula Engine](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Documents](#) - This tab contains all the attached documents available for a product.
7. [Lean Core Settings](#) - This tab holds Core Banking related settings, such as transactions that are done to and from a banking product, reconciliation account associated with the product, mandatory roles for contract approval, payment allocation settings, or closing contract settings are found in this tab.
8. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
9. [Origination Elements](#) - This tab holds the elements required in origination journeys, such as product benefits, display conditions, features, destination types, or associated products.
10. [GL Settings](#) - This tab contains the accounts to be used by Operational Ledger for transactions performed on contracts based on this banking product.

Main Info

The **Main Info** tab requires the basic elements for the creation of a product such as name, code, currency, validity, or product classification.

The following fields are available:

Field	Required	Data Type	Details
Main Information			

Field	Required	Data Type	Details
Banking Product Type	Yes	Option Set	<p>Choose one for the following:</p> <ul style="list-style-type: none"> • Bank Account • Card • Credit Card • Deposit • Leasing • Mortgage • Overdraft • Term Loan <div> NOTE Your product type selection greatly influences the next steps. It is important to choose the right type of product to build. </div>
Currency	Yes	Lookup	Choose the currency for this banking product.
Banking Product Code	Yes	Text	Enter the code of the product. It can have 10 characters and it is used in the contract. It uses a sequencer and the code of the product type.
External Code	No	Text	The code of the product imported from an external system, if applicable. It can have 10 characters and it is not used in the contract.

Field	Required	Data Type	Details
Start Date	Yes	Date	Select the date when the product becomes available.
End Date	Yes	Date	Select the last date from when the product is available. From that date forward, the product is no longer available.
Name	Yes	Text	Enter the name of the product.
Class	No	Option set	Select the class of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Subclass	No	Option set	Select the subclass of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Category	No	Option set	Select the category of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
SubCategory	No	Option set	Select the subcategory of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Description			
Description	No	Text area	Write any description or additional text here.

Click the **Save and Reload** button at the top right corner of the page.

Product Classification Section

In the **Product Classification** section, you can insert or remove existing product classification items. To add a product classification item, click **Insert Existing** and select an already existing item.

Product Classification

+ Insert existing ✕ Remove existing

<input type="checkbox"/>	Code	Name	Classification Type	Valid From	Valid To
	<input type="text" value="REG1"/>	<input type="text" value="Classification ..."/>	<input type="text" value="Regulatory"/>	<input type="text" value="01/01/2020"/>	<input type="text" value="31/12/2030"/>

You can also create a new product classification item by clicking **Insert**. On the newly displayed **Add Product Classification** page, fill in the following fields:

←
✓
Save and close
Save and reload
Save and new

Add Product Classification

Main Information

Name	Code	Valid From	Valid To	Classification Type	Is Default
<input type="text" value="Reg 2"/>	<input type="text" value="REG2"/>	<input type="text" value="18/04/2022"/>	<input type="text" value="30/04/2029"/>	<input type="text" value="Regula..."/>	<input type="checkbox"/>

Classified Banking Products

Field	Required	Data Type	Details
Classification Type	Yes	Option set	Choose the classification type of the item. Possible values: Regulatory, Restructuring.
Name	Yes	Text	Enter the name of the classification item.
Code	Yes	Text	Enter the unique code of the classification item.
Is Default	Yes	Boolean	Select the checkbox if this classification item is default.
Valid From	Yes	Invariant Date	Select the date from which the product classification item is valid.
Valid To	Yes	Invariant Date	Select the date until when the product classification item is valid.

The **Banking Products Classification Section** is displayed after saving the classification item record and allows you to insert existing banking products. The following information is displayed here:

Field	Details
Code	The code of the banking product added to the product classification item.
Name	The name of the banking product.
Class	The class of the banking product.
SubClass	The subclass of the banking product.
Category	The category of the banking product.
SubCategory	The subcategory of the banking product.
Status	The status of the banking product record.

Click the **Save and Reload** button at the top right corner of the page.

The screenshot shows the 'Main Information' tab of the Banking Product Factory. The form contains several input fields and dropdown menus. The 'Banking Product Type' is set to 'Credit Card', 'Currency' to 'EUR', and 'Banking Product Code' to 'CRCard'. The 'Start Date' is '19/01/2021' and the 'End Date' is '26/01/2034'. The 'Name' is 'CreditCard', 'Class' is 'Corporate', 'SubClass' is 'Loan Term', 'Category' is 'Loan Term Unsecured', and 'SubCategory' is empty. There is a 'Description' field and a 'Product Classification' section with buttons for 'Insert existing' and 'Remove existing'.

IMPORTANT! For credit cards, select Banking Product Type = CreditCards.

Details

The **Details** tab requires further elements such as interest, payment type, top-ups and withdrawals.

General Data Section

For the **General Data** section, the following fields are available:

Field	Required	Data Type	Details
Is Revolving	No	Boolean	Allows a business to borrow money as needed for funding working capital needs and continuing operations such as meeting payroll and payable.
Capital Percent (%)	No	Numeric	Enter the percent of capital that must be paid back on the selected periodicity type basis.

Click the **Save and Reload** button at the top right corner of the page.

Payment Schedule Types

In the **Payment Schedule Types** section, the following fields are available:

Field	Required	Data Type	Details
Period Type	No	Option set	<p>Select the period of availability for the product. Choose one:</p> <ul style="list-style-type: none"> • Days • Weeks • Months • Years • Once. <div> <p>NOTE</p> <p>The period type must be the same as the measurement unit of the Periodicity Type.</p> </div>

Field	Required	Data Type	Details
Periodicity Type	Yes	Option set	<p>Select the regularity of payments. Select one from the following:</p> <ul style="list-style-type: none"> • Once (the whole amount is paid at maturity) • Weekly • Monthly • Bimonthly • Trimestrial • 4 Weeks • Semestrial • Annual • 30Days. <div> <p>NOTE</p> <p>If the measurement unit of the selected Periodicity Type = Days, then Holiday Shift For Repayment Installments = False and it cannot be changed.</p> </div>

Field	Required	Data Type	Details
Grace Type	No	Option set	<p>Select whether the product grace should apply to the principal, the interest, or both. Select an option from the list:</p> <ul style="list-style-type: none"> • Both • Principal • Interest.
Product Grace	No	Option set	<p>Select an option from the list. This is the amount of time that the bank can offer to a customer at the beginning of the contract without repayments of principal or principal + interest (however, most probably the bank capitalizes the interest for that period of time).</p>

Click the **Save and Reload** button at the top right corner of the page.

Availability

The **Availability** tab determines the monetary range and the time frame when the product is available for customers.

The following fields are available:

Field	Required	Data Type	Details
Minimum Period	No	Whole Number	The minimum duration of the product mentioned in the contract.
Maximum Period	No	Whole Number	The maximum duration of the product mentioned in the contract.
Minimum Amount	No	Whole Number	The minimum amount of the product for which the bank opens a contract.
Maximum Amount	No	Whole Number	The maximum amount of the product for which the bank opens a contract.

Availability Rules Section

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see "[Product Filter](#)" on page 519.

Availability Rules

Product Availability Item Filters

+ Insert × Delete 📄 Export 🔄 Refresh

☐ Description

CA >< 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Product Covenants Section

In the **Product Covenants** section you can set certain conventions that applicants must abide by after getting the loan. This is usually applicable for corporate clients that must meet certain requirements in order to continue to receive disbursements.

Product Covenants

+ Insert × Delete 📄 Export 🔄 Refresh

<input type="checkbox"/>	Type	Covenant	Valid From	Valid to	Value
	<input style="width: 50px;" type="text"/>	<input style="width: 200px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>
	Affirmati...	Borrowers should perform tax obligations	19/04/2022	20/04/2030	
	Financial	Lender can monitor borrower's current r...	19/04/2022	20/04/2030	

Click the **Insert** button to add a covenant to the product. Each covenant can be attributed a value, an availability period, and a review frequency in months. Read more about covenants in the "[Covenant](#)" on page 567 page.

Click the **Save and Reload** button at the top right corner of the page.

Dimensions

The **Dimensions** tab displays the interests, commissions, insurances, discount and questions valid for a product.

The screenshot shows the 'Dimensions' tab in the Banking Product Factory. It contains four sub-sections: 'Interest & Commissions', 'Insurances', 'Discounts', and 'Questions'. Each sub-section has a search bar, a list of items, and action buttons (Insert, Delete, Export, Refresh). The 'Interest & Commissions' section shows 'MCA' as the selected item. The 'Insurances' section shows 'House Insurance'. The 'Discounts' section shows 'No data'. The 'Questions' section shows 'Question1' and 'Question2' as active items.

You can insert, delete or export interest, commissions, insurances, discounts or questions. To add a new one, click **Insert** and fill-in the fields detailed in the sections below.

NOTE

To configure the interest and commissions separately, navigate to **Main > Product Factory > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions Section

Click **Insert** to add an [interest](#) or a [commission](#). In the **Interest & Commission Item** page, fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Enter a code for this particular interest/ commission.
Item Name	Yes	Text	Enter a name.
Start Date	No	Date	The start date when the interest/ commission becomes effective.
End Date	No	Date	The end date for the interest/ commission.
Interest List	No	Option set	Select from which list the interest is a part of.


Field	Required	Data Type	Details
Commissions List	No	Option set	Select from which list the commission is a part of.
Minimum Interest Rate (%)	No	Numeric	Enter the percent applicable as a minimum interest rate at the contract level.
Is Negotiable	No	Boolean	Select the checkbox to specify that every interest, commission or margin field at the contract level is negotiable and can be edited.

Click the **Save and Reload** button at the top right corner of the page.

In the **Interest & Commission Item Filters** section, click **Insert** to insert an [item filter](#) and fill in the following fields:



Field	Required	Data Type	Details
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Value/ Date	No	Text/Date	Select the beginning value/ date for the filter.
Until Value/ Until Date	No	Text/Date	Select the maximum value/ date for the filter.
Description	No	Text area	This field is automatically filled in after clicking the Save and Reload button. The values/ dates inserted above are turned into an expression.
For Lookup attributes			
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Option Set	No	Option set	It is automatically filled in with the option set name created for the attribute.
Description	No	Text area	It is left blank. Add a description if needed.

Field	Required	Data Type	Details
Grid of Options	No	Grid	This field is automatically filled in after clicking the Save and Reload button. The values of the option set are displayed. Select the Boolean for the values you wish to include in the filter.


Save and close
Save and reload

Edit Interest & Commission Item Filter

Main Information

Filter AL_Amount  

Value 1 Until Value 50,000

Description

AL_Amount > 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Insurances Section

For any banking product, you can select a pre-existing insurance or create a new one. To add a new **insurance**, fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Insert a code for this particular insurance.
Item Name	Yes	Text	Insert a name.
Start Date	No	Date	It is the start date when the insurance becomes effective.
End Date	No	Date	It is the end date for the insurance.
Details	No	Text area	It is left blank. Add a description if needed.
Insurance List	No	Option set	Select from which list the insurance is a part of.

Click the **Save and Reload** button at the top right corner of the page.

In the **Insurance Item Filters** section, click **Insert** and fill in the following fields:

Field	Required	Data type	Description
Filter	Yes	Option set	The name inserted earlier.
Value	Yes	Text	The starting value for the attribute.
Until Value	Yes	Text	The ending value of the interval.
Description	No	Text area	Insert the proper description for the availability filter.

Click the **Save and Close** button at the top right corner of the page.

Discounts Section

For any banking product, you can add discounts of any nature. You can select a pre-existing discount or create a new one.

Click the **Insert** button to add a new **discount**. In the **Details** page, fill in the following fields:

Field	Required	Data Type	Details
Name	Yes	Text	Insert the appropriate name for the discount.
Discount	No	Option set	Choose one of the pre-configured types of discounts or create a new one. According to the selected type, new fields appear on the page requiring to be filled in.

Field	Required	Data Type	Details
Value discount	No	Numeric	Insert the value of the discount to be applied, e.g. 15.
Start date	Yes	Date	It is the start date when the discount becomes effective.
End date	Yes	Date	It is the end date for the discount.
Applied to dimension	No	Option set	Specifies for which product dimension this discount is applicable (interest, commission or insurance). This is autocompleted by the selected discount's dimension.
Commission type	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount . Specifies for which commission type this discount is applicable. This is autocompleted by the selected discount's default commission type.
Commission	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount . Specifies for which commission this discount is applicable. This is autocompleted by the selected discount's default commission.
Insurance class	No	Lookup	This field appears if the selected discount = Discount Life Insurance or Interest Discount . Specifies for which insurance class this discount is applicable (credit, home, life or other insurance class). This is autocompleted by the selected discount's insurance class.

Field	Required	Data Type	Details
Insurance	No	Lookup	This field appears if the selected discount = Discount Life Insurance. Specifies for which insurance this discount is applicable. This is autocompleted by the selected discount's insurance.
Interest type	No	Lookup	This field appears if the selected discount = Interest discount. Specifies for which interest type this discount is applicable.
Use Banking Formula	No	Boolean	If you select this checkbox, the discount is calculated using the Banking Formula engine.
Is optional discount?	No	Boolean	Selecting this checkbox results in the discount being applied only if the customer agrees to the discount.
Is percentage	No	Boolean	If you select this checkbox, the discount is calculated as a percentage from the contract's amount.
Destination entity	No	Option set	Select the entity where to register the discount. This field opens when the Is optional discount? checkbox is selected.
Destination entity attribute	No	Option set	Select the attribute where to register the discount. This field opens when the Is optional discount? checkbox is selected.

Click the **Save and Reload** button at the top right corner of the page.

In the **Product Discount Item Filter** section, click **Insert** and fill in the fields as specified in the **Product Filter page**. The fields displayed depend on the selected filter.

Click the **Save and Reload** button at the top right corner of the page.

Questions Section

Choose one or more questions to add to the banking product, or insert a new one.

To insert a new [question](#), click **Insert existing**, then click **Insert**. In the **Add Banking Product Question** page, fill in the following fields:

Field	Required	Data type	Description
Question	No	Text	Enter the appropriate name.
Answer Type	No	Option set	Select the type of answer the customer has to give: <ul style="list-style-type: none"> • text • numeric • option set.
Answer Entity	No	Option set	Select the entity where the answer is stored.
Answer Field	No	Option set	Select the attribute where the answer is stored.

Click the **Save and Reload** button at the top right corner of the page.

The **Banking Products List** shows where the question is used.

IMPORTANT!

The question has to be activated in order for it to be added to the banking product.

Click the **Save and Close** button at the top right corner of the page.

For example, this is how a question is displayed in a digital journey in the FintechOS Portal:

EDIT LOAN APPLICATION

Eligibility Questions

We ask for this information so that we can carry out the checks needed to consider you for a mortgage

DEPOSIT SOURCE:

RETIREMENT DATE:

RETIRED: ☐ Yes ☒ No

Finish

Product Formula Engine

The **Product Formula Engine** tab keeps formulas built with [Formula Engine](#) for the banking product. Such formulas can be used to determine the eligibility of a customer.

Product Formula Engine

Banking Product Formulas

Test Scenarios

Name	Formula Type	Formula
CA	CommissionFormula	commissionByAmount

Name	Test Formula Type
Duplicate-19-04-2022,11:07:57	CommissionFormula

Banking Product Formulas Section

In the **Banking Product Formulas** section, choose an already defined formula or click **Insert** to configure a new one, for example a formula for eligibility or scoring purposes. For information on how to build a formula, see [Define Formula Inputs](#).

In the **Add Banking Product Formula** page, fill in the following fields:

Edit Banking Product Formula

Main Information

Name: Banking Product: Formula Type: Formula:

Data Mapping:

Save and close **Save and reload**

Map Data

Field	Required	Data type	Description
Name	Yes	Text	Enter an appropriate name.
Banking Product	No	Option set	The name of the banking product is inserted automatically.
Formula Type	Yes	Lookup	Select the type of formula configured before, e.g. scoring /eligibility.
Formula	Yes	Lookup	Select the previously configured formula. IMPORTANT! The formula must be activated before attaching it to a product.
Data Mapping	No	Lookup	Select the previously configured data mapping.

After selecting the desired formula, click **Save and reload**, then click **Map Data**.

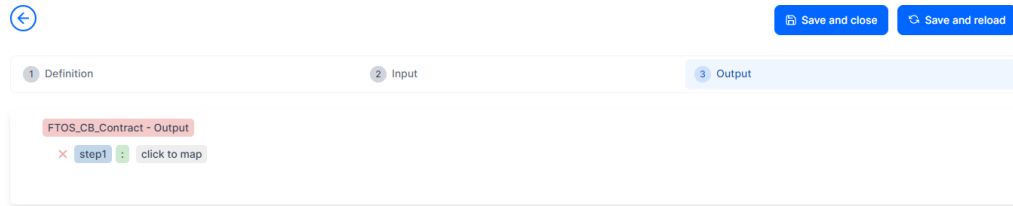
The screenshot shows the 'Formula Mapping' page with three tabs: 'Definition', 'Input', and 'Output'. The 'Input' tab is active. The page title is 'Formula parameter mapping'. There are four input fields with red error markers:

- Data Mapping Type:** Banking Product
- Master Entity:** FTOS_CB_Contract
- Operation Name:** test
- Name:** BPFormulaType_Test Formula_1647267821582_formula

At the top right, there are two buttons: 'Save and close' and 'Save and reload'.

In the **Formula Mapping** page, click **Input** and configure the input data for the formula.

Click **Output** and configure the output for the formula.



Click the **Save and Close** button at the top right corner of the page.

Such formulas can be used in digital journey steps, for example when the customer inserts their financial data.

Test Scenarios Section

A good practice is to test the formula before displaying it in a digital journey. You can do that in the **Test Scenarios** section.

Click **Insert** to open the **Add Test Scenario** page.

Insert a **Test Scenario Type** from the option set. The keys and the values are shown. Click the **Save and Reload** button at the top right corner of the page.

← Save and close Save and reload

Edit Test Scenario

Main Information

Test Formula Type CommissionFormula

Key Value

Amount 23.45

☐ Save Output Data Calculate

Test Scenario Outputs

+ Insert X Delete Export Refresh

Name

Click the **Calculate** button. The outputs are displayed in the **Test Scenario Outputs** section. These outputs can be saved by selecting the **Save Output Data** checkbox next to **Calculate**.

Documents

The **Documents** tab contains all the attached documents available for a product.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Product Formula Engine 6 Documents 7 Lean Core Settings 8 History 9 Origination Elements 10 GL Settings

Banking Product Documents

+ Insert X Delete Export Refresh

Report Banking Copies No Operation Code

Status overview of the queues 2 TC

Banking Product Agreements

+ Insert X Delete Export Refresh

Code

No data

Banking Product Documents Section

The previously associated documents are displayed in the **Banking Product Documents** section.

To attach a new document to the banking product, click **Insert** and fill in the following fields:

Field	Data Type	Description
Operation Code	Whole number	Enter a code for the document.

Field	Data Type	Description
Banking Copies No	Whole number	Insert the number of copies made.
Report	Lookup	Select a document from the list.
Document Type	Option set	Select a document type from the list.
Is Mandatory	Boolean	Select if the document is mandatory.
Includes Debtor	Boolean	Select if the document includes the debtor.
Includes Coborrower	Boolean	Select if the document includes the co-borrower.
Requires Signature	Boolean	Select if the document requires to be signed.
Is accord	Boolean	Select if the document represents the accord.

Click the **Save and Close** button at the top right corner of the page.

Banking Products Agreements Section

The agreements that a customer needs to go through are displayed in the **Banking Products Agreements** section.

To attach a new agreement to the banking product, click **Insert** and fill in the following fields:

Field	Required	Data Type	Description
Agreements	Yes	Option set	Select an agreement from the list.
Banking Product	Yes	Option set	It is automatically filled in.
Code	No	Whole number	Insert the corresponding code.
Is Mandatory	No	Boolean	Select if the agreement is mandatory for the product.

Edit Banking Product Agreement

Save and close Save and reload

Main Information

Agreement Code Banking Product Is Mandatory

Popescu Broker + AGR SLICE Loan + ✓

Click the **Save and Close** button at the top right corner of the page.

For more information on how to configure a contract or an agreement, see the [Digital Document Processor](#).

Lean Core Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

Transactions types that are performed to and from a banking product are displayed in the **Lean Core Settings** tab. The tab also holds information about the reconciliation account associated with the products, mandatory roles for contract approval, payment allocation settings, the treatment of returned goods for contracts based on this banking product (only for Term Loans and Mortgage banking products), and closing contract settings.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Product Formula Engine 6 Documents 7 Lean Core Settings 8 History 9 Origination Elements 10 GL Settings

Self Bank Account Associated With The Product

Reconciliation Account Negative balance treatment

Reconciliation EUR NoMessage

Mandatory Roles for Contract Approval

+ Insert X Delete Export Refresh

Role Search Limit

Q (All)

Beneficiary

Closing Contract Settings

Buffer Close Days Close Real Time Closing Is Flexible

15

Contract Is Closed Automatically

Payment Allocation Settings

Repayment Allocation Method Grace Days for Repayment Penalty for grace period

CostOrder

Allowed Transactions

+ Insert existing X Remove existing

Name

Q

Top Up Account

Transfer between my bank accounts

Withdraw

Self Bank Account Associated With The Product Section

For each banking product, you must select a reconciliation account, which is the bank account to be used for transactions.

Self Bank Account Associated With The Product

Reconciliation Account	Negative balance treatment
<div>Reconciliation EUR</div> <div>↓</div>	<div>NoMessage</div> <div>▼</div>

Next to the **Reconciliation Account** field, select a value from the list to be the current account from which or to which the money is wired from or to.

NOTE

This account must have the same currency as the product, because the translations are performed from and into this account.

Select a value for the **Negative Value Treatment** drop-down to specify how Core Banking treats situations when the funds of the reconciliation account associated with the banking product used in the contract would go below zero if a disbursement event would be approved. The possible values are:

- **Error** - there is an error message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can't be approved and the balance can't go below zero. Select this value if you want to block any transactions that would result in a negative balance of the reconciliation account associated to the banking product.
- **Warning** - there is a warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can be approved and the balance can go below zero.

- **NoMessage** - there is no error or warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account. The event can be approved and the balance can go below zero.

NOTE

Core Banking also has a system parameter, **ReconciliationAccountTreatment**. That is a system-wide setting, applicable to events for contracts based on all banking products without a specified **Negative balance treatment** value. Core Banking takes into consideration the settings used at the banking product level (the **Negative balance treatment** field's value). Thus, if the value is specified at the banking product level, then that value takes precedence over the system parameter's setting.

If you associate the same reconciliation account to more than one banking product, then the setting selected in banking product A is applied for contract events based on banking product A, while for the banking product B, Core Banking would apply the setting selected at the level of banking product B.

Payment Allocation Settings Section

This section holds the payment allocation settings. This is where you can decide which allocation method should be used to determine the order in which credit items are prioritized when repaying loans, credit accounts, and so on. You can also define the grace period settings.

Payment Allocation Settings

Repayment Allocation Method	Grace Days for Repayment	Penalty for grace period
<div>CostOrder</div> <div>↓ ✎</div>	<div>5</div>	<input type="checkbox"/>

Fill in the following fields:

Field	Required	Data Type	Details
Payment Allocation Method	No	Lookup	The payment allocation method represents the recovery order of amounts from payment notifications. Select a payment allocation method from the list.
Grace Days for Repayment	No	Whole number	Insert the number of days for which the bank expects a payment without calculating penalty.
Penalty for grace period	No	Boolean	If you select the checkbox, the penalty interest is applied on the loan contract without taking into consideration the grace period defined at contract level, being calculated for the difference between system date - due date, if the grace period passed and the customer didn't pay the due amounts. If you leave this checkbox unselected, the penalty interest is applied on the loan contract taking into consideration the grace period defined at contract level, being calculated for system date - due date + grace days for repayment.

Click the **Save and Reload** button at the top right corner of the page.

Mandatory Roles for Contract Approval Section

The **Mandatory Roles** section allows you to add the roles of the participants that are mandatory to exist at the contract level for contracts based on this banking product. In other words, when creating contracts based on banking products with Merchant role in this section, you must add a customer with the same Merchant role as contract participant, otherwise, the contract cannot be approved. When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role, in this case Merchant Exposure.

Mandatory Roles for Contract Approval

☐ Role Search Limit

☐ Beneficiary

In the **Mandatory Roles** section, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Lookup	The banking product for which you define mandatory roles. This is automatically completed with the current banking product.
Role	Yes	Option Set	Select the role of the participants that are mandatory to exist at the contract level for contracts based on this banking product.
Search Limit	Yes	Boolean	When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role. If you select a role not associated with a customer limit type in Core Banking, the Search Limit field becomes read-only and unselected.

⏪

Add Mandatory Role

Main Information

Banking Product

Role

Search Limit

☒

Click the **Save and Reload** button at the top right corner of the page.

Return Of Goods Section**IMPORTANT!**

This section is displayed only for **Term Loan** and **Mortgage** banking products.

The fields within this section allow you to define whether a contract based on the banking product can have **Returned Amount** or **Goods** transactions or not, and the specific conditions for these transactions. The **Returned Amount** or **Goods** transaction type can be used when a customer returns all or part of a loan or mortgage in a short while after contract creation, if the banking product was defined to allow such transactions. You can set up **Return Fee** type commissions, to return all or some of the claimed commission to the borrower.

To configure the treatment of returned goods for contracts based on this banking product, fill in the following fields:

Field	Required	Data Type	Details
Allow Return Of Goods	Yes	Boolean	Select this checkbox if the contracts based on this banking product accept Return of Goods transactions. Default value: False. If selected, the Accepted Days For Return and Return Message fields are displayed, otherwise, these fields are not visible.
Accepted Days For Return	Yes	Whole Number	Specify the number of days after contract creation during which the return of goods transaction can be created and approved.

Field	Required	Data Type	Details
Return Message	Yes	Option Set	<p>Select the behavior of messages generated by Core Banking for situations when the Returned Amount or Goods transaction's approval date + the number of accepted days for return \geq the current date. Possible values are taken from the Warning Error Treatment option set. According to the desired behavior, choose:</p> <ul style="list-style-type: none"> • Error, if the transaction should not be approved and an error message should be displayed; • Warning, if the transaction can be approved, but a warning message should be displayed; • NoMessage, if the transaction can be approved without any messages.

Return Of Goods

Allow Return Of Goods



Accepted Days For Return

Return Message

Click the **Save and Reload** button at the top right corner of the page. If Allow Return Of Goods = True, then the Returned Amount of Goods transaction is automatically added to the **Transaction Types** section.

Closing Contract Settings Section

IMPORTANT!

This section is displayed only for **Term Loan** and **Mortgage** banking products.

In the **Closing Contract Settings** section, you can configure the default closure settings for contracts based on this banking product.

Closing Contract Settings

Buffer Close Days

10

Close Real Time

☐

Closing Is Flexible

☒

Contract Is Closed Automatically

☒

Fill in the following fields:

Field	Required	Data Type	Details
Buffer Close Days	No	Whole Number	Enter the number of days used as buffer before automatically closing the contract when the contract reaches maturity and its balance reaches zero. If Buffer Close Days > 0, then Contract Is Closed Automatically = False.

Field	Required	Data Type	Details
Close Real Time	No	Boolean	If you select this checkbox, the contract based on this banking product is closed in real-time, when the contract reaches maturity and its balance reaches zero, without waiting for the end of day processes. If Close Real Time = True, then Buffer Close Days = 0 and Contract Is Closed Automatically = True.
Closing Is Flexible	No	Boolean	If you select this checkbox, the closure details of the contract based on this banking product can be modified at the contract creation.
Contract Is Closed Automatically	No	Boolean	If you select this checkbox, the contract based on this banking product is closed automatically at maturity, if the balance reaches zero. If Contract Is Closed Automatically = False, then Close Real Time = False.

Click the **Save and Close** button at the top right corner of the page.

Allowed Transactions Section

In the **Allowed Transactions** section, you can associate possible transaction types with the selected banking product. Click **Insert existing** and select the desired transaction types.

Double-click a selected transaction type to edit it.

Transaction Configuration

Save and close

Save and reload

Edit Transaction Type

Settings

Name

Disbursement

Transaction Code

DSB

Process Type

Disbursement

Edit Form

FTOS_CB_EventDisbursement

Transaction Operation Type

Disbursement

Is System Transaction

☐

Is Automatic Transaction

☐

Real Time Process

☐

Only One Draft

☒

Generate New Contract Version

☐

Commission Type

Return Commission Type

Accounting Configurations

Generates Accounting Entry

☒

OL Master Entity

FTOS_CB_ContractEvent

Purge Configurations

To Be Purged

☒

Purge Number of Days

30

Master Purge Entity

FTOS_CB_ContractEvent

Transaction Value Types

+ Insert

X Delete

Export

Refresh

☐ Transaction Type

Type

Value Type Name

Is Header

Value Type Attrib...

(All)

Transaction Item Accounting Configurations

+ Insert

X Delete

Export

Refresh

☐ Transaction...

Accountin...

Accountin...

Chart Acc...

Currency

Operation...

Take From...

In the **Edit Transaction Type** section, fill in the following fields:

Field	Required	Data Type	Details
Settings			
Name	Yes	Text	Name of the transaction type.
Transaction Code	Yes	Text	The code of the transaction type.
Is Automatic Transaction	Yes	Boolean	This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations.
Is System Transactions	No	Boolean	This checkbox marks the transaction as being neither a credit of the account, nor an allocation of funds, but a transaction that does not influence other transactions within the account. System transactions are meant to be used only for accounting.

Field	Required	Data Type	Details
Real Time Process		Boolean	This checkbox marks the transaction as to be processed in real-time. If the value is True, then the transaction is processed right away. If the value is False, then the transaction is inserted as a bank account transaction queue record.
Edit Form	No	Lookup	The form used to edit this transaction type. The lookup only shows forms defined on the Contract Event entity.
Only One Draft	No	Boolean	If you select this checkbox, there can be only one record of this transaction type in Draft status created at the contract level.
Generate New Contract Version	No	Boolean	This checkbox allows you to specify if a new contract version should be generated by this transaction type.
Commission Type	No	Lookup	The commission type applicable for this transaction type. Return fee commissions are filtered out and can't be selected.
Return Commission Type	No	Lookup	The return fee commission type applicable for this transaction type. Only return fee commissions can be selected.

Field	Required	Data Type	Details
Process Type	Yes	Option set	<p>This field associates the process type with the transaction operation type, which makes the connection with the transaction motor of bank accounts. Select one of the processes defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div>
Accounting Configurations			
Generates Accounting Entry	Yes	Boolean	This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity.
OL Master Entity	Yes	Lookup	The entity referenced by the accounting systems.
Purge Configurations			
To Be Purged	No	Boolean	This checkbox marks the transaction as purgeable. If selected, it allows you to purge or archive records in Draft status.
Purge Number of Days	Yes	Whole Number	The default number of calendar days that a record can be kept in Draft status before it is purged. For additional information, see the Core Banking System Parameters page. This field is displayed only when To Be Purged = True.

Field	Required	Data Type	Details
Master Purge Entity	Yes	Lookup	The master purge entity under which the draft records are. This field is displayed only when To Be Purged = True.

You can also edit the information in the **Transaction Value Types**, **Transaction Item Accounting Configurations** and **Transaction Accounting Models** sections. Read more details about Transaction Types in the **Operational Ledger** User Guide.

Click the **Save and Close** button at the top right corner of the page.

History

The **History** tab displays the versions of the banking product, their workflow status and the user who modified the product.

The screenshot shows the 'History' tab in the Banking Product Factory user interface. The interface includes a tabbed menu at the top with the following tabs: 1 Main Info, 2 Details, 3 Availability, 4 Dimensions, 5 Product Formula Engine, 6 Documents, 7 Loan Core Settings, 8 History (selected), 9 Origination Elements, and 10 GL Settings. Below the menu, there is a 'History' section with a search bar and filters. The filters include 'Label', 'Name', 'attributeVersionDate', 'attributeVersion', and 'Modified by user'. There are also 'Refresh' and 'Export' buttons. Below the filters, a table displays the history of the product. The table has columns for 'Draft', 'Duplicate', 'attributeVersionDate', 'attributeVersion', and 'Modified by user'. The first row shows 'Draft' as 'Draft', 'Duplicate' as 'Duplicate', 'attributeVersionDate' as '19/04/2022 10:29', 'attributeVersion' as '1', and 'Modified by user' as a blurred name.

Here you can track the product's life cycle and review older versions that are no longer active (for details, see ["Banking Products' Life Cycle" on page 595](#)).

Origination Elements

The **Origination Elements** tab holds the elements required in origination journey, such as product benefits, display conditions, features, destination types, or associated products.

The screenshot shows the 'Origination Elements' tab in the Banking Product Factory. It contains several sections for defining product details:

- Product Image:** A file upload area with a button 'Add file' and a placeholder 'or Drop file here'.
- Document:** A file upload area with a button 'Add file' and a placeholder 'or Drop file here'.
- Benefits:** A text editor with a menu (File, Edit, Insert, View, Format, Table, Tools) and a toolbar. The text area contains 'Quick Approval' and 'Low Interest Rates'.
- Display Conditions:** A text editor with a menu and toolbar, currently empty.
- Product Features:** A table with columns 'Feature', 'DisplayName', and 'Show Order'. It has buttons '+ Insert', 'X Delete', 'Export', and 'Refresh'. The table contains one row: 'NMNGTFEES', 'No Management ...', '1'.
- Product Destination Types:** A table with columns 'Display Name'. It has buttons '+ Insert existing' and 'X Remove existing'. The table contains one row: 'Personal'.
- Associated Products:** A table with columns 'Name'. It has buttons '+ Insert existing' and 'X Remove existing'. The table contains one row: 'Current Account USD'.

You can fill in the following fields:

Field	Required	Data Type	Details
Product Image	No	File	Insert an image representative for the product.
Document	No	File	Insert the document representative for the product.
Benefits	No	Text area	Insert the advantages of owning the banking product. You can format the text in the text editor window.
Display Conditions	No	Text area	Insert the conditions for the applicant, e.g. age limit, annual turnover, education level, income, registration documents.

Click the **Save and Reload** button at the top right corner of the page.

Product Features Section

In the **Product Features** section, you can insert, delete or export features. To add a feature, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Feature	No	Text	Enter the name of the product feature.
Is Main Feature	No	Boolean	Select the checkbox if it is the major feature.
Display Name	No	Text	Enter the display name of the feature.

Click the **Save and Reload** button at the top right corner of the page.

Product Destination Types Section

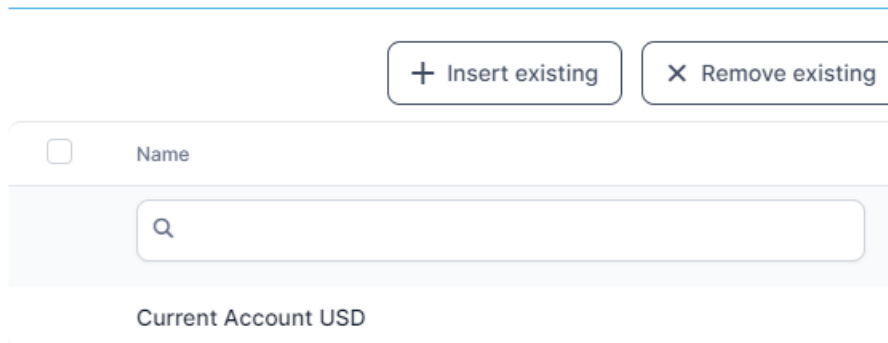
The **Product Destination Types** section allows for insertion or removal of existing product destination types. Click **Insert existing** and select one of the existing destination types, or insert a new one. To create a new destination type, insert a name and specify if it is default. For this case, the following have been configured:

- Loan Collateral
- Loan disbursements
- Personal
- Repayments.

Associated Products Section

The **Associated Products** section allows for insertion or removal of existing products. It is especially useful when you wish to create a link between two products. You can insert or remove a product from the list or create a new one.

Associated Products



Associated Products	
<div> <div>+ Insert existing</div> <div>X Remove existing</div> </div>	
<input type="checkbox"/>	Name
	<input type="text"/>
	Current Account USD

Click the **Save and Reload** button at the top right corner of the page.

GL Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

In the **Banking Product GL Accounts** section, you can set specific accounts to be used by the **Operational Ledger** system for transactions performed on contracts based on this banking product. Thus, you can overwrite the generic settings of the Operational Ledger, instructing it to use the accounts specified at banking product level.

To add specific accounts to be used by **Operational Ledger**, click **Insert** and fill in the following fields in the displayed **Add Banking Product GL Account** page:

Field	Required	Data Type	Description
Product	Yes	Option set	Select from the list the banking product. Automatically completed with the banking product you are currently editing.
Accounting System	Yes	Option set	Select from the list the desired accounting system. The list contains the records created in the FTOS_GL_AccountingSystem entity.
Accounting Scope	Yes	Option set	Select from the list the corresponding accounting scope. The list contains the records created in the FTOS_GL_AccountingScope entity.

Field	Required	Data Type	Description
Item	No	Option set	Select from the list the corresponding transaction item. The list contains the records created in the FTOS_GL_TransactionItemAccountingConfig entity.
GL Account	Yes	Option set	Select from the list the corresponding GL account. The list is filtered based on the previously selected accounting system. It contains the accounts defined in the FTOS_GL_AccountingChart entity that were added to the chosen accounting system record.

Click the **Save and Reload** button at the top right corner of the page.

Deposits

A deposit account is a bank account maintained by a financial institution in which a customer can deposit and withdraw money. Deposit accounts can be current accounts/ transactional accounts, savings accounts, deposit collateral accounts or term deposits accounts.

To manage banking products:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, click **Product Factory**.

4. Click **Banking Products** to open the **Banking Products List** page.

Banking Products list

[+ Insert](#)
[@ Delete](#)
[⬇ Export](#)
[Q Advanced find](#)

<input type="checkbox"/>	Code	Name	Class	SubClass	Category	SubCategory	Status	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	SLICE	SLICE Loan					Approved	1
	SL_BU	Slice BU					Approved	1
	TLTL2	TLTL2 - Term loan Eur					Approved	1
	M_BU	Mortgage test BU					Draft	1

On the **Banking Products List** page, you can:

- Add a new banking product by clicking the **Insert** button at the top right corner.
- Edit an existing banking product from the list by double-clicking it.
- Delete a banking product by selecting it and clicking the **Delete** button at the top right corner.

NOTE

For banking products in **Active** status, you can't change any of their related entities (such as features, discounts, product guarantee, interest or commission item, formula, test scenario, product covenant, product disbursement, product availability item filter). To change any of the product's related entities, create a new version of the banking product record.

Creating Deposits

To create a new banking product, click the **Insert** button on the top right side of the page. A new page opens, with a series of tabs that assist you in configuring the banking product:

1. **Main Info** - The first tab requires the basic elements for the creation of a product such as product type, name, code, hierarchy and features.
2. **Details** - This tab requires further elements that build on the first tab such as interest, payment type, top-ups, withdrawals and associated products.

3. [Availability](#) - This tab determines the monetary range and the time frame when the product is available for customers.
4. [Dimensions](#) - This tab displays the interests, commissions, insurances, discounts and questions valid for a product.
5. [Product Formula Engine](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Documents](#) - This tab contains all the attached documents available for a product.
7. [Lean Core Settings](#) - This tab holds Core Banking related settings, such as transactions that are done to and from a banking product, reconciliation account associated with the product, mandatory roles for contract approval, payment allocation settings, or closing contract settings are found in this tab.
8. [History](#) - The last tab displays the versions of the product, along with workflow status and the user who modified the product.
9. [Origination Elements](#) - This tab holds the elements required in origination journeys, such as product benefits, display conditions, features, destination types, or associated products.
10. [GL Settings](#) - This tab contains the accounts to be used by Operational Ledger for transactions performed on contracts based on this banking product.

Main Info

The **Main Info** tab requires the basic elements for the creation of a product such as name, code, currency, validity, or product classification.

The following fields are available:

Field	Required	Data Type	Details
Main Information			

Field	Required	Data Type	Details
Banking Product Type	Yes	Option Set	<p>Choose one for the following:</p> <ul style="list-style-type: none"> • Bank Account • Card • Credit Card • Deposit • Leasing • Mortgage • Overdraft • Term Loan <div> NOTE Your product type selection greatly influences the next steps. It is important to choose the right type of product to build. </div>
Currency	Yes	Lookup	Choose the currency for this banking product.
Banking Product Code	Yes	Text	Enter the code of the product. It can have 10 characters and it is used in the contract. It uses a sequencer and the code of the product type.
External Code	No	Text	The code of the product imported from an external system, if applicable. It can have 10 characters and it is not used in the contract.

Field	Required	Data Type	Details
Start Date	Yes	Date	Select the date when the product becomes available.
End Date	Yes	Date	Select the last date from when the product is available. From that date forward, the product is no longer available.
Name	Yes	Text	Enter the name of the product.
Class	No	Option set	Select the class of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Subclass	No	Option set	Select the subclass of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Category	No	Option set	Select the category of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
SubCategory	No	Option set	Select the subcategory of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Description			
Description	No	Text area	Write any description or additional text here.

Click the **Save and Reload** button at the top right corner of the page.

Product Classification Section

In the **Product Classification** section, you can insert or remove existing product classification items. To add a product classification item, click **Insert Existing** and select an already existing item.

Product Classification

+ Insert existing ✕ Remove existing

<input type="checkbox"/>	Code	Name	Classification Type	Valid From	Valid To
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	REG1	Classification ...	Regulatory	01/01/2020	31/12/2030

You can also create a new product classification item by clicking **Insert**. On the newly displayed **Add Product Classification** page, fill in the following fields:

←
✓
Save and close
Save and reload
Save and new

Add Product Classification

Main Information

Name	Code	Valid From	Valid To	Classification Type	Is Default
<input type="text" value="Reg 2"/>	<input type="text" value="REG2"/>	<input type="text" value="18/04/2022"/>	<input type="text" value="30/04/2029"/>	<input type="text" value="Regula..."/>	<input type="checkbox"/>

[Classified Banking Products](#)

Field	Required	Data Type	Details
Classification Type	Yes	Option set	Choose the classification type of the item. Possible values: Regulatory, Restructuring.
Name	Yes	Text	Enter the name of the classification item.
Code	Yes	Text	Enter the unique code of the classification item.
Is Default	Yes	Boolean	Select the checkbox if this classification item is default.
Valid From	Yes	Invariant Date	Select the date from which the product classification item is valid.
Valid To	Yes	Invariant Date	Select the date until when the product classification item is valid.

The **Banking Products Classification Section** is displayed after saving the classification item record and allows you to insert existing banking products. The following information is displayed here:

Field	Details
Code	The code of the banking product added to the product classification item.
Name	The name of the banking product.
Class	The class of the banking product.
SubClass	The subclass of the banking product.
Category	The category of the banking product.
SubCategory	The subcategory of the banking product.
Status	The status of the banking product record.

Click the **Save and Reload** button at the top right corner of the page.

IMPORTANT! For deposits, select Banking Product Type = **Deposit**.

Details

The **Details** tab requires further elements such as interest, payment type or product destination types.

General Data Section

For the **General Data** section, the following fields are available:

Field	Required	Data Type	Details
Auto Roll Over	No	Boolean	If the checkbox is selected, the contract is renewed at maturity date in exactly the same conditions. If it remains unchecked, the contract is automatically closed at maturity date. The field is used mostly for deposits or any product that can undergo the extension of contract.

Field	Required	Data Type	Details
Allow Top Ups	No	Boolean	<p>Select if the amount can be topped up with a sum of money.</p> <ul style="list-style-type: none"> If selected, the Top Up Account transaction is automatically loaded in the Associated Transactions section, which means that the customer is allowed to make top ups at the contract level. When a top up transaction is recorded in a contract, at the next maturity date the customer receives the interest for the initial amount up until the top up

Field	Required	Data Type	Details
			<p>date, plus the interest for the full amount (initial amount + top up amount) proportional from top up to payment date.</p> <ul style="list-style-type: none">• If not selected, the top up transaction is not allowed at the contract level.

Field	Required	Data Type	Details
Allow Withdrawals	No	Boolean	<p>Select if the customer can take out money for this product.</p> <ul style="list-style-type: none"> If selected, the Withdraw and Transfer between my bank accounts transactions are automatically loaded in the Associated Transactions section, which means that the customer is allowed to make withdrawals at the contract level. If not selected, the Withdraw and Transfer between my bank

Field	Required	Data Type	Details
			accounts transactions are not loaded, thus these transaction types are not allowed at the contract level. In order to have access to the funds before maturity date, the customer has to liquidate the deposit. In this case the interest is not paid.

Field	Required	Data Type	Details
Allow Negotiated IR	No	Boolean	<p>Select if the interest rate is negotiable for this product at the contract level.</p> <ul style="list-style-type: none"> • If selected, the Total Interest Rate field from the banking contract is automatically completed with the value configured on the banking product, but it is editable, so that the bank can change this value and insert the negotiated one. • If not selected, the Total Interest Rate field from the banking contract is

Field	Required	Data Type	Details
			automatically completed with the value configured on the banking product, but the value is read-only and cannot be changed.

Field	Required	Data Type	Details
Interest Is Capitalized	No	Boolean	<p>Only applicable if there is an interest rate.</p> <ul style="list-style-type: none"> • If the checkbox is not selected, the interest is paid in the account specified on the contract. • If selected, then the interest is added over the product amount, so that on the next payment date the customer receives the interest applied on both interest and product amount.

Field	Required	Data Type	Details
Interest Payment Type	No	Option Set	<p>Select the regularity of interest payments. Select one from the following:</p> <ul style="list-style-type: none"> Once (the whole interest amount is paid at maturity) Monthly Trimester Semestrial Annual.

Click the **Save and Reload** button at the top right corner of the page.

Availability

The **Availability** tab determines the monetary range and the time frame when the product is available for customers.

The following fields are available:

Field	Required	Data Type	Details
Minimum Period	No	Whole Number	The minimum duration of the product mentioned in the contract.

Field	Required	Data Type	Details
Maximum Period	No	Whole Number	The maximum duration of the product mentioned in the contract.
Minimum Amount	No	Whole Number	The minimum amount of the product for which the bank opens a contract.
Maximum Amount	No	Whole Number	The maximum amount of the product for which the bank opens a contract.

Availability Rules Section

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see ["Product Filter" on page 519](#).

Availability Rules

Product Availability Item Filters

+ Insert
× Delete
📄 Export
🔄 Refresh

☐ Description

CA >< 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Product Covenants Section

In the **Product Covenants** section you can set certain conventions that applicants must abide by after getting the loan. This is usually applicable for corporate clients that must meet certain requirements in order to continue to receive disbursements.

Product Covenants

<input type="checkbox"/>	Type	Covenant	Valid From	Valid to	Value
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Affirmati...	Borrowers should perform tax obligations	19/04/2022	20/04/2030	
	Financial	Lender can monitor borrower's current r...	19/04/2022	20/04/2030	

Click the **Insert** button to add a covenant to the product. Each covenant can be attributed a value, an availability period, and a review frequency in months. Read more about covenants in the ["Covenant" on page 567](#) page.

Click the **Save and Reload** button at the top right corner of the page.

Dimensions

The **Dimensions** tab displays the interests, commissions, insurances, discount and questions valid for a product.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Product Formula Engine 6 Documents 7 Loan Core Settings 8 History 9 Origination Elements 10 GL Settings

Interest & Commissions

☐ Item Name

 MCA

Discounts

Name	Discount	End Date	Start Date	Value Discount
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

No data

Insurances

☐ Item Name

 House Insurance

Questions

Question	Business Status
Question1	Active
Question2	Active

You can insert, delete or export interest, commissions, insurances, discounts or questions. To add a new one, click **Insert** and fill-in the fields detailed in the sections below.

NOTE

To configure the interest and commissions separately, navigate to **Main >**

Product Factory > **Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions Section

Click **Insert** to add an [interest](#) or a [commission](#). In the **Interest & Commission Item** page, fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Enter a code for this particular interest/ commission.
Item Name	Yes	Text	Enter a name.
Start Date	No	Date	The start date when the interest/ commission becomes effective.
End Date	No	Date	The end date for the interest/ commission.
Interest List	No	Option set	Select from which list the interest is a part of.
Commissions List	No	Option set	Select from which list the commission is a part of.
Minimum Interest Rate (%)	No	Numeric	Enter the percent applicable as a minimum interest rate at the contract level.
Is Negotiable	No	Boolean	Select the checkbox to specify that every interest, commission or margin field at the contract level is negotiable and can be edited.

Click the **Save and Reload** button at the top right corner of the page.

In the **Interest & Commission Item Filters** section, click **Insert** to insert an [item filter](#) and fill in the following fields:

Field	Required	Data Type	Details
Filter	Yes	Option set	Select a filter created earlier in the " Product Filter " on page 519 .

Field	Required	Data Type	Details
Value/ Date	No	Text/Date	Select the beginning value/ date for the filter.
Until Value/ Until Date	No	Text/Date	Select the maximum value/ date for the filter.
Description	No	Text area	This field is automatically filled in after clicking the Save and Reload button. The values/ dates inserted above are turned into an expression.
For Lookup attributes			
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Option Set	No	Option set	It is automatically filled in with the option set name created for the attribute.
Description	No	Text area	It is left blank. Add a description if needed.
Grid of Options	No	Grid	This field is automatically filled in after clicking the Save and Reload button. The values of the option set are displayed. Select the Boolean for the values you wish to include in the filter.

Save and close
Save and reload

Edit Interest & Commission Item Filter

Main Information

Filter AL_Amount

Value 1 Until Value 50,000

Description

AL_Amount > < 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Insurances Section

For any banking product, you can select a pre-existing insurance or create a new one. To add a new **insurance**, fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Insert a code for this particular insurance.
Item Name	Yes	Text	Insert a name.
Start Date	No	Date	It is the start date when the insurance becomes effective.
End Date	No	Date	It is the end date for the insurance.
Details	No	Text area	It is left blank. Add a description if needed.
Insurance List	No	Option set	Select from which list the insurance is a part of.

Click the **Save and Reload** button at the top right corner of the page.

In the **Insurance Item Filters** section, click **Insert** and fill in the following fields:

Field	Required	Data type	Description
Filter	Yes	Option set	The name inserted earlier.
Value	Yes	Text	The starting value for the attribute.
Until Value	Yes	Text	The ending value of the interval.
Description	No	Text area	Insert the proper description for the availability filter.

Click the **Save and Close** button at the top right corner of the page.

Discounts Section

For any banking product, you can add discounts of any nature. You can select a pre-existing discount or create a new one.

Click the **Insert** button to add a new [discount](#). In the **Details** page, fill in the following fields:

Field	Required	Data Type	Details
Name	Yes	Text	Insert the appropriate name for the discount.
Discount	No	Option set	Choose one of the pre-configured types of discounts or create a new one. According to the selected type, new fields appear on the page requiring to be filled in.
Value discount	No	Numeric	Insert the value of the discount to be applied, e.g. 15.
Start date	Yes	Date	It is the start date when the discount becomes effective.
End date	Yes	Date	It is the end date for the discount.
Applied to dimension	No	Option set	Specifies for which product dimension this discount is applicable (interest, commission or insurance). This is autocompleted by the selected discount's dimension.
Commission type	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount . Specifies for which commission type this discount is applicable. This is autocompleted by the selected discount's default commission type.

Field	Required	Data Type	Details
Commission	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount. Specifies for which commission this discount is applicable. This is autocompleted by the selected discount's default commission.
Insurance class	No	Lookup	This field appears if the selected discount = Discount Life Insurance or Interest Discount. Specifies for which insurance class this discount is applicable (credit, home, life or other insurance class). This is autocompleted by the selected discount's insurance class.
Insurance	No	Lookup	This field appears if the selected discount = Discount Life Insurance. Specifies for which insurance this discount is applicable. This is autocompleted by the selected discount's insurance.
Interest type	No	Lookup	This field appears if the selected discount = Interest discount. Specifies for which interest type this discount is applicable.
Use Banking Formula	No	Boolean	If you select this checkbox, the discount is calculated using the Banking Formula engine.
Is optional discount?	No	Boolean	Selecting this checkbox results in the discount being applied only if the customer agrees to the discount.

Field	Required	Data Type	Details
Is percentage	No	Boolean	If you select this checkbox, the discount is calculated as a percentage from the contract's amount.
Destination entity	No	Option set	Select the entity where to register the discount. This field opens when the Is optional discount? checkbox is selected.
Destination entity attribute	No	Option set	Select the attribute where to register the discount. This field opens when the Is optional discount? checkbox is selected.

Click the **Save and Reload** button at the top right corner of the page.

In the **Product Discount Item Filter** section, click **Insert** and fill in the fields as specified in the **Product Filter page**. The fields displayed depend on the selected filter.

Click the **Save and Reload** button at the top right corner of the page.

Questions Section

Choose one or more questions to add to the banking product, or insert a new one.

To insert a new [question](#), click **Insert existing**, then click **Insert**. In the **Add Banking Product Question page**, fill in the following fields:

Field	Required	Data type	Description
Question	No	Text	Enter the appropriate name.
Answer Type	No	Option set	Select the type of answer the customer has to give: <ul style="list-style-type: none"> • text • numeric • option set.
Answer Entity	No	Option set	Select the entity where the answer is stored.

Field	Required	Data type	Description
Answer Field	No	Option set	Select the attribute where the answer is stored.

Click the **Save and Reload** button at the top right corner of the page.

The **Banking Products List** shows where the question is used.

IMPORTANT!

The question has to be activated in order for it to be added to the banking product.

Click the **Save and Close** button at the top right corner of the page.

For example, this is how a question is displayed in a digital journey in the FintechOS Portal:

The screenshot shows a digital journey interface titled 'EDIT LOAN APPLICATION'. Below the title is a section 'Eligibility Questions' with the text 'We ask for this information so that we can carry out the checks needed to consider you for a mortgage'. The form contains three questions: 'DEPOSIT SOURCE' with a dropdown menu, 'RETIREMENT DATE' with a date picker, and 'RETIRED' with radio buttons for 'Yes' and 'No'. A 'Finish' button is located at the bottom right of the form.

Product Formula Engine

The **Product Formula Engine** tab keeps formulas built with **Formula Engine** for the banking product. Such formulas can be used to determine the eligibility of a customer.

The screenshot shows the 'Product Formula Engine' tab in the FintechOS Portal. It displays two tables: 'Banking Product Formulas' and 'Test Scenarios'. The 'Banking Product Formulas' table has columns for Name, Formula Type, and Formula. The 'Test Scenarios' table has columns for Name and Test Formula Type. Both tables have search bars and buttons for '+ Insert', 'X Delete', 'Export', and 'Refresh'.

Name	Formula Type	Formula
CA	CommissionFormula	commissionByAmount

Name	Test Formula Type
Duplicate-19/04/2022_11:07:57	CommissionFormula

Banking Product Formulas Section

In the **Banking Product Formulas** section, choose an already defined formula or click **Insert** to configure a new one, for example a formula for eligibility or scoring purposes. For information on how to build a formula, see [Define Formula Inputs](#).

In the **Add Banking Product Formula** page, fill in the following fields:

Field	Required	Data type	Description
Name	Yes	Text	Enter an appropriate name.
Banking Product	No	Option set	The name of the banking product is inserted automatically.
Formula Type	Yes	Lookup	Select the type of formula configured before, e.g. scoring /eligibility.
Formula	Yes	Lookup	Select the previously configured formula. <div> IMPORTANT! The formula must be activated before attaching it to a product. </div>
Data Mapping	No	Lookup	Select the previously configured data mapping.

After selecting the desired formula, click **Save and reload**, then click **Map Data**.

← Save and close Save and reload

1 Definition 2 Input 3 Output

Formula parameter mapping

Data Mapping Type Banking Product

Master Entity FTOS_CB_Contract

Operation Name test

Name BPFormulaType_Test Formula_1647267821582_formula

In the **Formula Mapping** page, click **Input** and configure the input data for the formula.

Click **Output** and configure the output for the formula.

← Save and close Save and reload

1 Definition 2 Input 3 Output

FTOS_CB_Contract - Output

× step1 click to map

Click the **Save and Close** button at the top right corner of the page.

Such formulas can be used in digital journey steps, for example when the customer inserts their financial data.

← CURRENT STATUS: INITIALIZED NEXT STATUS: CHOOSE STATUS- →

EDIT RETAIL APPLICANT DATA

Income & Outgoings

We use your expected income and outgoings to work out how much we'll be able to lend and to ensure that any mortgage we may offer you is affordable.

WHAT IS YOUR ANNUAL SALARY BEFORE TAX? €

ARE YOU MARRIED? [none]

EDUCATION LEVEL: [none]

PAYING MONTHLY FOR OTHER LOANS: €

NUMBER OF CHILDREN: 0

EMPLOYMENT STATUS: [none]

TOTAL CREDIT CARDS LIMITS: €

CHILDCARE AND EDUCATION COSTS: €

EMPLOYMENT MONTHS:

OTHER SPENDINGS: €

HOW MANY FINANCIAL DEPENDANTS: 0

YOUR RESIDENCE IS: [none]

LIFE, HEALTH INSURANCE AND PRIVATE PENSIONS: MAINTENANCE FOR DEPENDANTS: YOUR RENT IS:

Test Scenarios Section

A good practice is to test the formula before displaying it in a digital journey. You can do that in the **Test Scenarios** section.

Click **Insert** to open the **Add Test Scenario** page.

Insert a **Test Scenario Type** from the option set. The keys and the values are shown. Click the **Save and Reload** button at the top right corner of the page.

Click the **Calculate** button. The outputs are displayed in the **Test Scenario Outputs** section. These outputs can be saved by selecting the **Save Output Data** checkbox next to **Calculate**.

Documents

The **Documents** tab contains all the attached documents available for a product.

Banking Product Documents Section

The previously associated documents are displayed in the **Banking Product Documents** section.

To attach a new document to the banking product, click **Insert** and fill in the following fields:

Field	Data Type	Description
Operation Code	Whole number	Enter a code for the document.
Banking Copies No	Whole number	Insert the number of copies made.
Report	Lookup	Select a document from the list.
Document Type	Option set	Select a document type from the list.
Is Mandatory	Boolean	Select if the document is mandatory.
Includes Debtor	Boolean	Select if the document includes the debtor.
Includes Coborrower	Boolean	Select if the document includes the co-borrower.
Requires Signature	Boolean	Select if the document requires to be signed.
Is accord	Boolean	Select if the document represents the accord.

← Add Banking Product Document

Banking Product Document

Operation Code: Banking Copies No: Report: Document Type:

Is Mandatory: ☒ Yes ☐ No Includes Debtor: ☐ Yes ☒ No Includes Coborrower: ☐ Yes ☒ No Requires Signature: ☐ Yes ☒ No

Is Accord: ☐ Yes ☒ No

Save and close Save and reload Save and new

Click the **Save and Close** button at the top right corner of the page.

Banking Products Agreements Section

The agreements that a customer needs to go through are displayed in the **Banking Products Agreements** section.

To attach a new agreement to the banking product, click **Insert** and fill in the following fields:

Field	Required	Data Type	Description
Agreements	Yes	Option set	Select an agreement from the list.
Banking Product	Yes	Option set	It is automatically filled in.
Code	No	Whole number	Insert the corresponding code.
Is Mandatory	No	Boolean	Select if the agreement is mandatory for the product.

Click the **Save and Close** button at the top right corner of the page.

For more information on how to configure a contract or an agreement, see the [Digital Document Processor](#).

Lean Core Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

Transactions types that are performed to and from a banking product are displayed in the **Lean Core Settings** tab. The tab also holds information about the reconciliation account associated with the products, mandatory roles for contract approval, payment allocation settings, the treatment of returned goods for contracts based on this banking product (only for Term Loans and Mortgage banking products), and closing contract settings.

The screenshot shows the 'Lean Core Settings' tab in the Banking Product Factory. The interface is divided into several sections:

- Self Bank Account Associated With The Product:** Contains two dropdown menus. The first is 'Reconciliation Account' with 'Reconciliation EUR' selected. The second is 'Negative balance treatment' with 'NoMessage' selected.
- Payment Allocation Settings:** Contains a 'Repayment Allocation Method' dropdown with 'CostOrder' selected, a 'Grace Days for Repayment' input field, and a 'Penalty for grace period' checkbox.
- Mandatory Roles for Contract Approval:** Includes buttons for '+ Insert', 'X Delete', 'Export', and 'Refresh'. Below is a table with columns for 'Role' and 'Search Limit'. The 'Role' column has a search input and a dropdown with '(All)'. The 'Search Limit' column has a search input and a dropdown with '(All)'. Below the table is a 'Beneficiary' checkbox.
- Allowed Transactions:** Includes buttons for '+ Insert existing' and 'X Remove existing'. Below is a table with columns for 'Name' and 'Search Limit'. The 'Name' column has a search input and a dropdown with '(All)'. The 'Search Limit' column has a search input and a dropdown with '(All)'. Below the table are checkboxes for 'Top Up Account', 'Transfer between my bank accounts', and 'Withdraw'.
- Closing Contract Settings:** Includes a 'Buffer Close Days' input field with '15' entered, a 'Close Real Time' checkbox, and a 'Closing Is Flexible' checkbox which is checked. Below is a 'Contract Is Closed Automatically' checkbox which is checked.

Self Bank Account Associated With The Product Section

For each banking product, you must select a reconciliation account, which is the bank account to be used for transactions.

This close-up screenshot shows the 'Self Bank Account Associated With The Product' section. It features two dropdown menus. The first dropdown is labeled 'Reconciliation Account' and has 'Reconciliation EUR' selected. The second dropdown is labeled 'Negative balance treatment' and has 'NoMessage' selected. A red error message is visible next to the 'Reconciliation Account' dropdown.

Next to the **Reconciliation Account** field, select a value from the list to be the current account from which or to which the money is wired from or to.

NOTE

This account must have the same currency as the product, because the translations are performed from and into this account.

Select a value for the **Negative Value Treatment** drop-down to specify how Core Banking treats situations when the funds of the reconciliation account associated with the banking product used in the contract would go below zero if a disbursement event would be approved. The possible values are:

- **Error** - there is an error message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account"*

<account_name> has a balance lower than the amount to debit!'. The event can't be approved and the balance can't go below zero. Select this value if you want to block any transactions that would result in a negative balance of the reconciliation account associated to the banking product.

- **Warning** - there is a warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!'*. The event can be approved and the balance can go below zero.
- **NoMessage** - there is no error or warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account. The event can be approved and the balance can go below zero.

NOTE

Core Banking also has a system parameter, `ReconciliationAccountTreatment`. That is a system-wide setting, applicable to events for contracts based on all banking products without a specified `Negative balance treatment` value. Core Banking takes into consideration the settings used at the banking product level (the `Negative balance treatment` field's value). Thus, if the value is specified at the banking product level, then that value takes precedence over the system parameter's setting.

If you associate the same reconciliation account to more than one banking product, then the setting selected in banking product A is applied for contract events based on banking product A, while for the banking product B, Core Banking would apply the setting selected at the level of banking product B.

Payment Allocation Settings Section

This section holds the payment allocation settings. This is where you can decide which allocation method should be used to determine the order in which credit items are prioritized when repaying loans, credit accounts, and so on. You can also define the grace period settings.

Payment Allocation Settings

Repayment Allocation Method

CostOrder



Grace Days for Repayment

5

Penalty for grace period

☐

Fill in the following fields:

Field	Required	Data Type	Details
Payment Allocation Method	No	Lookup	The payment allocation method represents the recovery order of amounts from payment notifications. Select a payment allocation method from the list.
Grace Days for Repayment	No	Whole number	Insert the number of days for which the bank expects a payment without calculating penalty.
Penalty for grace period	No	Boolean	If you select the checkbox, the penalty interest is applied on the loan contract without taking into consideration the grace period defined at contract level, being calculated for the difference between system date - due date, if the grace period passed and the customer didn't pay the due amounts. If you leave this checkbox unselected, the penalty interest is applied on the loan contract taking into consideration the grace period defined at contract level, being calculated for system date - due date + grace days for repayment.

Click the **Save and Reload** button at the top right corner of the page.

Mandatory Roles for Contract Approval Section

The **Mandatory Roles** section allows you to add the roles of the participants that are mandatory to exist at the contract level for contracts based on this banking product. In other words, when creating contracts based on banking products with Merchant role in this section, you must add a customer with the same Merchant role as contract participant, otherwise, the contract cannot be approved. When **Search Limit** is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role, in this case **Merchant Exposure**.

Mandatory Roles for Contract Approval

The interface for 'Mandatory Roles for Contract Approval' includes a header with four buttons: '+ Insert', 'X Delete', 'Export', and 'Refresh'. Below the header is a form area. On the left, there is a checkbox labeled 'Role'. To its right is a 'Search Limit' dropdown menu, which is currently set to '(All)'. At the bottom of the form, there is a checkbox labeled 'Beneficiary'.

In the **Mandatory Roles** section, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Lookup	The banking product for which you define mandatory roles. This is automatically completed with the current banking product.
Role	Yes	Option Set	Select the role of the participants that are mandatory to exist at the contract level for contracts based on this banking product.

Field	Required	Data Type	Details
Search Limit	Yes	Boolean	<p>When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role.</p> <p>If you select a role not associated with a customer limit type in Core Banking, the Search Limit field becomes read-only and unselected.</p>

← Add Mandatory Role

Save and close Save and reload Save and new

Main Information

Banking Product Role Search Limit

Duplicate Merchant ☒

Click the **Save and Reload** button at the top right corner of the page.

Return Of Goods Section

IMPORTANT!

This section is displayed only for **Term Loan** and **Mortgage** banking products.

The fields within this section allow you to define whether a contract based on the banking product can have Returned Amount or Goods transactions or not, and the specific conditions for these transactions. The Returned Amount or Goods transaction type can be used when a customer returns all or part of a loan or mortgage in a short while after contract creation, if the banking product was defined to allow such transactions. You can set up Return Fee type commissions, to return all or some of the claimed commission to the borrower.

To configure the treatment of returned goods for contracts based on this banking product, fill in the following fields:

Field	Required	Data Type	Details
Allow Return Of Goods	Yes	Boolean	Select this checkbox if the contracts based on this banking product accept Return of Goods transactions. Default value: False. If selected, the Accepted Days For Return and Return Message fields are displayed, otherwise, these fields are not visible.
Accepted Days For Return	Yes	Whole Number	Specify the number of days after contract creation during which the return of goods transaction can be created and approved.
Return Message	Yes	Option Set	<p>Select the behavior of messages generated by Core Banking for situations when the Returned Amount or Goods transaction's approval date + the number of accepted days for return \geq the current date. Possible values are taken from the Warning Error Treatment option set. According to the desired behavior, choose:</p> <ul style="list-style-type: none"> • Error, if the transaction should not be approved and an error message should be displayed; • Warning, if the transaction can be approved, but a warning message should be displayed; • NoMessage, if the transaction can be approved without any messages.

Return Of Goods

Allow Return Of Goods



Accepted Days For Return



Return Message



Click the **Save and Reload** button at the top right corner of the page. If Allow Return Of Goods = True, then the Returned Amount of Goods transaction is automatically added to the **Transaction Types** section.

Closing Contract Settings Section**IMPORTANT!**

This section is displayed only for **Term Loan** and **Mortgage** banking products.

In the **Closing Contract Settings** section, you can configure the default closure settings for contracts based on this banking product.

Closing Contract Settings

Buffer Close Days

Close Real Time



Closing Is Flexible



Contract Is Closed Automatically



Fill in the following fields:

Field	Required	Data Type	Details
Buffer Close Days	No	Whole Number	Enter the number of days used as buffer before automatically closing the contract when the contract reaches maturity and its balance reaches zero. If Buffer Close Days > 0, then Contract Is Closed Automatically = False.

Field	Required	Data Type	Details
Close Real Time	No	Boolean	If you select this checkbox, the contract based on this banking product is closed in real-time, when the contract reaches maturity and its balance reaches zero, without waiting for the end of day processes. If Close Real Time = True, then Buffer Close Days = 0 and Contract Is Closed Automatically = True.
Closing Is Flexible	No	Boolean	If you select this checkbox, the closure details of the contract based on this banking product can be modified at the contract creation.
Contract Is Closed Automatically	No	Boolean	If you select this checkbox, the contract based on this banking product is closed automatically at maturity, if the balance reaches zero. If Contract Is Closed Automatically = False, then Close Real Time = False.

Click the **Save and Close** button at the top right corner of the page.

Allowed Transactions Section

In the **Allowed Transactions** section, you can associate possible transaction types with the selected banking product. Click **Insert existing** and select the desired transaction types.

Double-click a selected transaction type to edit it.

Transaction Configuration

Save and close

Save and reload

Edit Transaction Type

Settings

Name

Disbursement

Transaction Code

DSB

Process Type

Disbursement

Edit Form

FTOS_CB_EventDisbursement

Transaction Operation Type

Disbursement

Is System Transaction

☐

Is Automatic Transaction

☐

Real Time Process

☐

Only One Draft

☒

Generate New Contract Version

☐

Commission Type

Return Commission Type

Accounting Configurations

Generates Accounting Entry

☒

OL Master Entity

FTOS_CB_ContractEvent

Purge Configurations

To Be Purged

☒

Purge Number of Days

30

Master Purge Entity

FTOS_CB_ContractEvent

Transaction Value Types

+ Insert

X Delete

Export

Refresh

☐ Transaction Type

Type

Value Type Name

Is Header

Value Type Attrib...

(All)

Transaction Item Accounting Configurations

+ Insert

X Delete

Export

Refresh

☐ Transaction...

Accountin...

Accountin...

Chart Acc...

Currency

Operation...

Take From...

In the **Edit Transaction Type** section, fill in the following fields:

Field	Required	Data Type	Details
Settings			
Name	Yes	Text	Name of the transaction type.
Transaction Code	Yes	Text	The code of the transaction type.
Is Automatic Transaction	Yes	Boolean	This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations.
Is System Transactions	No	Boolean	This checkbox marks the transaction as being neither a credit of the account, nor an allocation of funds, but a transaction that does not influence other transactions within the account. System transactions are meant to be used only for accounting.

Field	Required	Data Type	Details
Real Time Process		Boolean	This checkbox marks the transaction as to be processed in real-time. If the value is True, then the transaction is processed right away. If the value is False, then the transaction is inserted as a bank account transaction queue record.
Edit Form	No	Lookup	The form used to edit this transaction type. The lookup only shows forms defined on the Contract Event entity.
Only One Draft	No	Boolean	If you select this checkbox, there can be only one record of this transaction type in Draft status created at the contract level.
Generate New Contract Version	No	Boolean	This checkbox allows you to specify if a new contract version should be generated by this transaction type.
Commission Type	No	Lookup	The commission type applicable for this transaction type. Return fee commissions are filtered out and can't be selected.
Return Commission Type	No	Lookup	The return fee commission type applicable for this transaction type. Only return fee commissions can be selected.

Field	Required	Data Type	Details
Process Type	Yes	Option set	<p>This field associates the process type with the transaction operation type, which makes the connection with the transaction motor of bank accounts. Select one of the processes defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div>
Accounting Configurations			
Generates Accounting Entry	Yes	Boolean	This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity.
OL Master Entity	Yes	Lookup	The entity referenced by the accounting systems.
Purge Configurations			
To Be Purged	No	Boolean	This checkbox marks the transaction as purgeable. If selected, it allows you to purge or archive records in Draft status.
Purge Number of Days	Yes	Whole Number	The default number of calendar days that a record can be kept in Draft status before it is purged. For additional information, see the Core Banking System Parameters page. This field is displayed only when To Be Purged = True.

Field	Required	Data Type	Details
Master Purge Entity	Yes	Lookup	The master purge entity under which the draft records are. This field is displayed only when To Be Purged = True.

You can also edit the information in the **Transaction Value Types**, **Transaction Item Accounting Configurations** and **Transaction Accounting Models** sections. Read more details about Transaction Types in the **Operational Ledger** User Guide.

Click the **Save and Close** button at the top right corner of the page.

The following transaction types are typically used for deposits:

- **Top Up Account** - If added at banking product level, the customer is allowed to make top ups at the contract level. When a top up transaction is recorded in a contract, at the next maturity date the customer receives the interest for the initial amount up until the top up date, plus the interest for the full amount (initial amount + top up amount) proportional from top up to payment date.
This transaction type is automatically added in the **Associated Transactions** tab if **Allow Top Ups** was selected in the **Details** tab.
- **Withdraw** - If added at banking product level, the customer is allowed to make withdrawals at the contract level.
This transaction type is automatically added in the **Associated Transactions** tab if **Allow Withdrawals** was selected in the **Details** tab.
If this transaction type is not inserted for deposits, in order to have access to the funds before maturity date, the customer has to liquidate the deposit. In this case the interest is not paid.
- **Transfer between my bank accounts** - If added at banking product level, the customer is allowed to move funds between their accounts at the contract level.
This transaction type is automatically added in the **Associated Transactions** tab if **Allow Withdrawals** was selected in the **Details** tab.

- **Deposit Liquidation** - If added at banking product level, the deposit account can be closed and the entire amount is transferred in the current account. If the liquidation occurs at the maturity date, the interest is also paid. If the liquidation occurs in any other day before the maturity date, the customer receives the sight interest (if applicable).
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Early Termination Deposit** - If added at banking product level, the deposit can be terminated before its maturity date.
This transaction type is not added automatically. Although not mandatory to be inserted in the **Associated Transactions** tab, please do so in order to have a better traceability of the events that can occur.
- **Payment Deposit**- These represent automatic transactions that are generated by the system. If added at banking product level, the system can perform transfers to and from the deposit within a contract.
This transaction type is not added automatically. Although not mandatory to be inserted in the **Associated Transactions** tab, please do so in order to have a better traceability of the events that can occur.

History

The **History** tab displays the versions of the banking product, their workflow status and the user who modified the product.

Label	Name	attributeVersionDate	attributeVersion	Modified by user
Draft	Duplicate	19/04/2022 10:29	1	[User Icon]

Here you can track the product's life cycle and review older versions that are no longer active (for details, see ["Banking Products' Life Cycle"](#) on page 595).

Origination Elements

The **Origination Elements** tab holds the elements required in origination journey, such as product benefits, display conditions, features, destination types, or associated products.

The screenshot displays the 'Origination Elements' tab. It includes sections for uploading a 'Product Image' and 'Document', and text editors for 'Benefits' and 'Display Conditions'. At the bottom, there are three tables for managing 'Product Features', 'Product Destination Types', and 'Associated Products', each with buttons for '+ Insert', 'X Delete', 'Export', and 'Refresh'.

You can fill in the following fields:

Field	Required	Data Type	Details
Product Image	No	File	Insert an image representative for the product.
Document	No	File	Insert the document representative for the product.
Benefits	No	Text area	Insert the advantages of owning the banking product. You can format the text in the text editor window.
Display Conditions	No	Text area	Insert the conditions for the applicant, e.g. age limit, annual turnover, education level, income, registration documents.

Click the **Save and Reload** button at the top right corner of the page.

Product Features Section

In the **Product Features** section, you can insert, delete or export features. To add a feature, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Feature	No	Text	Enter the name of the product feature.

Field	Required	Data Type	Details
Is Main Feature	No	Boolean	Select the checkbox if it is the major feature.
Display Name	No	Text	Enter the display name of the feature.

Click the **Save and Reload** button at the top right corner of the page.

Product Destination Types Section

The **Product Destination Types** section allows for insertion or removal of existing product destination types. Click **Insert existing** and select one of the existing destination types, or insert a new one. To create a new destination type, insert a name and specify if it is default. For this case, the following have been configured:

- Loan Collateral
- Loan disbursements
- Personal
- Repayments.

Associated Products Section

The **Associated Products** section allows for insertion or removal of existing products. It is especially useful when you wish to create a link between two products. You can insert or remove a product from the list or create a new one.

Associated Products

+

Insert existing

×

Remove existing

☐

Name

Current Account USD

Click the **Save and Reload** button at the top right corner of the page.

GL Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

In the **Banking Product GL Accounts** section, you can set specific accounts to be used by the **Operational Ledger** system for transactions performed on contracts based on this banking product. Thus, you can overwrite the generic settings of the Operational Ledger, instructing it to use the accounts specified at banking product level.

1 Main Info2 Details3 Availability4 Dimensions5 Product Formula Engine6 Documents7 Loan Core Settings8 History9 Origination Elements10 GL Settings

Banking Product GL Accounts

+ InsertX DeleteExportRefresh

ProductAccounting SystemAccounting ScopeItemGL Account

Q

Q

Q

Q

Q

Duplicate0001FixDepositLoan Admin Fee20110 Commercial loans

To add specific accounts to be used by **Operational Ledger**, click **Insert** and fill in the following fields in the displayed **Add Banking Product GL Account** page:

Save and closeSave and reloadSave and new

Add Banking Product GL Account

Main Information

ProductAccounting SystemAccounting ScopeItemGL Account

Duplicate0001FixDepositLoan Admin Fee20110 Commercial loans

Field	Required	Data Type	Description
Product	Yes	Option set	Select from the list the banking product. Automatically completed with the banking product you are currently editing.

MANAGING BANKING PRODUCTS

263

Field	Required	Data Type	Description
Accounting System	Yes	Option set	Select from the list the desired accounting system. The list contains the records created in the FTOS_GL_AccountingSystem entity.
Accounting Scope	Yes	Option set	Select from the list the corresponding accounting scope. The list contains the records created in the FTOS_GL_AccountingScope entity.
Item	No	Option set	Select from the list the corresponding transaction item. The list contains the records created in the FTOS_GL_TransactionItemAccountingConfig entity.
GL Account	Yes	Option set	Select from the list the corresponding GL account. The list is filtered based on the previously selected accounting system. It contains the accounts defined in the FTOS_GL_AccountingChart entity that were added to the chosen accounting system record.

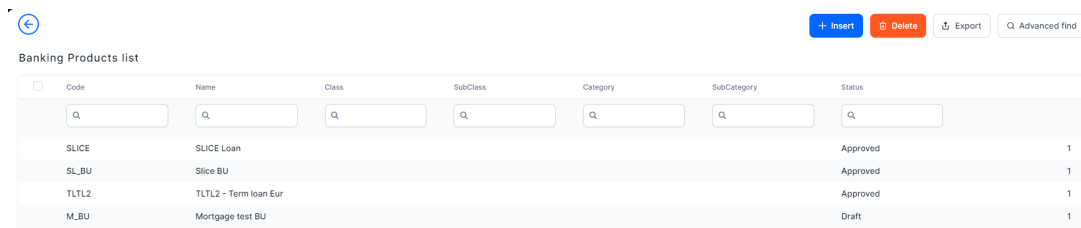
Click the **Save and Reload** button at the top right corner of the page.

Leasings

A lease is a written agreement specifying the conditions under which a lessor accepts to let out a property to be used by a lessee. The agreement promises the lessee use of the property for an agreed length of time while the owner is assured consistent payment over the agreed period.

To manage banking products:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, click **Product Factory**.
4. Click **Banking Products** to open the **Banking Products List** page.



<input type="checkbox"/>	Code	Name	Class	SubClass	Category	SubCategory	Status	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	SLICE	SLICE Loan					Approved	1
	SL_BU	Slice BU					Approved	1
	TLTL2	TLTL2 - Term loan Eur					Approved	1
	M_BU	Mortgage test BU					Draft	1

On the **Banking Products List** page, you can:

- Add a new banking product by clicking the **Insert** button at the top right corner.
- Edit an existing banking product from the list by double-clicking it.
- Delete a banking product by selecting it and clicking the **Delete** button at the top right corner.

NOTE

For banking products in **Active** status, you can't change any of their related entities (such as features, discounts, product guarantee, interest or commission item, formula, test scenario, product covenant, product disbursement, product availability item filter). To change any of the product's related entities, create a new version of the banking product record.

Creating Leasings

To create a new banking product, click the **Insert** button on the top right side of the page. A new page opens, with a series of tabs that assist you in configuring the banking product:

1. **Main Info** - The first tab requires the basic elements for the creation of a product such as product type, name, code, hierarchy and features.
2. **Details** - This tab requires further elements that build on the first tab such as interest, payment type, top-ups, withdrawals and associated products.
3. **Availability** - This tab determines the monetary range and the time frame when the product is available for customers.
4. **Dimensions** - This tab displays the interests, commissions, insurances, discounts and questions valid for a product.
5. **Product Formula Engine** - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. **Documents** - This tab contains all the attached documents available for a product.
7. **Lean Core Settings** - This tab holds Core Banking related settings, such as transactions that are done to and from a banking product, reconciliation account associated with the product, mandatory roles for contract approval, payment allocation settings, or closing contract settings are found in this tab.
8. **History** - This tab displays the versions of the product, along with workflow status and the user who modified the product.
9. **Origination Elements** - This tab holds the elements required in origination journeys, such as product benefits, display conditions, features, destination types, or associated products.
10. **GL Settings** - This tab contains the accounts to be used by Operational Ledger for transactions performed on contracts based on this banking product.

Main Info

The **Main Info** tab requires the basic elements for the creation of a product such as name, code, currency, validity, or product classification.

The following fields are available:

Field	Required	Data Type	Details
Main Information			
Banking Product Type	Yes	Option Set	<p>Choose one for the following:</p> <ul style="list-style-type: none"> • Bank Account • Card • Credit Card • Deposit • Leasing • Mortgage • Overdraft • Term Loan <div> NOTE Your product type selection greatly influences the next steps. It is important to choose the right type of product to build. </div>
Currency	Yes	Lookup	Choose the currency for this banking product.
Banking Product Code	Yes	Text	Enter the code of the product. It can have 10 characters and it is used in the contract. It uses a sequencer and the code of the product type.
External Code	No	Text	The code of the product imported from an external system, if applicable. It can have 10 characters and it is not used in the contract.

Field	Required	Data Type	Details
Start Date	Yes	Date	Select the date when the product becomes available.
End Date	Yes	Date	Select the last date from when the product is available. From that date forward, the product is no longer available.
Name	Yes	Text	Enter the name of the product.
Class	No	Option set	Select the class of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Subclass	No	Option set	Select the subclass of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Category	No	Option set	Select the category of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
SubCategory	No	Option set	Select the subcategory of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Description			
Description	No	Text area	Write any description or additional text here.

Click the **Save and Reload** button at the top right corner of the page.

Product Classification Section

In the **Product Classification** section, you can insert or remove existing product classification items. To add a product classification item, click **Insert Existing** and select an already existing item.

Product Classification

+ Insert existing ✕ Remove existing

<input type="checkbox"/>	Code	Name	Classification Type	Valid From	Valid To
	<input type="text" value="REG1"/>	<input type="text" value="Classification ..."/>	<input type="text" value="Regulatory"/>	<input type="text" value="01/01/2020"/>	<input type="text" value="31/12/2030"/>

You can also create a new product classification item by clicking **Insert**. On the newly displayed **Add Product Classification** page, fill in the following fields:

←
✓
Save and close
Save and reload
Save and new

Add Product Classification

Main Information

Name	Code	Valid From	Valid To	Classification Type	Is Default
<input type="text" value="Reg 2"/>	<input type="text" value="REG2"/>	<input type="text" value="18/04/2022"/>	<input type="text" value="30/04/2029"/>	<input type="text" value="Regula..."/>	<input type="checkbox"/>

Classified Banking Products

Field	Required	Data Type	Details
Classification Type	Yes	Option set	Choose the classification type of the item. Possible values: Regulatory, Restructuring.
Name	Yes	Text	Enter the name of the classification item.
Code	Yes	Text	Enter the unique code of the classification item.
Is Default	Yes	Boolean	Select the checkbox if this classification item is default.
Valid From	Yes	Invariant Date	Select the date from which the product classification item is valid.
Valid To	Yes	Invariant Date	Select the date until when the product classification item is valid.

The **Banking Products Classification Section** is displayed after saving the classification item record and allows you to insert existing banking products. The following information is displayed here:

Field	Details
Code	The code of the banking product added to the product classification item.
Name	The name of the banking product.
Class	The class of the banking product.
SubClass	The subclass of the banking product.
Category	The category of the banking product.
SubCategory	The subcategory of the banking product.
Status	The status of the banking product record.

Click the **Save and Reload** button at the top right corner of the page.

IMPORTANT! For leasings, select Banking Product Type = **Leasing**.

The screenshot shows the 'Main Information' tab of the Banking Product Factory interface. The form is divided into several sections:

- Top Navigation:** 1 Main Info, 2 Details, 3 Availability, 4 Dimensions, 5 Product Formula Engine, 6 Documents, 7 Loan Core Settings, 8 History, 9 Origination Elements, 10 GL Settings.
- Main Information Section:**
 - Banking Product Type:** Leasing (dropdown)
 - Currency:** EUR (dropdown)
 - Banking Product Code:** Leasing (dropdown)
 - External Code:** lease (text input)
 - Start Date:** 04/07/2021 (calendar icon)
 - End Date:** 29/07/2022 (calendar icon)
 - Name:** LeasingM (text input)
 - Class:** Corporate (dropdown)
 - SubClass:** (empty dropdown)
 - Category:** (empty dropdown)
 - SubCategory:** (empty dropdown)
 - Description:** (large text area)
 - Product Classification:**
 - Buttons: + Insert existing, X Remove existing
 - Table with columns: Code, Name, Classification Type, Valid From, Valid To. Each column has a search icon.

Details

The **Details** tab requires further elements such as interest, payment type, top-ups and withdrawals.

1 Main Info

2 Details

3 Availability

4 Dimensions

5 Product Formula Engine

6 Documents

7 Loan Core Settings

8 History

9 Origination Elements

10 GL Settings

General Data

Is Revolving☐

Allow Refinancing☐

Allow Restructuring☒

Allow CoDebtor☐

Max No. Of CoDebtors

Disburse Settings

Autodisbursement☒

Max No Disbursements

Activ Tranche On Doc Submission☒

Product Tranches

+ Insert

X Delete

Export

Refresh

Name	Tranche Percent	Start Month From A...	Interest Percent
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

No data

Product Guarantees

Is Guaranteed☒

Collateral Cover Percent

Allow Collateral Partial Release☒

Allowed Guarantee Types

+ Insert

X Delete

Export

Refresh

Guarantee Type	Max Accepted Covering Percent
Cash	20.00

Payment Schedule Types

Period Type

Periodicity Type

Grace Type

Product Grace

Schedule Templates

+ Insert existing

X Remove existing

Name
<input type="text"/>

No data

Holiday Settings

Holiday Shift For Repayment Installments☒

Defer Due Date☒

Holiday Shift Method

Country Calendars

+ Insert existing

X Remove existing

Name
<input type="text"/>

Romania

General Data Section

For the **General Data** section, the following fields are available:

Field	Required	Data Type	Details
Is Revolving	No	Boolean	<p>Allows a business to borrow money as needed for funding working capital needs and continuing operations such as meeting payroll and payable.</p> <div> <p>NOTE</p> <p>If a term loan is revolving, its attached limit must also be revolving, meaning that the Available Amount of the limit is replenished either on each repayment of the principal or on loan contract closure.</p> </div>
Allow Refinancing	No	Boolean	Select if the account can be refinanced for this product.
Allow Restructuring	No	Boolean	Select if the loan can be restructured.
Allow CoDebtor	No	Boolean	Select if another debtor exists for this product.
Max No. of CoDebtors	No	Text	Set the maximum number of co-debtors possible for this product.

Click the **Save and Reload** button at the top right corner of the page.

Disburse Settings Section

For the **Disburse Settings** section, the following fields are available:

Field	Required	Data Type	Details
Auto Disbursement	Yes	Boolean	Specify if the disbursement is automatically performed when the contract is approved.
Max No Disbursements	No	Whole number	Enter the maximum number of disbursements that can be configured for this product.
Activ Tranche On Doc Submission	No	Boolean	If you select this checkbox, then the tranches are activated (disbursements are created and approved) after certain documents are submitted. It is the Financial Institution's responsibility to verify the content of the submitted documents.

Click the **Save and Reload** button at the top right corner of the page.

Product Guarantees Section

For the **Product Guarantees** section, the following fields are available:

Field	Required	Data Type	Details
Is Guaranteed	Yes	Boolean	<p>This checkbox marks the product as secured or unsecured.</p> <div> <p>NOTE</p> <p>The Collateral Cover Percent and Allow Collateral Partial Release fields and the Allowed Guarantee Types section appear when you select this checkbox.</p> </div>

Field	Required	Data Type	Details
Collateral Cover Percent	No	Whole number	The percent that the collateral person on the contract pays. It usually is over 100%.
Allow Collateral Partial Release	No	Boolean	A partial release is a mortgage provision that allows some of the collateral to be released from a mortgage after the borrower pays a certain amount of the loan.

Product Guarantees

Is Guaranteed

☒

Collateral Cover Percent

Allow Collateral Partial Release

☐

Allowed Guarantee Types

+ Insert

X Delete

Export

Refresh

<input type="checkbox"/>	Guarantee Type	Max Accepted Covering Percent
<input type="text" value="Q"/>	<input type="text" value="Q"/>	
FixDeposit		85.00

In the **Allowed Guarantee Types** section, displayed if the **Is Guaranteed** checkbox was selected earlier, you can insert or delete allowed guarantee types. To insert a guarantee type, click the **Insert** button and fill in the name, maximum accepted covering percent, and select the guarantee type.

Add Product Guarantee Structure

Product Guarantee Structure	
Banking Product	Guarantee Type
<input type="text" value="Card"/>	<input type="text" value="FixDeposit"/>
Max Accepted Covering Percent	Name
<input type="text" value="85"/>	<input type="text" value="Deposit"/>

Click the **Save and Reload** button at the top right corner of the page.

Product Tranches Section

In the **Product Tranches** section, insert existing disbursement tranches or create new ones, configured to fit the product. Usually used for corporate loans, such dividend payments or cash outflows are not done in equal amounts and usually trigger a recalculation in terms of interest.

Product Tranches

+ Insert
✕ Delete
📄 Export
🔄 Refresh

<input type="checkbox"/>	Name	Tranche Percent	Start Month From Acti...	Interest Percent
	🔍	🔍	🔍	🔍
	Tranche 1	50.0000		2.0000
	Tranche 2	50.0000		2.0000

Add multiple such disbursements by clicking the **Insert** button. You can add:

- Name.
- Tranche Percent (%): the percentage of the final amount that goes towards the disbursement.
- Start Month From Activation: the start month for the disbursement. It can be any month in the loan availability period.
- Interest Percent (%): the interest percent for that particular disbursement.
- Unusage Commission Percent (%): a commission paid for the loan amount unused.

Click the **Save and Reload** button at the top right corner of the page.

Payment Schedule Types Section

In the **Payment Schedule Types** section, the following fields are available:

Payment Schedule Types

Period Type	Periodicity Type	Grace Type	Product Grace
Months	Monthly	Both	GracePeriod

Field	Required	Data Type	Details
Period Type	No	Option set	<p>Select the period of availability for the product. Choose one:</p> <ul style="list-style-type: none"> • Days • Weeks • Months • Years • Once. <div> NOTE The period type must be the same as the measurement unit of the Periodicity Type. </div>

Field	Required	Data Type	Details
Periodicity Type	Yes	Option set	<p>Select the regularity of payments. Select one from the following:</p> <ul style="list-style-type: none"> • Once (the whole amount is paid at maturity) • Weekly • Monthly • Bimonthly • Trimestrial • 4 Weeks • Semestrial • Annual • 30Days. <div> <p>NOTE</p> <p>If the measurement unit of the selected Periodicity Type = Days, then Holiday Shift For Repayment Installments = False and it cannot be changed.</p> </div>

Field	Required	Data Type	Details
Grace Type	No	Option set	<p>Select whether the product grace should apply to the principal, the interest, or both. Select an option from the list:</p> <ul style="list-style-type: none"> Both Principal Interest.
Product Grace	No	Option set	<p>Select an option from the list. This is the amount of time that the bank can offer to a customer at the beginning of the contract without repayments of principal or principal + interest (however, most probably the bank capitalizes the interest for that period of time).</p>

Click the **Save and Reload** button at the top right corner of the page.

Schedule Templates Section

In the **Schedule Templates** section, you can associate/ delete payment schedule types to/ from the banking product.

Schedule Templates

+ Insert existing

X Remove existing

☐ Name

Credit Card Installments

One principal installment

To associate a payment schedule type to the banking product, click **Insert Existing** and select one of the already defined types. Go to "[Payment Schedule Types](#)" on page 530 to read more about this.

IMPORTANT!

When creating a new Term Loan, Mortgage, or Overdraft banking product, you must select at least one payment schedule type, otherwise you can't approve the product. If the **Schedule Templates** section has no records, an error message is displayed upon transitioning the product into the **Approved** status: "At least one Payment schedule type definition must be selected for approval!"

Click the **Save and Reload** button at the top right corner of the page.

Holiday Settings Section

In the **Holiday Settings** section, the following fields are available:

Holiday Settings

Holiday Shift For Repayment Installments



Defer Due Date



Holiday Shift Method

Forward

**Country Calendars**

+ Insert existing

× Remove existing



Name



Romania

Field	Required	Data Type	Details
Holiday Shift For Repayment Installments	Yes	Boolean	<p>This checkbox marks if the holidays are considered for the calculation of the maturity schedule.</p> <div> <p>NOTE</p> <p>The Country Calendars section and the Defer Due Date and Holiday Shift Method fields appear if you select this checkbox.</p> </div>
Defer Due Date	Yes	Boolean	<p>If you select the checkbox, the payment schedule calculates the next payment amount as if the due date has not changed even when the due date falls on a holiday.</p> <p>This checkbox is selected by default.</p>

Field	Required	Data Type	Details
Holiday Shift Method	No	Option set	<p>Select from the list the method to be used when calculating the due date if that date falls to a holiday. The due date can be shifted before or after the holiday.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • None - the due date is not shifted. • Forward - the due date is shifted to the next working day after the initially calculated due date. • Backward - the due date is shifted to the last working day before the initially calculated due date. <p>Default value: Forward.</p>

In the **Country calendars** section, you can insert or delete calendars. You can work with multiple calendars as well. Click the **Insert Existing** button and add the country's name. If the maturity date coincides with a holiday, it is allocated automatically on the next business day.

Click the **Save and Reload** button at the top right corner of the page.

Availability

The **Availability** tab determines the monetary range and the time frame when the product is available for customers.

BANKING PRODUCT FACTORY USER GUIDE

1 Main Info 2 Details 3 **Availability** 4 Dimensions 5 Product Formula Engine 6 Documents 7 Loan Core Settings 8 History 9 Origination Elements 10 GL Settings

Product Availability

Minimum Amount: 5,000 Maximum Amount: 200,000 Minimum Period: 12 Maximum Period: 120 Minimum Advance: Maximum Advance:

Start Period For Unusage After Activation(Months): 3 Maximum Period Disburse After Activation (Months): 3 Minimum Principal For Early Repayment:

Availability Rules

Product Availability Item Filters: + Insert X Delete Export Refresh

Description:

Product Covenants: + Insert X Delete Export Refresh

Type: Covenant: Valid From: Valid to: Value:

The following fields are available:

Field	Required	Data Type	Details
Minimum Amount	No	Whole Number	The minimum amount of the product for which the bank opens a contract.
Maximum Amount	No	Whole Number	The maximum amount of the product for which the bank opens a contract.
Minimum Period	No	Whole Number	The minimum duration of the product mentioned in the contract.
Maximum Period	No	Whole Number	The maximum duration of the product mentioned in the contract.
Minimum Advance	No	Whole Number	The minimum down payment that must be paid for the leasing contract to be signed.
Maximum Advance	No	Whole Number	The maximum advance that can be paid for the leasing contract to be signed.
Start Period For Unusage After Activation (Months)	No	Whole Number	The start period for unused amount after the activation.
Maximum Period Disburse After Activation (Months)	No	Whole Number	The maximum period, in months, to perform a disbursement after the contract is activated.

Field	Required	Data Type	Details
Minimum Principal For Early Repayment	No	Whole Number	The minimum amount of the principal for which a customer can perform an early repayment.

Availability Rules Section

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see "[Product Filter](#)" on page 519.

Availability Rules

Product Availability Item Filters

☐ Description

CA >< 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Product Covenants Section

In the **Product Covenants** section you can set certain conventions that applicants must abide by after getting the loan. This is usually applicable for corporate clients that must meet certain requirements in order to continue to receive disbursements.

Product Covenants

					<input type="button" value="+ Insert"/> <input type="button" value="X Delete"/> <input type="button" value="Export"/> <input type="button" value="Refresh"/>
<input type="checkbox"/> Type	Covenant	Valid From	Valid to	Value	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Affirmati...	Borrowers should perform tax obligations	19/04/2022	20/04/2030		
Financial	Lender can monitor borrower's current r...	19/04/2022	20/04/2030		

Click the **Insert** button to add a covenant to the product. Each covenant can be attributed a value, an availability period, and a review frequency in months. Read more about covenants in the "[Covenant](#)" on page 567 page.

Click the **Save and Reload** button at the top right corner of the page.

Dimensions

The **Dimensions** tab displays the interests, commissions, insurances, discount and questions valid for a product.

The screenshot displays the 'Dimensions' tab in the Banking Product Factory interface. It features four main sections: 'Interest & Commissions', 'Insurances', 'Discounts', and 'Questions'. Each section includes an 'Insert' button and a search bar. The 'Discounts' section shows a table with columns: Name, Discount, End Date, Start Date, and Value Discount. The 'Questions' section shows a table with columns: Question and Business Status.

You can insert, delete or export interest, commissions, insurances, discounts or questions. To add a new one, click **Insert** and fill-in the fields detailed in the sections below.

NOTE

To configure the interest and commissions separately, navigate to **Main > Product Factory > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions Section

Click **Insert** to add an [interest](#) or a [commission](#). In the **Interest & Commission Item** page, fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.

Field	Required	Data Type	Details
Code	No	Text	Enter a code for this particular interest/ commission.
Item Name	Yes	Text	Enter a name.
Start Date	No	Date	The start date when the interest/ commission becomes effective.
End Date	No	Date	The end date for the interest/ commission.
Interest List	No	Option set	Select from which list the interest is a part of.
Commissions List	No	Option set	Select from which list the commission is a part of.
Minimum Interest Rate (%)	No	Numeric	Enter the percent applicable as a minimum interest rate at the contract level.
Is Negotiable	No	Boolean	Select the checkbox to specify that every interest, commission or margin field at the contract level is negotiable and can be edited.

Click the **Save and Reload** button at the top right corner of the page.

In the **Interest & Commission Item Filters** section, click **Insert** to insert an [item filter](#) and fill in the following fields:

Field	Required	Data Type	Details
Filter	Yes	Option set	Select a filter created earlier in the " Product Filter " on page 519 .
Value/ Date	No	Text/Date	Select the beginning value/ date for the filter.
Until Value/ Until Date	No	Text/Date	Select the maximum value/ date for the filter.
Description	No	Text area	This field is automatically filled in after clicking the Save and Reload button. The values/ dates inserted above are turned into an expression.
For Lookup attributes			

Field	Required	Data Type	Details
Filter	Yes	Option set	Select a filter created earlier in the " Product Filter " on page 519 .
Option Set	No	Option set	It is automatically filled in with the option set name created for the attribute.
Description	No	Text area	It is left blank. Add a description if needed.
Grid of Options	No	Grid	This field is automatically filled in after clicking the Save and Reload button. The values of the option set are displayed. Select the Boolean for the values you wish to include in the filter.



Save and close

Save and reload

Edit Interest & Commission Item Filter

Main Information

Filter

AL_Amount

↓

✎

Value

1

Until Value

50,000

Description

AL_Amount >< 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Insurances Section

For any banking product, you can select a pre-existing insurance or create a new one. To add a new [insurance](#), fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Insert a code for this particular insurance.

Field	Required	Data Type	Details
Item Name	Yes	Text	Insert a name.
Start Date	No	Date	It is the start date when the insurance becomes effective.
End Date	No	Date	It is the end date for the insurance.
Details	No	Text area	It is left blank. Add a description if needed.
Insurance List	No	Option set	Select from which list the insurance is a part of.

Click the **Save and Reload** button at the top right corner of the page.

In the **Insurance Item Filters** section, click **Insert** and fill in the following fields:

Field	Required	Data type	Description
Filter	Yes	Option set	The name inserted earlier.
Value	Yes	Text	The starting value for the attribute.
Until Value	Yes	Text	The ending value of the interval.
Description	No	Text area	Insert the proper description for the availability filter.

Click the **Save and Close** button at the top right corner of the page.

Discounts Section

For any banking product, you can add discounts of any nature. You can select a pre-existing discount or create a new one.

Click the **Insert** button to add a new **discount**. In the **Details** page, fill in the following fields:

Field	Required	Data Type	Details
Name	Yes	Text	Insert the appropriate name for the discount.
Discount	No	Option set	Choose one of the pre-configured types of discounts or create a new one. According to the selected type, new fields appear on the page requiring to be filled in.
Value discount	No	Numeric	Insert the value of the discount to be applied, e.g. 15.
Start date	Yes	Date	It is the start date when the discount becomes effective.
End date	Yes	Date	It is the end date for the discount.
Applied to dimension	No	Option set	Specifies for which product dimension this discount is applicable (interest, commission or insurance). This is autocompleted by the selected discount's dimension.
Commission type	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount. Specifies for which commission type this discount is applicable. This is autocompleted by the selected discount's default commission type.
Commission	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount. Specifies for which commission this discount is applicable. This is autocompleted by the selected discount's default commission.

Field	Required	Data Type	Details
Insurance class	No	Lookup	This field appears if the selected discount = Discount Life Insurance or Interest Discount. Specifies for which insurance class this discount is applicable (credit, home, life or other insurance class). This is autocompleted by the selected discount's insurance class.
Insurance	No	Lookup	This field appears if the selected discount = Discount Life Insurance. Specifies for which insurance this discount is applicable. This is autocompleted by the selected discount's insurance.
Interest type	No	Lookup	This field appears if the selected discount = Interest discount. Specifies for which interest type this discount is applicable.
Use Banking Formula	No	Boolean	If you select this checkbox, the discount is calculated using the Banking Formula engine.
Is optional discount?	No	Boolean	Selecting this checkbox results in the discount being applied only if the customer agrees to the discount.
Is percentage	No	Boolean	If you select this checkbox, the discount is calculated as a percentage from the contract's amount.
Destination entity	No	Option set	Select the entity where to register the discount. This field opens when the Is optional discount? checkbox is selected.

Field	Required	Data Type	Details
Destination entity attribute	No	Option set	Select the attribute where to register the discount. This field opens when the Is optional discount? checkbox is selected.

Click the **Save and Reload** button at the top right corner of the page.

In the **Product Discount Item Filter** section, click **Insert** and fill in the fields as specified in the [Product Filter page](#). The fields displayed depend on the selected filter.

Click the **Save and Reload** button at the top right corner of the page.

Questions Section

Choose one or more questions to add to the banking product, or insert a new one.

To insert a new [question](#), click **Insert existing**, then click **Insert**. In the **Add Banking Product Question** page, fill in the following fields:

Field	Required	Data type	Description
Question	No	Text	Enter the appropriate name.
Answer Type	No	Option set	Select the type of answer the customer has to give: <ul style="list-style-type: none"> • text • numeric • option set.
Answer Entity	No	Option set	Select the entity where the answer is stored.
Answer Field	No	Option set	Select the attribute where the answer is stored.

Click the **Save and Reload** button at the top right corner of the page.

The **Banking Products List** shows where the question is used.

IMPORTANT!

The question has to be activated in order for it to be added to the banking product.

Click the **Save and Close** button at the top right corner of the page.

For example, this is how a question is displayed in a digital journey in the FintechOS Portal:

The screenshot shows a digital journey interface titled 'EDIT LOAN APPLICATION'. At the top, there are status indicators: 'CURRENT STATUS: INITIALIZED' and 'NEXT STATUS: CHOOSE STATUS-'. The main heading is 'Eligibility Questions' with a subtext: 'We ask for this information so that we can carry out the checks needed to consider you for a mortgage'. The form contains three input fields: 'DEPOSIT SOURCE' (a dropdown menu), 'RETIREMENT DATE' (a date picker), and 'RETIRED' (radio buttons for 'Yes' and 'No', with 'No' selected). A 'Finish' button is located at the bottom right of the form.

Product Formula Engine

The **Product Formula Engine** tab keeps formulas built with [Formula Engine](#) for the banking product. Such formulas can be used to determine the eligibility of a customer.

The screenshot displays the 'Product Formula Engine' tab in a software interface. It features a navigation bar at the top with tabs: 1 Main Info, 2 Details, 3 Availability, 4 Dimensions, 5 Product Formula Engine (active), 6 Documents, 7 Loan Core Settings, 8 History, 9 Origination Elements, and 10 GL Settings. Below the navigation bar, there are two main sections: 'Banking Product Formulas' and 'Test Scenarios'. Each section has a table with columns for Name, Formula Type, and Formula. The 'Banking Product Formulas' table shows a formula named 'CA' with type 'CommissionFormula' and formula 'commission@yaAmount'. The 'Test Scenarios' table shows a scenario named 'Duplicate-19/04/2022,11:07:57' with type 'CommissionFormula'. Both sections have buttons for '+ Insert', 'X Delete', 'Export', and 'Refresh'.

Banking Product Formulas Section

In the **Banking Product Formulas** section, choose an already defined formula or click **Insert** to configure a new one, for example a formula for eligibility or scoring purposes. For information on how to build a formula, see [Define Formula Inputs](#).

In the **Add Banking Product Formula** page, fill in the following fields:

Field	Required	Data type	Description
Name	Yes	Text	Enter an appropriate name.
Banking Product	No	Option set	The name of the banking product is inserted automatically.
Formula Type	Yes	Lookup	Select the type of formula configured before, e.g. scoring /eligibility.
Formula	Yes	Lookup	Select the previously configured formula. <div>IMPORTANT! The formula must be activated before attaching it to a product.</div>
Data Mapping	No	Lookup	Select the previously configured data mapping.

After selecting the desired formula, click **Save and reload**, then click **Map Data**.

In the **Formula Mapping** page, click **Input** and configure the input data for the formula.

Click **Output** and configure the output for the formula.

The screenshot shows the 'Output' tab selected in a three-step process (Definition, Input, Output). Below the tabs, there is a text input field containing 'FTOS_CB_Contract - Output'. Below this, there is a button labeled 'step1' with a red 'x' icon and a button labeled 'click to map' with a green checkmark icon. At the top right, there are two buttons: 'Save and close' and 'Save and reload'.

Click the **Save and Close** button at the top right corner of the page.

Such formulas can be used in digital journey steps, for example when the customer inserts their financial data.

The screenshot shows a digital journey step titled 'EDIT RETAIL APPLICANT DATA'. The main section is 'Income & Outgoings' with a sub-header 'We use your expected income and outgoings to work out how much we'll be able to lend and to ensure that any mortgage we may offer you is affordable.' The form contains several input fields: 'WHAT IS YOUR ANNUAL SALARY BEFORE TAX?' (€), 'PAYING MONTHLY FOR OTHER LOANS' (€), 'TOTAL CREDIT CARDS LIMITS' (€), 'OTHER SPENDINGS' (€), 'LIFE, HEALTH INSURANCE AND PRIVATE PENSIONS', 'ARE YOU MARRIED?' (dropdown with 'none'), 'NUMBER OF CHILDREN' (0), 'CHILD CARE AND EDUCATION COSTS' (€), 'HOW MANY FINANCIAL DEPENDANTS' (0), 'MAINTENANCE FOR DEPENDANTS', 'EDUCATION LEVEL' (dropdown with 'none'), 'EMPLOYMENT STATUS' (dropdown with 'none'), 'EMPLOYMENT MONTHS', 'YOUR RESIDENCE IS' (dropdown with 'none'), and 'YOUR RENT IS'.

Test Scenarios Section

A good practice is to test the formula before displaying it in a digital journey. You can do that in the **Test Scenarios** section.

Click **Insert** to open the **Add Test Scenario** page.

Insert a **Test Scenario Type** from the option set. The keys and the values are shown. Click the **Save and Reload** button at the top right corner of the page.

← Edit Test Scenario Save and close Save and reload

Main Information

Test Formula Type CommissionFormula

Key Value

Amount 23.45

Save Output Data Calculate

Test Scenario Outputs

+ Insert X Delete Export Refresh

Name

Click the **Calculate** button. The outputs are displayed in the **Test Scenario Outputs** section. These outputs can be saved by selecting the **Save Output Data** checkbox next to **Calculate**.

Documents

The **Documents** tab contains all the attached documents available for a product.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Product Formula Engine 6 Documents 7 Lean Core Settings 8 History 9 Origination Elements 10 GL Settings

Banking Product Documents

+ Insert X Delete Export Refresh

Report Banking Copies No Operation Code

Status overview of the queues 2 TC

Banking Product Agreements

+ Insert X Delete Export Refresh

Code

No data


Banking Product Documents Section

The previously associated documents are displayed in the **Banking Product Documents** section.

To attach a new document to the banking product, click **Insert** and fill in the following fields:

Field	Data Type	Description
Operation Code	Whole number	Enter a code for the document.

Field	Data Type	Description
Banking Copies No	Whole number	Insert the number of copies made.
Report	Lookup	Select a document from the list.
Document Type	Option set	Select a document type from the list.
Is Mandatory	Boolean	Select if the document is mandatory.
Includes Debtor	Boolean	Select if the document includes the debtor.
Includes Coborrower	Boolean	Select if the document includes the co-borrower.
Requires Signature	Boolean	Select if the document requires to be signed.
Is accord	Boolean	Select if the document represents the accord.


Save and close Save and reload Save and new

Add Banking Product Document

Banking Product Document

Operation Code: Banking Copies No: Report: Document Type:

Is Mandatory: ☒ Yes ☐ No Includes Debtor: ☐ Yes ☒ No Includes Coborrower: ☐ Yes ☒ No Requires Signature: ☐ Yes ☒ No

Is Accord: ☐ Yes ☒ No

Click the **Save and Close** button at the top right corner of the page.

Banking Products Agreements Section

The agreements that a customer needs to go through are displayed in the **Banking Products Agreements** section.

To attach a new agreement to the banking product, click **Insert** and fill in the following fields:

Field	Required	Data Type	Description
Agreements	Yes	Option set	Select an agreement from the list.
Banking Product	Yes	Option set	It is automatically filled in.
Code	No	Whole number	Insert the corresponding code.
Is Mandatory	No	Boolean	Select if the agreement is mandatory for the product.

Edit Banking Product Agreement

Main Information

Agreement: Popescu Broker + Code: AGR + Banking Product: SLICE Loan + Is Mandatory: ☒

Click the **Save and Close** button at the top right corner of the page.

For more information on how to configure a contract or an agreement, see the [Digital Document Processor](#).

Lean Core Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

Transactions types that are performed to and from a banking product are displayed in the **Lean Core Settings** tab. The tab also holds information about the reconciliation account associated with the products, mandatory roles for contract approval, payment allocation settings, the treatment of returned goods for contracts based on this banking product (only for Term Loans and Mortgage banking products), and closing contract settings.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Product Formula Engine 6 Documents 7 Lean Core Settings 8 History 9 Origination Elements 10 GL Settings

Self Bank Account Associated With The Product

Reconciliation Account: Reconciliation EUR Negative balance treatment: NoMessage

Payment Allocation Settings

Repayment Allocation Method: CostOrder Grace Days for Repayment: Penalty for grace period: ☐

Mandatory Roles for Contract Approval

+ Insert X Delete Export Refresh

Role Search Limit: (All)

Beneficiary: ☐

Allowed Transactions

+ Insert existing X Remove existing

Name:

Top Up Account: Transfer between my bank accounts Withdraw

Closing Contract Settings

Buffer Close Days: 15 Close Real Time: ☐ Closing Is Flexible: ☒

Contract Is Closed Automatically: ☒

Self Bank Account Associated With The Product Section

For each banking product, you must select a reconciliation account, which is the bank account to be used for transactions.

Self Bank Account Associated With The Product

Reconciliation Account	Negative balance treatment
<div> <div>Reconciliation EUR</div> <div>↓</div> </div>	<div> <div>NoMessage</div> <div>▼</div> </div>

Next to the **Reconciliation Account** field, select a value from the list to be the current account from which or to which the money is wired from or to.

NOTE

This account must have the same currency as the product, because the translations are performed from and into this account.

Select a value for the **Negative Value Treatment** drop-down to specify how Core Banking treats situations when the funds of the reconciliation account associated with the banking product used in the contract would go below zero if a disbursement event would be approved. The possible values are:

- **Error** - there is an error message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can't be approved and the balance can't go below zero. Select this value if you want to block any transactions that would result in a negative balance of the reconciliation account associated to the banking product.
- **Warning** - there is a warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can be approved and the balance can go below zero.

- **NoMessage** - there is no error or warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account. The event can be approved and the balance can go below zero.

NOTE

Core Banking also has a system parameter, **ReconciliationAccountTreatment**. That is a system-wide setting, applicable to events for contracts based on all banking products without a specified **Negative balance treatment** value. Core Banking takes into consideration the settings used at the banking product level (the **Negative balance treatment** field's value). Thus, if the value is specified at the banking product level, then that value takes precedence over the system parameter's setting.

If you associate the same reconciliation account to more than one banking product, then the setting selected in banking product A is applied for contract events based on banking product A, while for the banking product B, Core Banking would apply the setting selected at the level of banking product B.

Payment Allocation Settings Section

This section holds the payment allocation settings. This is where you can decide which allocation method should be used to determine the order in which credit items are prioritized when repaying loans, credit accounts, and so on. You can also define the grace period settings.

Payment Allocation Settings

Repayment Allocation Method	Grace Days for Repayment	Penalty for grace period
<div>CostOrder</div> <div>↓ ✎</div>	<div>5</div>	<input type="checkbox"/>

Fill in the following fields:

Field	Required	Data Type	Details
Payment Allocation Method	No	Lookup	The payment allocation method represents the recovery order of amounts from payment notifications. Select a payment allocation method from the list.
Grace Days for Repayment	No	Whole number	Insert the number of days for which the bank expects a payment without calculating penalty.
Penalty for grace period	No	Boolean	If you select the checkbox, the penalty interest is applied on the loan contract without taking into consideration the grace period defined at contract level, being calculated for the difference between system date - due date, if the grace period passed and the customer didn't pay the due amounts. If you leave this checkbox unselected, the penalty interest is applied on the loan contract taking into consideration the grace period defined at contract level, being calculated for system date - due date + grace days for repayment.

Click the **Save and Reload** button at the top right corner of the page.

Mandatory Roles for Contract Approval Section

The **Mandatory Roles** section allows you to add the roles of the participants that are mandatory to exist at the contract level for contracts based on this banking product. In other words, when creating contracts based on banking products with Merchant role in this section, you must add a customer with the same Merchant role as contract participant, otherwise, the contract cannot be approved. When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role, in this case Merchant Exposure.

Mandatory Roles for Contract Approval

+ Insert

✕ Delete

📄 Export

🔄 Refresh

☐ Role

Search Limit

Beneficiary

☐

In the **Mandatory Roles** section, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Lookup	The banking product for which you define mandatory roles. This is automatically completed with the current banking product.
Role	Yes	Option Set	Select the role of the participants that are mandatory to exist at the contract level for contracts based on this banking product.
Search Limit	Yes	Boolean	When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role. If you select a role not associated with a customer limit type in Core Banking, the Search Limit field becomes read-only and unselected.

⏪

Save and close

Save and reload

Save and new

Add Mandatory Role

Main Information

Banking Product

Role

Search Limit

☒

Click the **Save and Reload** button at the top right corner of the page.

Return Of Goods Section**IMPORTANT!**

This section is displayed only for **Term Loan** and **Mortgage** banking products.

The fields within this section allow you to define whether a contract based on the banking product can have **Returned Amount** or **Goods** transactions or not, and the specific conditions for these transactions. The **Returned Amount** or **Goods** transaction type can be used when a customer returns all or part of a loan or mortgage in a short while after contract creation, if the banking product was defined to allow such transactions. You can set up **Return Fee** type commissions, to return all or some of the claimed commission to the borrower.

To configure the treatment of returned goods for contracts based on this banking product, fill in the following fields:

Field	Required	Data Type	Details
Allow Return Of Goods	Yes	Boolean	Select this checkbox if the contracts based on this banking product accept Return of Goods transactions. Default value: False. If selected, the Accepted Days For Return and Return Message fields are displayed, otherwise, these fields are not visible.
Accepted Days For Return	Yes	Whole Number	Specify the number of days after contract creation during which the return of goods transaction can be created and approved.

Field	Required	Data Type	Details
Return Message	Yes	Option Set	<p>Select the behavior of messages generated by Core Banking for situations when the Returned Amount or Goods transaction's approval date + the number of accepted days for return \geq the current date. Possible values are taken from the Warning Error Treatment option set. According to the desired behavior, choose:</p> <ul style="list-style-type: none"> • Error, if the transaction should not be approved and an error message should be displayed; • Warning, if the transaction can be approved, but a warning message should be displayed; • NoMessage, if the transaction can be approved without any messages.

Return Of Goods

Allow Return Of Goods



Accepted Days For Return

Return Message

Click the **Save and Reload** button at the top right corner of the page. If Allow Return Of Goods = True, then the Returned Amount of Goods transaction is automatically added to the **Transaction Types** section.

Closing Contract Settings Section**IMPORTANT!**

This section is displayed only for **Term Loan** and **Mortgage** banking products.

In the **Closing Contract Settings** section, you can configure the default closure settings for contracts based on this banking product.

Closing Contract Settings

Buffer Close Days

Close Real Time

☐

Closing Is Flexible

☒

Contract Is Closed Automatically

☒

Fill in the following fields:

Field	Required	Data Type	Details
Buffer Close Days	No	Whole Number	Enter the number of days used as buffer before automatically closing the contract when the contract reaches maturity and its balance reaches zero. If Buffer Close Days > 0, then Contract Is Closed Automatically = False.

Field	Required	Data Type	Details
Close Real Time	No	Boolean	If you select this checkbox, the contract based on this banking product is closed in real-time, when the contract reaches maturity and its balance reaches zero, without waiting for the end of day processes. If Close Real Time = True, then Buffer Close Days = 0 and Contract Is Closed Automatically = True.
Closing Is Flexible	No	Boolean	If you select this checkbox, the closure details of the contract based on this banking product can be modified at the contract creation.
Contract Is Closed Automatically	No	Boolean	If you select this checkbox, the contract based on this banking product is closed automatically at maturity, if the balance reaches zero. If Contract Is Closed Automatically = False, then Close Real Time = False.

Click the **Save and Close** button at the top right corner of the page.

Allowed Transactions Section

In the **Allowed Transactions** section, you can associate possible transaction types with the selected banking product. Click **Insert existing** and select the desired transaction types.

Double-click a selected transaction type to edit it.

Transaction Configuration

Save and close

Save and reload

Edit Transaction Type

Settings

Name

Disbursement

Transaction Code

DSB

Process Type

Disbursement

Edit Form

FTOS_CB_EventDisbursement

Transaction Operation Type

Disbursement

Is System Transaction

☐

Is Automatic Transaction

☐

Real Time Process

☐

Only One Draft

☒

Generate New Contract Version

☐

Commission Type

Return Commission Type

Accounting Configurations

Generates Accounting Entry

☒

OL Master Entity

FTOS_CB_ContractEvent

Purge Configurations

To Be Purged

☒

Purge Number of Days

30

Master Purge Entity

FTOS_CB_ContractEvent

Transaction Value Types

+ Insert

X Delete

Export

Refresh

☐ Transaction Type

Type

Value Type Name

Is Header

Value Type Attrib...

(All)

Transaction Item Accounting Configurations

+ Insert

X Delete

Export

Refresh

☐ Transaction...

Accountin...

Accountin...

Chart Acc...

Currency

Operation...

Take From...

In the **Edit Transaction Type** section, fill in the following fields:

Field	Required	Data Type	Details
Settings			
Name	Yes	Text	Name of the transaction type.
Transaction Code	Yes	Text	The code of the transaction type.
Is Automatic Transaction	Yes	Boolean	This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations.
Is System Transactions	No	Boolean	This checkbox marks the transaction as being neither a credit of the account, nor an allocation of funds, but a transaction that does not influence other transactions within the account. System transactions are meant to be used only for accounting.

Field	Required	Data Type	Details
Real Time Process		Boolean	This checkbox marks the transaction as to be processed in real-time. If the value is True, then the transaction is processed right away. If the value is False, then the transaction is inserted as a bank account transaction queue record.
Edit Form	No	Lookup	The form used to edit this transaction type. The lookup only shows forms defined on the Contract Event entity.
Only One Draft	No	Boolean	If you select this checkbox, there can be only one record of this transaction type in Draft status created at the contract level.
Generate New Contract Version	No	Boolean	This checkbox allows you to specify if a new contract version should be generated by this transaction type.
Commission Type	No	Lookup	The commission type applicable for this transaction type. Return fee commissions are filtered out and can't be selected.
Return Commission Type	No	Lookup	The return fee commission type applicable for this transaction type. Only return fee commissions can be selected.

Field	Required	Data Type	Details
Process Type	Yes	Option set	<p>This field associates the process type with the transaction operation type, which makes the connection with the transaction motor of bank accounts. Select one of the processes defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div>
Accounting Configurations			
Generates Accounting Entry	Yes	Boolean	This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity.
OL Master Entity	Yes	Lookup	The entity referenced by the accounting systems.
Purge Configurations			
To Be Purged	No	Boolean	This checkbox marks the transaction as purgeable. If selected, it allows you to purge or archive records in Draft status.
Purge Number of Days	Yes	Whole Number	The default number of calendar days that a record can be kept in Draft status before it is purged. For additional information, see the Core Banking System Parameters page. This field is displayed only when To Be Purged = True.

Field	Required	Data Type	Details
Master Purge Entity	Yes	Lookup	The master purge entity under which the draft records are. This field is displayed only when To Be Purged = True.

You can also edit the information in the **Transaction Value Types**, **Transaction Item Accounting Configurations** and **Transaction Accounting Models** sections. Read more details about Transaction Types in the **Operational Ledger** User Guide.

Click the **Save and Close** button at the top right corner of the page.

History

The **History** tab displays the versions of the banking product, their workflow status and the user who modified the product.

The screenshot shows the 'History' tab interface. At the top, there is a horizontal menu with tabs: 1 Main Info, 2 Details, 3 Availability, 4 Dimensions, 5 Product Formula Engine, 6 Documents, 7 Loan Core Settings, 8 History (selected), 9 Origination Elements, and 10 GL Settings. Below the menu, the 'History' section is active. It features a search bar with a magnifying glass icon and a 'Refresh' button. Below the search bar, there are five search filters: Label, Name, attributeVersionDate, attributeVersion, and Modified by user. Each filter has a search input field with a magnifying glass icon. Below the filters, a table displays the history data. The table has five columns corresponding to the filters. The first row shows 'Draft' under Label, 'Duplicate' under Name, '19/04/2022 10:29' under attributeVersionDate, '1' under attributeVersion, and a user icon under Modified by user.

Here you can track the product's life cycle and review older versions that are no longer active (for details, see "[Banking Products' Life Cycle](#)" on page 595).

Origination Elements

The **Origination Elements** tab holds the elements required in origination journey, such as product benefits, display conditions, features, destination types, or associated products.

BANKING PRODUCT FACTORY USER GUIDE

1 Main Info

2 Details

3 Availability

4 Dimensions

5 Product Formula Engine

6 Documents

7 Lean Core Settings

8 History

9 Origination Elements

10 GL Settings

Product Image

ProductPIC.JPG

Add file or Drop file here

Document

ProductPresentationDoc.pdf

Add file or Drop file here

Benefits

File Edit Insert View Format Table Tools

Formats -
B
I
A

Quick Approval

Low Interest Rates

Display Conditions

File Edit Insert View Format Table Tools

Formats -
B
I
A

Product Features

+ Insert

X Delete

■ Export

□ Refresh

<input type="checkbox"/>	Feature	DisplayName	Show Order
<input type="text" value="Q"/>	<input type="text" value="Q"/>	<input type="text" value="Q"/>	
	NMNGTFEES	No Management ...	1

Product Destination Types

+ Insert existing

X Remove existing

<input type="checkbox"/>	Display Name
<input type="text" value="Q"/>	
	Personal

Associated Products

+ Insert existing

X Remove existing

<input type="checkbox"/>	Name
<input type="text" value="Q"/>	
	Current Account USD

You can fill in the following fields:

Field	Required	Data Type	Details
Product Image	No	File	Insert an image representative for the product.
Document	No	File	Insert the document representative for the product.
Benefits	No	Text area	Insert the advantages of owning the banking product. You can format the text in the text editor window.
Display Conditions	No	Text area	Insert the conditions for the applicant, e.g. age limit, annual turnover, education level, income, registration documents.

Click the **Save and Reload** button at the top right corner of the page.

Product Features Section

In the **Product Features** section, you can insert, delete or export features. To add a feature, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Feature	No	Text	Enter the name of the product feature.
Is Main Feature	No	Boolean	Select the checkbox if it is the major feature.
Display Name	No	Text	Enter the display name of the feature.

Click the **Save and Reload** button at the top right corner of the page.

Product Destination Types Section

The **Product Destination Types** section allows for insertion or removal of existing product destination types. Click **Insert existing** and select one of the existing destination types, or insert a new one. To create a new destination type, insert a name and specify if it is default. For this case, the following have been configured:

- Loan Collateral
- Loan disbursements
- Personal
- Repayments.

Associated Products Section

The **Associated Products** section allows for insertion or removal of existing products. It is especially useful when you wish to create a link between two products. You can insert or remove a product from the list or create a new one.

Associated Products

The screenshot shows the 'Associated Products' section. At the top, there are two buttons: '+ Insert existing' and 'X Remove existing'. Below these is a table with a 'Name' column. The first row in the table is 'Current Account USD'.

Click the **Save and Reload** button at the top right corner of the page.

GL Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

In the **Banking Product GL Accounts** section, you can set specific accounts to be used by the **Operational Ledger** system for transactions performed on contracts based on this banking product. Thus, you can overwrite the generic settings of the Operational Ledger, instructing it to use the accounts specified at banking product level.

To add specific accounts to be used by **Operational Ledger**, click **Insert** and fill in the following fields in the displayed **Add Banking Product GL Account** page:

Field	Required	Data Type	Description
Product	Yes	Option set	Select from the list the banking product. Automatically completed with the banking product you are currently editing.
Accounting System	Yes	Option set	Select from the list the desired accounting system. The list contains the records created in the FTOS_GL_AccountingSystem entity.
Accounting Scope	Yes	Option set	Select from the list the corresponding accounting scope. The list contains the records created in the FTOS_GL_AccountingScope entity.

Field	Required	Data Type	Description
Item	No	Option set	Select from the list the corresponding transaction item. The list contains the records created in the FTOS_GL_TransactionItemAccountingConfig entity.
GL Account	Yes	Option set	Select from the list the corresponding GL account. The list is filtered based on the previously selected accounting system. It contains the accounts defined in the FTOS_GL_AccountingChart entity that were added to the chosen accounting system record.

Click the **Save and Reload** button at the top right corner of the page.

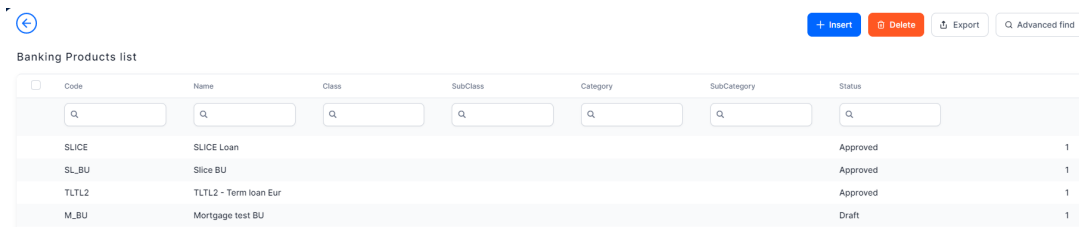
Mortgage Loans

A mortgage is a type of financial product in the form of a loan taken out to buy property or land. In general, mortgages run for a period of 25 or 30 years, but that depends on the applicant applying for the loan. Such types of loans are secured against the value of the property or land until it's paid off.

To manage banking products:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, click **Product Factory**.

4. Click **Banking Products** to open the **Banking Products List** page.



Code	Name	Class	SubClass	Category	SubCategory	Status	
SLICE	SLICE Loan					Approved	1
SL_BU	Slice BU					Approved	1
TLTL2	TLTL2 - Term loan Eur					Approved	1
M_BU	Mortgage test BU					Draft	1

On the **Banking Products List** page, you can:

- Add a new banking product by clicking the **Insert** button at the top right corner.
- Edit an existing banking product from the list by double-clicking it.
- Delete a banking product by selecting it and clicking the **Delete** button at the top right corner.

NOTE

For banking products in **Active** status, you can't change any of their related entities (such as features, discounts, product guarantee, interest or commission item, formula, test scenario, product covenant, product disbursement, product availability item filter). To change any of the product's related entities, create a new version of the banking product record.

Creating Mortgage Loans

To create a new banking product, click the **Insert** button on the top right side of the page. A new page opens, with a series of tabs that assist you in configuring the banking product:

1. **Main Info** - The first tab requires the basic elements for the creation of a product such as product type, name, code, hierarchy and features.
2. **Details** - This tab requires further elements that build on the first tab such as interest, payment type, top-ups, withdrawals and associated products.

3. [Availability](#) - This tab determines the monetary range and the time frame when the product is available for customers.
4. [Dimensions](#) - This tab displays the interests, commissions, insurances, discounts and questions valid for a product.
5. [Product Formula Engine](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Documents](#) - This tab contains all the attached documents available for a product.
7. [Lean Core Settings](#) - Transactions that are done to and from a banking product are found in this tab.
8. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
9. [Origination Elements](#) - This tab holds the elements required in origination journeys, such as product benefits, display conditions, features, destination types, or associated products.
10. [GL Settings](#) - This tab contains the accounts to be used by Operational Ledger for transactions performed on contracts based on this banking product.

Main Info

The **Main Info** tab requires the basic elements for the creation of a product such as name, code, currency, validity, or product classification.

The following fields are available:

Field	Required	Data Type	Details
Main Information			

Field	Required	Data Type	Details
Banking Product Type	Yes	Option Set	<p>Choose one for the following:</p> <ul style="list-style-type: none"> • Bank Account • Card • Credit Card • Deposit • Leasing • Mortgage • Overdraft • Term Loan <div> NOTE Your product type selection greatly influences the next steps. It is important to choose the right type of product to build. </div>
Currency	Yes	Lookup	Choose the currency for this banking product.
Banking Product Code	Yes	Text	Enter the code of the product. It can have 10 characters and it is used in the contract. It uses a sequencer and the code of the product type.
External Code	No	Text	The code of the product imported from an external system, if applicable. It can have 10 characters and it is not used in the contract.

Field	Required	Data Type	Details
Start Date	Yes	Date	Select the date when the product becomes available.
End Date	Yes	Date	Select the last date from when the product is available. From that date forward, the product is no longer available.
Name	Yes	Text	Enter the name of the product.
Class	No	Option set	Select the class of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Subclass	No	Option set	Select the subclass of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Category	No	Option set	Select the category of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
SubCategory	No	Option set	Select the subcategory of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Description			
Description	No	Text area	Write any description or additional text here.

Click the **Save and Reload** button at the top right corner of the page.

Product Classification Section

In the **Product Classification** section, you can insert or remove existing product classification items. To add a product classification item, click **Insert Existing** and select an already existing item.

Product Classification

+ Insert existing ✕ Remove existing

<input type="checkbox"/>	Code	Name	Classification Type	Valid From	Valid To
	<input type="text" value="REG1"/>	<input type="text" value="Classification ..."/>	<input type="text" value="Regulatory"/>	<input type="text" value="01/01/2020"/>	<input type="text" value="31/12/2030"/>

You can also create a new product classification item by clicking **Insert**. On the newly displayed **Add Product Classification** page, fill in the following fields:

←
✓
Save and close
Save and reload
Save and new

Add Product Classification

Main Information

Name	Code	Valid From	Valid To	Classification Type	Is Default
<input type="text" value="Reg 2"/>	<input type="text" value="REG2"/>	<input type="text" value="18/04/2022"/>	<input type="text" value="30/04/2029"/>	<input type="text" value="Regula..."/>	<input type="checkbox"/>

[Classified Banking Products](#)

Field	Required	Data Type	Details
Classification Type	Yes	Option set	Choose the classification type of the item. Possible values: Regulatory, Restructuring.
Name	Yes	Text	Enter the name of the classification item.
Code	Yes	Text	Enter the unique code of the classification item.
Is Default	Yes	Boolean	Select the checkbox if this classification item is default.
Valid From	Yes	Invariant Date	Select the date from which the product classification item is valid.
Valid To	Yes	Invariant Date	Select the date until when the product classification item is valid.

The **Banking Products Classification Section** is displayed after saving the classification item record and allows you to insert existing banking products. The following information is displayed here:

Field	Details
Code	The code of the banking product added to the product classification item.
Name	The name of the banking product.
Class	The class of the banking product.
SubClass	The subclass of the banking product.
Category	The category of the banking product.
SubCategory	The subcategory of the banking product.
Status	The status of the banking product record.

Click the **Save and Reload** button at the top right corner of the page.

The screenshot shows the 'Main Information' tab of the Banking Product Factory interface. The form is divided into several sections: 'Main Information' with fields for Banking Product Type (Mortgage), Currency (EUR), Banking Product Code (M_BU), External Code, Start Date (01/03/2022), End Date (31/03/2022), Name (Mortgage test BU), Class, SubClass, Category, and SubCategory. There is also a Description field. Below this is the 'Product Classification' section, which includes buttons for '+ Insert existing' and 'X Remove existing', and a table with columns for Code, Name, Classification Type, Valid From, and Valid To.

IMPORTANT! For mortgage loans, select Banking Product Type = **Mortgage**.

Details

The **Details** tab requires further elements such as general data, payment type, refinancing and guarantees.

BANKING PRODUCT FACTORY USER GUIDE

The screenshot displays the 'Details' tab of the Banking Product Factory application. The top navigation bar includes tabs for Main Info, Details (active), Availability, Dimensions, Product Formula Engine, Documents, Loan Core Settings, History, Origination Elements, and OL Settings. The 'General Data' section contains fields for 'Is Revolving' (checkbox), 'Allow Refinancing' (checkbox, checked), 'Allow Restructuring' (checkbox), 'Allow CoDebtor' (checkbox, checked), and 'Max No. Of CoDebtors' (text input, value 2). The 'Disburse Settings' section includes 'Autodisbursement' (checkbox, checked), 'Max No Disbursements' (text input, value 3), and 'Active Tranche On Doc Submission' (checkbox, checked). The 'Product Tranches' section features a table with columns for Name, Tranche Percent, Start Month From A..., and Interest Percent, with a 'No data' message. The 'Product Guarantees' section includes 'Is Guaranteed' (checkbox, checked), 'Collateral Cover Percent' (text input, value 20), and 'Allow Collateral Partial Release' (checkbox, checked). The 'Payment Schedule Types' section shows 'Period Type' (Months), 'Periodicity Type' (Monthly), 'Grace Type' (none), and 'Product Grace' (text input). The 'Schedule Templates' section has a table with a 'Name' column and a 'No data' message. The 'Holiday Settings' section includes 'Holiday Shift For Repayment Installments' (checkbox, checked), 'Defer Due Date' (checkbox, checked), and 'Holiday Shift Method' (Forward). The 'Country Calendars' section has a table with a 'Name' column and a 'Romania' entry.

General Data Section

For the **General Data** section, the following fields are available:

Field	Required	Data Type	Details
Is Revolving	No	Boolean	Allows a business to borrow money as needed for funding working capital needs and continuing operations such as meeting payroll and payables.
Allow Refinancing	No	Boolean	Select if the account can be refinanced for this product.
Allow Restructuring	No	Boolean	Select if the loan can be restructured.
Allow CoDebtor	No	Boolean	Select if another debtor exists for this product.
Max No. of CoDebtors	No	Text	Set the maximum number of co-debtors possible for this product.

Click the **Save and Reload** button at the top right corner of the page.

Disburse Settings Section

For the **Disburse Settings** section, the following fields are available:

Field	Required	Data Type	Details
Auto Disbursement	Yes	Boolean	Specify if the disbursement is automatically performed when the contract is approved.
Max No Disbursements	No	Whole number	Enter the maximum number of disbursements that can be configured for this product.
Activ Tranche On Doc Submission	No	Boolean	If you select this checkbox, then the tranches are activated (disbursements are created and approved) after certain documents are submitted. It is the Financial Institution's responsibility to verify the content of the submitted documents.

Click the **Save and Reload** button at the top right corner of the page.

Product Guarantees Section

For the **Product Guarantees** section, the following fields are available:

Field	Required	Data Type	Details
Is Guaranteed	Yes	Boolean	<p>This checkbox marks the product as secured or unsecured.</p> <div> <p>NOTE</p> <p>The Collateral Cover Percent and Allow Collateral Partial Release fields and the Allowed Guarantee Types section appear when you select this checkbox.</p> </div>
Collateral Cover Percent	No	Whole number	The percent that the collateral person on the contract pays. It usually is over 100%.
Allow Collateral Partial Release	No	Boolean	A partial release is a mortgage provision that allows some of the collateral to be released from a mortgage after the borrower pays a certain amount of the loan.

Product Guarantees

Is Guaranteed

☒

Collateral Cover Percent

Allow Collateral Partial Release

☐

Allowed Guarantee Types

+ Insert

X Delete

Export

Refresh

☐

Guarantee Type

Max Accepted Covering Percent

Q

Q

FixDeposit

85.00

In the **Allowed Guarantee Types** section, displayed if the **Is Guaranteed** checkbox was selected earlier, you can insert or delete allowed guarantee types. To insert a guarantee type, click the **Insert** button and fill in the name, maximum accepted covering percent, and select the guarantee type.

Add Product Guarantee Structure

Product Guarantee Structure

Banking Product Guarantee Type

Max Accepted Covering Percent Name

Click the **Save and Reload** button at the top right corner of the page.

Product Tranches Section

In the **Product Tranches** section, insert existing disbursement tranches or create new ones, configured to fit the product. Usually used for corporate loans, such dividend payments or cash outflows are not done in equal amounts and usually trigger a recalculation in terms of interest.

Product Tranches

<input type="checkbox"/>	Name	Tranche Percent	Start Month From Acti...	Interest Percent
<input type="checkbox"/>	Tranche 1	50.0000		2.0000
<input type="checkbox"/>	Tranche 2	50.0000		2.0000

Add multiple such disbursements by clicking the **Insert** button. You can add:

- Name.
- Tranche Percent (%): the percentage of the final amount that goes towards the disbursement.
- Start Month From Activation: the start month for the disbursement. It can be any month in the loan availability period.
- Interest Percent (%): the interest percent for that particular disbursement.

- **Unusage Commission Percent (%)**: a commission paid for the loan amount unused.

Click the **Save and Reload** button at the top right corner of the page.

Payment Schedule Types Section

In the **Payment Schedule Types** section, the following fields are available:

Payment Schedule Types

Period Type

Months

Periodicity Type

Monthly

Grace Type

Both

Product Grace

GracePeriod

Field	Required	Data Type	Details
Period Type	No	Option set	<div>Select the period of availability for the product. Choose one:<ul style="list-style-type: none">• Days• Weeks• Months• Years• Once.<div>NOTE The period type must be the same as the measurement unit of the Periodicity Type.</div></div>

Field	Required	Data Type	Details
Periodicity Type	Yes	Option set	<p>Select the regularity of payments. Select one from the following:</p> <ul style="list-style-type: none"> • Once (the whole amount is paid at maturity) • Weekly • Monthly • Bimonthly • Trimestrial • 4 Weeks • Semestrial • Annual • 30Days. <div> <p>NOTE</p> <p>If the measurement unit of the selected Periodicity Type = Days, then Holiday Shift For Repayment Installments = False and it cannot be changed.</p> </div>

Field	Required	Data Type	Details
Grace Type	No	Option set	<p>Select whether the product grace should apply to the principal, the interest, or both. Select an option from the list:</p> <ul style="list-style-type: none"> • Both • Principal • Interest.
Product Grace	No	Option set	<p>Select an option from the list. This is the amount of time that the bank can offer to a customer at the beginning of the contract without repayments of principal or principal + interest (however, most probably the bank capitalizes the interest for that period of time).</p>

Click the **Save and Reload** button at the top right corner of the page.

Schedule Templates Section

In the **Schedule Templates** section, you can associate/ delete payment schedule types to/ from the banking product.

Schedule Templates

☐ Name

+ Insert existing

× Remove existing

Credit Card Installments

One principal installment

To associate a payment schedule type to the banking product, click **Insert Existing** and select one of the already defined types. Go to "[Payment Schedule Types](#)" on page 530 to read more about this.

IMPORTANT!

When creating a new Term Loan, Mortgage, or Overdraft banking product, you must select at least one payment schedule type, otherwise you can't approve the product. If the **Schedule Templates** section has no records, an error message is displayed upon transitioning the product into the **Approved** status: "At least one Payment schedule type definition must be selected for approval!"

Click the **Save and Reload** button at the top right corner of the page.

Holiday Settings Section

In the **Holiday Settings** section, the following fields are available:

Holiday Settings

Holiday Shift For Repayment Installments



Defer Due Date



Holiday Shift Method

Forward



Country Calendars

+ Insert existing

× Remove existing



Name



Romania

Field	Required	Data Type	Details
Holiday Shift For Repayment Installments	Yes	Boolean	<p>This checkbox marks if the holidays are considered for the calculation of the maturity schedule.</p> <div> <p>NOTE</p> <p>The Country Calendars section and the Defer Due Date and Holiday Shift Method fields appear if you select this checkbox.</p> </div>
Defer Due Date	Yes	Boolean	<p>If you select the checkbox, the payment schedule calculates the next payment amount as if the due date has not changed even when the due date falls on a holiday.</p> <p>This checkbox is selected by default.</p>

Field	Required	Data Type	Details
Holiday Shift Method	No	Option set	<p>Select from the list the method to be used when calculating the due date if that date falls to a holiday. The due date can be shifted before or after the holiday.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • None - the due date is not shifted. • Forward - the due date is shifted to the next working day after the initially calculated due date. • Backward - the due date is shifted to the last working day before the initially calculated due date. <p>Default value: Forward.</p>

In the **Country calendars** section, you can insert or delete calendars. You can work with multiple calendars as well. Click the **Insert Existing** button and add the country's name. If the maturity date coincides with a holiday, it is allocated automatically on the next business day.

Click the **Save and Reload** button at the top right corner of the page.

Availability

The **Availability** tab determines the monetary range and the time frame when the product is available for customers.

The following fields are available:

Field	Required	Data Type	Details
Minimum Amount	No	Whole Number	The minimum amount of the product for which the bank opens a contract.
Maximum Amount	No	Whole Number	The maximum amount of the product for which the bank opens a contract.
Minimum Period	No	Whole Number	The minimum duration of the product mentioned in the contract.
Maximum Period	No	Whole Number	The maximum duration of the product mentioned in the contract.
Minimum Advance	No	Whole Number	The minimum down payment that must be paid for the leasing contract to be signed.
Maximum Advance	No	Whole Number	The maximum advance that can be paid for the leasing contract to be signed.
Start Period For Unusage After Activation (Months)	No	Whole Number	The start period for unused amount after the activation.
Maximum Period For Disbursement After Activation (Months)	No	Whole Number	The maximum period (in months) after contract activation during which the disbursement must be made.
Minimum Principal For Early Repayment	No	Whole Number	The minimum principal for when early repayments are made.

Availability Rules Section

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see ["Product Filter"](#) on page 519.

Availability Rules

Product Availability Item Filters

☐ Description

CA >< 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Product Covenants Section

In the **Product Covenants** section you can set certain conventions that applicants must abide by after getting the loan. This is usually applicable for corporate clients that must meet certain requirements in order to continue to receive disbursements.

Product Covenants

<input type="checkbox"/>	Type	Covenant	Valid From	Valid to	Value
	<input type="text"/>	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/>
	Affirmati...	Borrowers should perform tax obligations	19/04/2022	20/04/2030	
	Financial	Lender can monitor borrower's current r...	19/04/2022	20/04/2030	

Click the **Insert** button to add a covenant to the product. Each covenant can be attributed a value, an availability period, and a review frequency in months. Read more about covenants in the ["Covenant" on page 567](#) page.

Click the **Save and Reload** button at the top right corner of the page.

Dimensions

The **Dimensions** tab displays the interests, commissions, insurances, discount and questions valid for a product.

The screenshot displays the 'Dimensions' menu with four sub-sections:

- Interest & Commissions:** Includes an 'Insert' button and a search bar. Below the search bar, the text 'MCA' is visible.
- Insurances:** Includes an 'Insert' button and a search bar. Below the search bar, the text 'House Insurance' is visible.
- Discounts:** Includes an 'Insert' button and a search bar. Below the search bar, the text 'No data' is visible.
- Questions:** Includes an 'Insert existing' button and a search bar. Below the search bar, the text 'Question1' and 'Question2' are visible, along with a 'Business Status' column showing 'Active'.

You can insert, delete or export interest, commissions, insurances, discounts or questions. To add a new one, click **Insert** and fill-in the fields detailed in the sections below.

NOTE

To configure the interest and commissions separately, navigate to **Main > Product Factory > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions Section

Click **Insert** to add an [interest](#) or a [commission](#). In the **Interest & Commission Item** page, fill in the following fields:

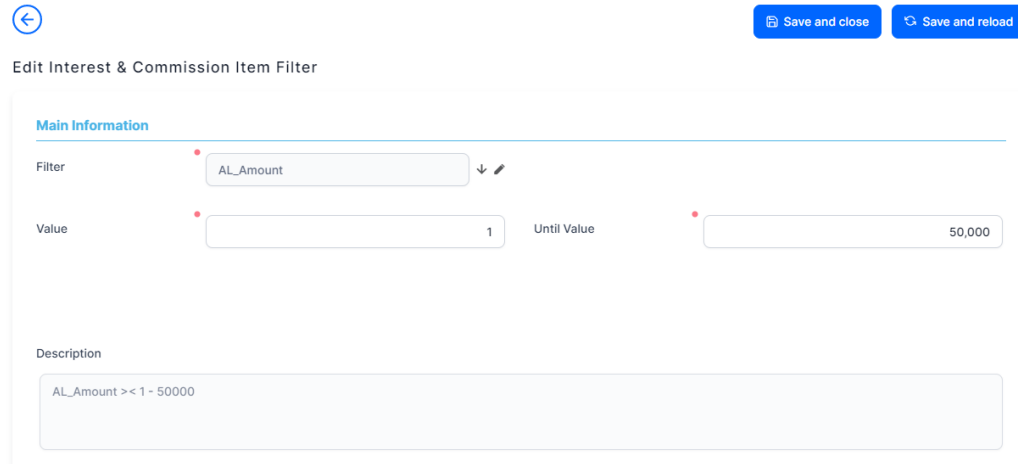
Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Enter a code for this particular interest/ commission.
Item Name	Yes	Text	Enter a name.
Start Date	No	Date	The start date when the interest/ commission becomes effective.
End Date	No	Date	The end date for the interest/ commission.
Interest List	No	Option set	Select from which list the interest is a part of.
Commissions List	No	Option set	Select from which list the commission is a part of.

Field	Required	Data Type	Details
Minimum Interest Rate (%)	No	Numeric	Enter the percent applicable as a minimum interest rate at the contract level.
Is Negotiable	No	Boolean	Select the checkbox to specify that every interest, commission or margin field at the contract level is negotiable and can be edited.

Click the **Save and Reload** button at the top right corner of the page.

In the **Interest & Commission Item Filters** section, click **Insert** to insert an [item filter](#) and fill in the following fields:

Field	Required	Data Type	Details
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Value/ Date	No	Text/Date	Select the beginning value/ date for the filter.
Until Value/ Until Date	No	Text/Date	Select the maximum value/ date for the filter.
Description	No	Text area	This field is automatically filled in after clicking the Save and Reload button. The values/ dates inserted above are turned into an expression.
For Lookup attributes			
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Option Set	No	Option set	It is automatically filled in with the option set name created for the attribute.
Description	No	Text area	It is left blank. Add a description if needed.
Grid of Options	No	Grid	This field is automatically filled in after clicking the Save and Reload button. The values of the option set are displayed. Select the Boolean for the values you wish to include in the filter.



← Save and close Save and reload

Edit Interest & Commission Item Filter

Main Information

Filter AL_Amount ↓

Value 1 Until Value 50,000

Description

AL_Amount > < 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Insurances Section

For any banking product, you can select a pre-existing insurance or create a new one. To add a new [insurance](#), fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Insert a code for this particular insurance.
Item Name	Yes	Text	Insert a name.
Start Date	No	Date	It is the start date when the insurance becomes effective.
End Date	No	Date	It is the end date for the insurance.
Details	No	Text area	It is left blank. Add a description if needed.
Insurance List	No	Option set	Select from which list the insurance is a part of.

Click the **Save and Reload** button at the top right corner of the page.

In the **Insurance Item Filters** section, click **Insert** and fill in the following fields:

Field	Required	Data type	Description
Filter	Yes	Option set	The name inserted earlier.
Value	Yes	Text	The starting value for the attribute.
Until Value	Yes	Text	The ending value of the interval.
Description	No	Text area	Insert the proper description for the availability filter.

Click the **Save and Close** button at the top right corner of the page.

Discounts Section

For any banking product, you can add discounts of any nature. You can select a pre-existing discount or create a new one.

Click the **Insert** button to add a new **discount**. In the **Details** page, fill in the following fields:

Field	Required	Data Type	Details
Name	Yes	Text	Insert the appropriate name for the discount.
Discount	No	Option set	Choose one of the pre-configured types of discounts or create a new one. According to the selected type, new fields appear on the page requiring to be filled in.
Value discount	No	Numeric	Insert the value of the discount to be applied, e.g. 15.

Field	Required	Data Type	Details
Start date	Yes	Date	It is the start date when the discount becomes effective.
End date	Yes	Date	It is the end date for the discount.
Applied to dimension	No	Option set	Specifies for which product dimension this discount is applicable (interest, commission or insurance). This is autocompleted by the selected discount's dimension.
Commission type	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount. Specifies for which commission type this discount is applicable. This is autocompleted by the selected discount's default commission type.
Commission	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount. Specifies for which commission this discount is applicable. This is autocompleted by the selected discount's default commission.
Insurance class	No	Lookup	This field appears if the selected discount = Discount Life Insurance or Interest Discount. Specifies for which insurance class this discount is applicable (credit, home, life or other insurance class). This is autocompleted by the selected discount's insurance class.

Field	Required	Data Type	Details
Insurance	No	Lookup	This field appears if the selected discount = Discount Life Insurance. Specifies for which insurance this discount is applicable. This is autocompleted by the selected discount's insurance.
Interest type	No	Lookup	This field appears if the selected discount = Interest discount. Specifies for which interest type this discount is applicable.
Use Banking Formula	No	Boolean	If you select this checkbox, the discount is calculated using the Banking Formula engine.
Is optional discount?	No	Boolean	Selecting this checkbox results in the discount being applied only if the customer agrees to the discount.
Is percentage	No	Boolean	If you select this checkbox, the discount is calculated as a percentage from the contract's amount.
Destination entity	No	Option set	Select the entity where to register the discount. This field opens when the Is optional discount? checkbox is selected.
Destination entity attribute	No	Option set	Select the attribute where to register the discount. This field opens when the Is optional discount? checkbox is selected.

Click the **Save and Reload** button at the top right corner of the page.

In the **Product Discount Item Filter** section, click **Insert** and fill in the fields as specified in the **Product Filter page**. The fields displayed depend on the selected filter.

Click the **Save and Reload** button at the top right corner of the page.

Questions Section

Choose one or more questions to add to the banking product, or insert a new one.

To insert a new [question](#), click **Insert existing**, then click **Insert**. In the **Add Banking Product Question** page, fill in the following fields:

Field	Required	Data type	Description
Question	No	Text	Enter the appropriate name.
Answer Type	No	Option set	Select the type of answer the customer has to give: <ul style="list-style-type: none"> • text • numeric • option set.
Answer Entity	No	Option set	Select the entity where the answer is stored.
Answer Field	No	Option set	Select the attribute where the answer is stored.

Click the **Save and Reload** button at the top right corner of the page.

The **Banking Products List** shows where the question is used.

IMPORTANT!

The question has to be activated in order for it to be added to the banking product.

Click the **Save and Close** button at the top right corner of the page.

For example, this is how a question is displayed in a digital journey in the FintechOS Portal:

The screenshot shows a web application window titled "EDIT LOAN APPLICATION". Inside, there's a section titled "Eligibility Questions" with the text "We ask for this information so that we can carry out the checks needed to consider you for a mortgage". Below this, there are three fields: "DEPOSIT SOURCE" with a dropdown menu showing "Select...", "RETIREMENT DATE" with a date picker, and "RETIRED" with radio buttons for "Yes" and "No" (the "No" button is selected). A "Finish" button is located at the bottom right of the form.

Product Formula Engine

The **Product Formula Engine** tab keeps formulas built with [Formula Engine](#) for the banking product. Such formulas can be used to determine the eligibility of a customer.

The screenshot shows the "Product Formula Engine" tab in a web application. It has two main sections: "Banking Product Formulas" and "Test Scenarios". Each section has a table with columns for "Name", "Formula Type", and "Formula". In the "Banking Product Formulas" section, there is one row with "CA" as the name, "CommissionFormula" as the type, and "commissionByAmount" as the formula. In the "Test Scenarios" section, there is one row with "Duplicate-19-04-2022,11:07:57" as the name and "CommissionFormula" as the type. Both sections have buttons for "Insert", "Delete", "Export", and "Refresh".

Banking Product Formulas Section

In the **Banking Product Formulas** section, choose an already defined formula or click **Insert** to configure a new one, for example a formula for eligibility or scoring purposes. For information on how to build a formula, see [Define Formula Inputs](#).

In the **Add Banking Product Formula** page, fill in the following fields:

The screenshot shows the "Add Banking Product Formula" page. It has a "Main Information" section with four fields: "Name" (containing "CA"), "Banking Product" (containing "Duplicate"), "Formula Type" (containing "CommissionFormula"), and "Formula" (containing "commissionByAmount"). There is a "Data Mapping" field below these, containing "BPFormulaType_Test Formula_3647267821582_formula". At the top right, there are two buttons: "Save and close" and "Save and reload". At the bottom right, there is a "Map Data" button.

Field	Required	Data type	Description
Name	Yes	Text	Enter an appropriate name.
Banking Product	No	Option set	The name of the banking product is inserted automatically.
Formula Type	Yes	Lookup	Select the type of formula configured before, e.g. scoring /eligibility.
Formula	Yes	Lookup	Select the previously configured formula. IMPORTANT! The formula must be activated before attaching it to a product.
Data Mapping	No	Lookup	Select the previously configured data mapping.

After selecting the desired formula, click **Save and reload**, then click **Map Data**.

← Save and close Save and reload

1 Definition 2 Input 3 Output

Formula parameter mapping

Data Mapping Type Banking Product

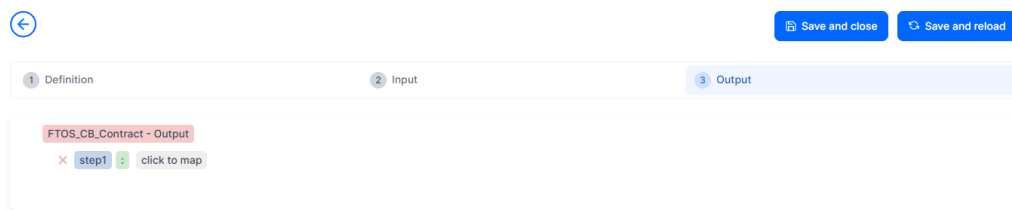
Master Entity FTOS_CB_Contract

Operation Name test

Name BPFormulaType_Test Formula_1647267821582_formula

In the **Formula Mapping** page, click **Input** and configure the input data for the formula.

Click **Output** and configure the output for the formula.



Click the **Save and Close** button at the top right corner of the page.

Such formulas can be used in digital journey steps, for example when the customer inserts their financial data.

Test Scenarios Section

A good practice is to test the formula before displaying it in a digital journey. You can do that in the **Test Scenarios** section.

Click **Insert** to open the **Add Test Scenario** page.

Insert a **Test Scenario Type** from the option set. The keys and the values are shown. Click the **Save and Reload** button at the top right corner of the page.

Click the **Calculate** button. The outputs are displayed in the **Test Scenario Outputs** section. These outputs can be saved by selecting the **Save Output Data** checkbox next to **Calculate**.

Documents

The **Documents** tab contains all the attached documents available for a product.


Banking Product Documents Section

The previously associated documents are displayed in the **Banking Product Documents** section.

To attach a new document to the banking product, click **Insert** and fill in the following fields:

Field	Data Type	Description
Operation Code	Whole number	Enter a code for the document.

Field	Data Type	Description
Banking Copies No	Whole number	Insert the number of copies made.
Report	Lookup	Select a document from the list.
Document Type	Option set	Select a document type from the list.
Is Mandatory	Boolean	Select if the document is mandatory.
Includes Debtor	Boolean	Select if the document includes the debtor.
Includes Coborrower	Boolean	Select if the document includes the co-borrower.
Requires Signature	Boolean	Select if the document requires to be signed.
Is accord	Boolean	Select if the document represents the accord.


Save and close Save and reload Save and new

Add Banking Product Document

Banking Product Document

Operation Code: Banking Copies No: Report: Document Type:

Is Mandatory: ☒ Yes ☐ No Includes Debtor: ☐ Yes ☒ No Includes Coborrower: ☐ Yes ☒ No Requires Signature: ☐ Yes ☒ No

Is Accord: ☐ Yes ☒ No

Click the **Save and Close** button at the top right corner of the page.

Banking Products Agreements Section

The agreements that a customer needs to go through are displayed in the **Banking Products Agreements** section.

To attach a new agreement to the banking product, click **Insert** and fill in the following fields:

Field	Required	Data Type	Description
Agreements	Yes	Option set	Select an agreement from the list.
Banking Product	Yes	Option set	It is automatically filled in.
Code	No	Whole number	Insert the corresponding code.
Is Mandatory	No	Boolean	Select if the agreement is mandatory for the product.

Edit Banking Product Agreement

Save and close Save and reload

Main Information

Agreement Code Banking Product Is Mandatory

Popescu Broker + AGR SLICE Loan + ✓

Click the **Save and Close** button at the top right corner of the page.

For more information on how to configure a contract or an agreement, see the [Digital Document Processor](#).

Lean Core Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

Transactions types that are performed to and from a banking product are displayed in the **Lean Core Settings** tab. The tab also holds information about the reconciliation account associated with the products, mandatory roles for contract approval, payment allocation settings, the treatment of returned goods for contracts based on this banking product (only for Term Loans and Mortgage banking products), and closing contract settings.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Product Formula Engine 6 Documents 7 Lean Core Settings 8 History 9 Origination Elements 10 GL Settings

Self Bank Account Associated With The Product

Reconciliation Account Negative balance treatment

Reconciliation EUR NoMessage

Mandatory Roles for Contract Approval

+ Insert X Delete Export Refresh

Role Search Limit

Beneficiary

Closing Contract Settings

Buffer Close Days Close Real Time Closing Is Flexible

15

Contract Is Closed Automatically

Payment Allocation Settings

Repayment Allocation Method Grace Days for Repayment Penalty for grace period

CostOrder

Allowed Transactions

+ Insert existing X Remove existing

Name

Top Up Account

Transfer between my bank accounts

Withdraw

Self Bank Account Associated With The Product Section

For each banking product, you must select a reconciliation account, which is the bank account to be used for transactions.

Self Bank Account Associated With The Product

Reconciliation Account	Negative balance treatment
<div>Reconciliation EUR</div> <div>↓</div>	<div>NoMessage</div> <div>▼</div>

Next to the **Reconciliation Account** field, select a value from the list to be the current account from which or to which the money is wired from or to.

NOTE

This account must have the same currency as the product, because the translations are performed from and into this account.

Select a value for the **Negative Value Treatment** drop-down to specify how Core Banking treats situations when the funds of the reconciliation account associated with the banking product used in the contract would go below zero if a disbursement event would be approved. The possible values are:

- **Error** - there is an error message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can't be approved and the balance can't go below zero. Select this value if you want to block any transactions that would result in a negative balance of the reconciliation account associated to the banking product.
- **Warning** - there is a warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can be approved and the balance can go below zero.

- **NoMessage** - there is no error or warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account. The event can be approved and the balance can go below zero.

NOTE

Core Banking also has a system parameter, **ReconciliationAccountTreatment**. That is a system-wide setting, applicable to events for contracts based on all banking products without a specified **Negative balance treatment** value. Core Banking takes into consideration the settings used at the banking product level (the **Negative balance treatment** field's value). Thus, if the value is specified at the banking product level, then that value takes precedence over the system parameter's setting.

If you associate the same reconciliation account to more than one banking product, then the setting selected in banking product A is applied for contract events based on banking product A, while for the banking product B, Core Banking would apply the setting selected at the level of banking product B.

Payment Allocation Settings Section

This section holds the payment allocation settings. This is where you can decide which allocation method should be used to determine the order in which credit items are prioritized when repaying loans, credit accounts, and so on. You can also define the grace period settings.

Payment Allocation Settings

Repayment Allocation Method	Grace Days for Repayment	Penalty for grace period
CostOrder	5	<input type="checkbox"/>

Fill in the following fields:

Field	Required	Data Type	Details
Payment Allocation Method	No	Lookup	The payment allocation method represents the recovery order of amounts from payment notifications. Select a payment allocation method from the list.
Grace Days for Repayment	No	Whole number	Insert the number of days for which the bank expects a payment without calculating penalty.
Penalty for grace period	No	Boolean	If you select the checkbox, the penalty interest is applied on the loan contract without taking into consideration the grace period defined at contract level, being calculated for the difference between system date - due date, if the grace period passed and the customer didn't pay the due amounts. If you leave this checkbox unselected, the penalty interest is applied on the loan contract taking into consideration the grace period defined at contract level, being calculated for system date - due date + grace days for repayment.

Click the **Save and Reload** button at the top right corner of the page.

Mandatory Roles for Contract Approval Section

The **Mandatory Roles** section allows you to add the roles of the participants that are mandatory to exist at the contract level for contracts based on this banking product. In other words, when creating contracts based on banking products with Merchant role in this section, you must add a customer with the same Merchant role as contract participant, otherwise, the contract cannot be approved. When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role, in this case Merchant Exposure.

Mandatory Roles for Contract Approval

+ Insert

×

Delete

Export

Refresh

Role

Search Limit

Q

(All)

Beneficiary

In the **Mandatory Roles** section, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Lookup	The banking product for which you define mandatory roles. This is automatically completed with the current banking product.
Role	Yes	Option Set	Select the role of the participants that are mandatory to exist at the contract level for contracts based on this banking product.
Search Limit	Yes	Boolean	When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role. If you select a role not associated with a customer limit type in Core Banking, the Search Limit field becomes read-only and unselected.

Save and close

Save and reload

Save and new

←

Add Mandatory Role

Main Information

Banking Product

Duplicate

Role

Merchant

Search Limit

✓

Click the **Save and Reload** button at the top right corner of the page.

MANAGING BANKING PRODUCTS

347

Return Of Goods Section**IMPORTANT!**

This section is displayed only for **Term Loan** and **Mortgage** banking products.

The fields within this section allow you to define whether a contract based on the banking product can have **Returned Amount** or **Goods** transactions or not, and the specific conditions for these transactions. The **Returned Amount** or **Goods** transaction type can be used when a customer returns all or part of a loan or mortgage in a short while after contract creation, if the banking product was defined to allow such transactions. You can set up **Return Fee** type commissions, to return all or some of the claimed commission to the borrower.

To configure the treatment of returned goods for contracts based on this banking product, fill in the following fields:

Field	Required	Data Type	Details
Allow Return Of Goods	Yes	Boolean	Select this checkbox if the contracts based on this banking product accept Return of Goods transactions. Default value: False. If selected, the Accepted Days For Return and Return Message fields are displayed, otherwise, these fields are not visible.
Accepted Days For Return	Yes	Whole Number	Specify the number of days after contract creation during which the return of goods transaction can be created and approved.

Field	Required	Data Type	Details
Return Message	Yes	Option Set	<p>Select the behavior of messages generated by Core Banking for situations when the Returned Amount or Goods transaction's approval date + the number of accepted days for return \geq the current date. Possible values are taken from the Warning Error Treatment option set. According to the desired behavior, choose:</p> <ul style="list-style-type: none"> • Error, if the transaction should not be approved and an error message should be displayed; • Warning, if the transaction can be approved, but a warning message should be displayed; • NoMessage, if the transaction can be approved without any messages.

Return Of Goods

Allow Return Of Goods



Accepted Days For Return

Return Message

Click the **Save and Reload** button at the top right corner of the page. If Allow Return Of Goods = True, then the Returned Amount of Goods transaction is automatically added to the **Transaction Types** section.

Closing Contract Settings Section

IMPORTANT!

This section is displayed only for **Term Loan** and **Mortgage** banking products.

In the **Closing Contract Settings** section, you can configure the default closure settings for contracts based on this banking product.

Closing Contract Settings

Buffer Close Days

10

Close Real Time

☐

Closing Is Flexible

☒

Contract Is Closed Automatically

☒

Fill in the following fields:

Field	Required	Data Type	Details
Buffer Close Days	No	Whole Number	Enter the number of days used as buffer before automatically closing the contract when the contract reaches maturity and its balance reaches zero. If Buffer Close Days > 0, then Contract Is Closed Automatically = False.

Field	Required	Data Type	Details
Close Real Time	No	Boolean	If you select this checkbox, the contract based on this banking product is closed in real-time, when the contract reaches maturity and its balance reaches zero, without waiting for the end of day processes. If Close Real Time = True, then Buffer Close Days = 0 and Contract Is Closed Automatically = True.
Closing Is Flexible	No	Boolean	If you select this checkbox, the closure details of the contract based on this banking product can be modified at the contract creation.
Contract Is Closed Automatically	No	Boolean	If you select this checkbox, the contract based on this banking product is closed automatically at maturity, if the balance reaches zero. If Contract Is Closed Automatically = False, then Close Real Time = False.

Click the **Save and Close** button at the top right corner of the page.

Allowed Transactions Section

In the **Allowed Transactions** section, you can associate possible transaction types with the selected banking product. Click **Insert existing** and select the desired transaction types.

Double-click a selected transaction type to edit it.

Transaction Configuration

Save and close

Save and reload

Edit Transaction Type

Settings

Name

Disbursement

Transaction Code

DSB

Process Type

Disbursement

Edit Form

FTOS_CB_EventDisbursement

Transaction Operation Type

Disbursement

Is System Transaction

☐

Is Automatic Transaction

☐

Real Time Process

☐

Only One Draft

☒

Generate New Contract Version

☐

Commission Type

Return Commission Type

Accounting Configurations

Generates Accounting Entry

☒

OL Master Entity

FTOS_CB_ContractEvent

Purge Configurations

To Be Purged

☒

Purge Number of Days

30

Master Purge Entity

FTOS_CB_ContractEvent

Transaction Value Types

+ Insert

X Delete

Export

Refresh

☐ Transaction Type

Type

Value Type Name

Is Header

Value Type Attrib...

(All)

Transaction Item Accounting Configurations

+ Insert

X Delete

Export

Refresh

☐ Transaction...

Accountin...

Accountin...

Chart Acc...

Currency

Operation...

Take From...

In the **Edit Transaction Type** section, fill in the following fields:

Field	Required	Data Type	Details
Settings			
Name	Yes	Text	Name of the transaction type.
Transaction Code	Yes	Text	The code of the transaction type.
Is Automatic Transaction	Yes	Boolean	This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations.
Is System Transactions	No	Boolean	This checkbox marks the transaction as being neither a credit of the account, nor an allocation of funds, but a transaction that does not influence other transactions within the account. System transactions are meant to be used only for accounting.

Field	Required	Data Type	Details
Real Time Process		Boolean	This checkbox marks the transaction as to be processed in real-time. If the value is True, then the transaction is processed right away. If the value is False, then the transaction is inserted as a bank account transaction queue record.
Edit Form	No	Lookup	The form used to edit this transaction type. The lookup only shows forms defined on the Contract Event entity.
Only One Draft	No	Boolean	If you select this checkbox, there can be only one record of this transaction type in Draft status created at the contract level.
Generate New Contract Version	No	Boolean	This checkbox allows you to specify if a new contract version should be generated by this transaction type.
Commission Type	No	Lookup	The commission type applicable for this transaction type. Return fee commissions are filtered out and can't be selected.
Return Commission Type	No	Lookup	The return fee commission type applicable for this transaction type. Only return fee commissions can be selected.

Field	Required	Data Type	Details
Process Type	Yes	Option set	<p>This field associates the process type with the transaction operation type, which makes the connection with the transaction motor of bank accounts. Select one of the processes defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div>
Accounting Configurations			
Generates Accounting Entry	Yes	Boolean	This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity.
OL Master Entity	Yes	Lookup	The entity referenced by the accounting systems.
Purge Configurations			
To Be Purged	No	Boolean	This checkbox marks the transaction as purgeable. If selected, it allows you to purge or archive records in Draft status.
Purge Number of Days	Yes	Whole Number	The default number of calendar days that a record can be kept in Draft status before it is purged. For additional information, see the Core Banking System Parameters page. This field is displayed only when To Be Purged = True.

Field	Required	Data Type	Details
Master Purge Entity	Yes	Lookup	The master purge entity under which the draft records are. This field is displayed only when To Be Purged = True.

You can also edit the information in the **Transaction Value Types**, **Transaction Item Accounting Configurations** and **Transaction Accounting Models** sections. Read more details about Transaction Types in the **Operational Ledger** User Guide.

Click the **Save and Close** button at the top right corner of the page.

The following transaction types are typically used for mortgage loans:

- **Accruals and Provisions** - System transaction. If added at banking product level, the accruals and provisions for contracts can be calculated on a daily basis.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Disbursement** - If added at banking product level, the requested funds are transferred into the customer's account.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Early repayment** - If added at banking product level, the customer can make a payment earlier than the stated maturity date of the contract.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **LoanContract** - If added at banking product level, the loan contract accounting entries are generated automatically by the system when the contract is approved.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Payment Holiday** - If added at banking product level, the official bank holidays are considered when calculating a payment schedule.
This transaction type is not added automatically. Make sure you insert

it in the **Associated Transactions** tab.

- **Repayment** - If added at banking product level, the customer can make a payment to cover the scheduled repayment amount.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Repayment Notification** - If added at banking product level, the system generates and displays in the contract a repayment notification after each disbursement, containing the total amount to be paid off.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Returned Amount or Goods** - If added at banking product level, the **Returned Amount of Goods** transaction type can be used when a customer returns all or part of a loan in a short while after contract creation. You can set up **Return Fee** type commissions, to return all or some of the claimed commission to the borrower.
This transaction type is not added automatically. Make sure you select the **Allow Return Of Goods** checkbox in the **Return of Goods** section within the **Associated Transactions** tab.
- **Reschedule Overdues** - If added at banking product level, the system extends or adds extra time to an existing contract.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Reschedule Debt** - If added at banking product level, the system recalculates the entire payment schedule by extending the time period for loan repayment.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Revert Disbursement** - If added at banking product level, disbursements performed at contract level can be reverted after being performed.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Revert Transfer between my bank accounts - System** transaction. If added at banking product level, transfers between the same customer's bank account can be reverted after being performed. This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Transfer between my bank accounts -** If added at banking product level, the customer is allowed to move funds between their accounts at the contract level.
This transaction type is automatically added in the **Associated Transactions** tab if **Allow Withdrawals** was selected in the [Details](#) tab.

History

The **History** tab displays the versions of the banking product, their workflow status and the user who modified the product.

Label	Name	attributeVersionDate	attributeVersion	Modified by user
Draft	Duplicate	19/04/2022 10:29	1	

Here you can track the product's life cycle and review older versions that are no longer active (for details, see ["Banking Products' Life Cycle"](#) on page 595).

Origination Elements

The **Origination Elements** tab holds the elements required in origination journey, such as product benefits, display conditions, features, destination types, or associated products.

You can fill in the following fields:

Field	Required	Data Type	Details
Product Image	No	File	Insert an image representative for the product.
Document	No	File	Insert the document representative for the product.
Benefits	No	Text area	Insert the advantages of owning the banking product. You can format the text in the text editor window.
Display Conditions	No	Text area	Insert the conditions for the applicant, e.g. age limit, annual turnover, education level, income, registration documents.

Click the **Save and Reload** button at the top right corner of the page.

Product Features Section

In the **Product Features** section, you can insert, delete or export features. To add a feature, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Feature	No	Text	Enter the name of the product feature.
Is Main Feature	No	Boolean	Select the checkbox if it is the major feature.
Display Name	No	Text	Enter the display name of the feature.

Click the **Save and Reload** button at the top right corner of the page.

Product Destination Types Section

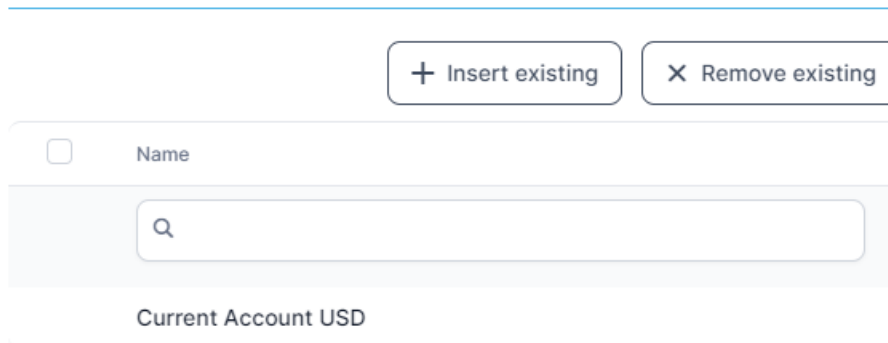
The **Product Destination Types** section allows for insertion or removal of existing product destination types. Click **Insert existing** and select one of the existing destination types, or insert a new one. To create a new destination type, insert a name and specify if it is default. For this case, the following have been configured:

- Loan Collateral
- Loan disbursements
- Personal
- Repayments.

Associated Products Section

The **Associated Products** section allows for insertion or removal of existing products. It is especially useful when you wish to create a link between two products. You can insert or remove a product from the list or create a new one.

Associated Products



The interface for the 'Associated Products' section includes a header with two buttons: '+ Insert existing' and 'X Remove existing'. Below the buttons is a table with a 'Name' column. The first row of the table shows 'Current Account USD'.

Click the **Save and Reload** button at the top right corner of the page.

GL Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

In the **Banking Product GL Accounts** section, you can set specific accounts to be used by the **Operational Ledger** system for transactions performed on contracts based on this banking product. Thus, you can overwrite the generic settings of the Operational Ledger, instructing it to use the accounts specified at banking product level.

To add specific accounts to be used by **Operational Ledger**, click **Insert** and fill in the following fields in the displayed **Add Banking Product GL Account** page:

Field	Required	Data Type	Description
Product	Yes	Option set	Select from the list the banking product. Automatically completed with the banking product you are currently editing.
Accounting System	Yes	Option set	Select from the list the desired accounting system. The list contains the records created in the FTOS_GL_AccountingSystem entity.
Accounting Scope	Yes	Option set	Select from the list the corresponding accounting scope. The list contains the records created in the FTOS_GL_AccountingScope entity.

Field	Required	Data Type	Description
Item	No	Option set	Select from the list the corresponding transaction item. The list contains the records created in the FTOS_GL_TransactionItemAccountingConfig entity.
GL Account	Yes	Option set	Select from the list the corresponding GL account. The list is filtered based on the previously selected accounting system. It contains the accounts defined in the FTOS_GL_AccountingChart entity that were added to the chosen accounting system record.

Click the **Save and Reload** button at the top right corner of the page.

Overdrafts

An overdraft is an extension of credit from a lending institution that is granted when an account reaches zero. The overdraft allows the account holder to continue withdrawing money even when the account has no funds in it or has insufficient funds to cover the amount of the withdrawal.

To manage banking products:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, click **Product Factory**.

4. Click **Banking Products** to open the **Banking Products List** page.

Code	Name	Class	SubClass	Category	SubCategory	Status	
SLICE	SLICE Loan					Approved	1
SL_BU	Slice BU					Approved	1
TLTL2	TLTL2 - Term loan Eur					Approved	1
M_BU	Mortgage test BU					Draft	1

On the **Banking Products List** page, you can:

- Add a new banking product by clicking the **Insert** button at the top right corner.
- Edit an existing banking product from the list by double-clicking it.
- Delete a banking product by selecting it and clicking the **Delete** button at the top right corner.

NOTE

For banking products in **Active** status, you can't change any of their related entities (such as features, discounts, product guarantee, interest or commission item, formula, test scenario, product covenant, product disbursement, product availability item filter). To change any of the product's related entities, create a new version of the banking product record.

Creating Overdrafts

To create a new banking product, click the **Insert** button on the top right side of the page. A new page opens, with a series of tabs that assist you in configuring the banking product:

1. **Main Info** - The first tab requires the basic elements for the creation of a product such as product type, name, code, hierarchy and features.
2. **Details** - This tab requires further elements that build on the first tab such as payment type, top-ups, withdrawals and associated products.

3. [Availability](#) - This tab determines the monetary range and the time frame when the product is available for customers.
4. [Dimensions](#) - This tab displays the interests, commissions, insurances, discounts and questions valid for a product.
5. [Product Formula Engine](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Documents](#) - This tab contains all the attached documents available for a product.
7. [Lean Core Settings](#) - This tab holds Core Banking related settings, such as transactions that are done to and from a banking product, reconciliation account associated with the product, mandatory roles for contract approval, payment allocation settings, or closing contract settings are found in this tab.
8. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
9. [Origination Elements](#) - This tab holds the elements required in origination journeys, such as product benefits, display conditions, features, destination types, or associated products.
10. [GL Settings](#) - This tab contains the accounts to be used by Operational Ledger for transactions performed on contracts based on this banking product.

Main Info

The **Main Info** tab requires the basic elements for the creation of a product such as name, code, currency, validity, or product classification.

The following fields are available:

Field	Required	Data Type	Details
Main Information			

Field	Required	Data Type	Details
Banking Product Type	Yes	Option Set	<p>Choose one for the following:</p> <ul style="list-style-type: none"> • Bank Account • Card • Credit Card • Deposit • Leasing • Mortgage • Overdraft • Term Loan <div> NOTE Your product type selection greatly influences the next steps. It is important to choose the right type of product to build. </div>
Currency	Yes	Lookup	Choose the currency for this banking product.
Banking Product Code	Yes	Text	Enter the code of the product. It can have 10 characters and it is used in the contract. It uses a sequencer and the code of the product type.
External Code	No	Text	The code of the product imported from an external system, if applicable. It can have 10 characters and it is not used in the contract.

Field	Required	Data Type	Details
Start Date	Yes	Date	Select the date when the product becomes available.
End Date	Yes	Date	Select the last date from when the product is available. From that date forward, the product is no longer available.
Name	Yes	Text	Enter the name of the product.
Class	No	Option set	Select the class of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Subclass	No	Option set	Select the subclass of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Category	No	Option set	Select the category of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
SubCategory	No	Option set	Select the subcategory of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Description			
Description	No	Text area	Write any description or additional text here.

Click the **Save and Reload** button at the top right corner of the page.

Product Classification Section

In the **Product Classification** section, you can insert or remove existing product classification items. To add a product classification item, click **Insert Existing** and select an already existing item.

Product Classification

+ Insert existing ✕ Remove existing

<input type="checkbox"/>	Code	Name	Classification Type	Valid From	Valid To
	<input type="text" value="REG1"/>	<input type="text" value="Classification ..."/>	<input type="text" value="Regulatory"/>	<input type="text" value="01/01/2020"/>	<input type="text" value="31/12/2030"/>

You can also create a new product classification item by clicking **Insert**. On the newly displayed **Add Product Classification** page, fill in the following fields:

←
✓
Save and close
Save and reload
Save and new

Add Product Classification

Main Information

Name	Code	Valid From	Valid To	Classification Type	Is Default
<input type="text" value="Reg 2"/>	<input type="text" value="REG2"/>	<input type="text" value="18/04/2022"/>	<input type="text" value="30/04/2029"/>	<input type="text" value="Regula..."/>	<input type="checkbox"/>

Classified Banking Products

Field	Required	Data Type	Details
Classification Type	Yes	Option set	Choose the classification type of the item. Possible values: Regulatory, Restructuring.
Name	Yes	Text	Enter the name of the classification item.
Code	Yes	Text	Enter the unique code of the classification item.
Is Default	Yes	Boolean	Select the checkbox if this classification item is default.
Valid From	Yes	Invariant Date	Select the date from which the product classification item is valid.
Valid To	Yes	Invariant Date	Select the date until when the product classification item is valid.

The **Banking Products Classification Section** is displayed after saving the classification item record and allows you to insert existing banking products. The following information is displayed here:

Field	Details
Code	The code of the banking product added to the product classification item.
Name	The name of the banking product.
Class	The class of the banking product.
SubClass	The subclass of the banking product.
Category	The category of the banking product.
SubCategory	The subcategory of the banking product.
Status	The status of the banking product record.

Click the **Save and Reload** button at the top right corner of the page.

IMPORTANT! For overdrafts, select Banking Product Type = **Overdraft**.

The screenshot shows the 'Main Information' tab of the Banking Product Factory interface. At the top, there is a navigation bar with tabs: 1 Main Info, 2 Details, 3 Availability, 4 Dimensions, 5 Product Formula Engine, 6 Documents, 7 Loan Core Settings, 8 History, 9 Origination Elements, and 10 GL Settings. The 'Main Information' section contains several input fields: 'Banking Product Type' (set to 'Overdraft'), 'Currency' (set to 'EUR'), 'Banking Product Code' (set to 'odv'), 'External Code' (empty), 'Start Date' (18/03/2022), 'End Date' (15/03/2023), 'Name' (set to 'odv'), 'Class' (empty), 'SubClass' (empty), 'Category' (empty), and 'SubCategory' (empty). Below these fields is a 'Description' text area. To the right of the description is the 'Product Classification' section, which includes a table with columns: Code, Name, Classification Type, Valid From, and Valid To. Above this table are buttons for '+ Insert existing' and 'X Remove existing'.

Click the **Save and Reload** button at the top right corner of the page.

Details

The **Details** tab requires further elements such as payment type, top-ups and withdrawals.

The screenshot shows the 'Details' tab of the Banking Product Factory interface. It contains several sections for configuring a product:

- General Data:** Includes checkboxes for 'Is Revolving' (checked), 'Allow Refinancing', 'Allow Restructuring' (checked), and 'Allow CoDebtor'. A text field for 'Max No. Of CoDebtors' is also present.
- Disburse Settings:** Includes a checkbox for 'Autodisbursement' and a text field for 'Max No Disbursements'.
- Product Guarantees:** Includes a checkbox for 'Is Guaranteed'.
- Payment Schedule Types:** Includes dropdowns for 'Period Type' (Months), 'Periodicity Type' (Monthly), 'Grace Type' (Principal), and 'Product Grace' (GracePeriod).
- Schedule Templates:** Includes a search bar and buttons for '+ Insert existing' and 'X Remove existing'.
- Holiday Settings:** Includes checkboxes for 'Holiday Shift For Repayment Installments' (checked) and 'Defer Due Date' (checked), and a dropdown for 'Holiday Shift Method' (Forward).
- Country Calendars:** Includes a search bar and buttons for '+ Insert existing' and 'X Remove existing'.

General Data Section

For the **General Data** section, the following fields are available:

Field	Required	Data Type	Details
Is Revolving	No	Boolean	Allows a business to borrow money as needed for funding working capital needs and continuing operations such as meeting payroll and payables.
Allow Refinancing	No	Boolean	Select if the account can be refinanced for this product.
Allow Restructuring	No	Boolean	Select if the loan can be restructured.
Allow CoDebtor	No	Boolean	Select if another debtor exists for this product.
Max No. of CoDebtors	No	Text	Set the maximum number of co-debtors possible for this product.

Click the **Save and Reload** button at the top right corner of the page.

Disburse Settings Section

For the **Disburse Settings** section, the following fields are available:

Field	Required	Data Type	Details
Auto Disbursement	Yes	Boolean	Specify if the disbursement is automatically performed when the contract is approved.
Max No Disbursements	No	Whole number	Enter the maximum number of disbursements that can be configured for this product.
Activ Tranche On Doc Submission	No	Boolean	If you select this checkbox, then the tranches are activated (disbursements are created and approved) after certain documents are submitted. It is the Financial Institution's responsibility to verify the content of the submitted documents.

Click the **Save and Reload** button at the top right corner of the page.

Product Guarantees Section

For the **Product Guarantees** section, the following fields are available:

Field	Required	Data Type	Details
Is Guaranteed	Yes	Boolean	<p>This checkbox marks the product as secured or unsecured.</p> <div> <p>NOTE</p> <p>The Collateral Cover Percent and Allow Collateral Partial Release fields and the Allowed Guarantee Types section appear when you select this checkbox.</p> </div>

Field	Required	Data Type	Details
Collateral Cover Percent	No	Whole number	The percent that the collateral person on the contract pays. It usually is over 100%.
Allow Collateral Partial Release	No	Boolean	A partial release is a mortgage provision that allows some of the collateral to be released from a mortgage after the borrower pays a certain amount of the loan.

Product Guarantees

Is Guaranteed

☒

Collateral Cover Percent

Allow Collateral Partial Release

☐

Allowed Guarantee Types

+ Insert

X Delete

Export

Refresh

<input type="checkbox"/>	Guarantee Type	Max Accepted Covering Percent
<input type="text" value="Q"/>	<input type="text" value="Q"/>	
FixDeposit		85.00

In the **Allowed Guarantee Types** section, displayed if the **Is Guaranteed** checkbox was selected earlier, you can insert or delete allowed guarantee types. To insert a guarantee type, click the **Insert** button and fill in the name, maximum accepted covering percent, and select the guarantee type.

Add Product Guarantee Structure

Product Guarantee Structure	
Banking Product	Guarantee Type
Card	FixDeposit
Max Accepted Covering Percent	Name
85	Deposit

Click the **Save and Reload** button at the top right corner of the page.

Payment Schedule Types Section

In the **Payment Schedule Types** section, the following fields are available:

Payment Schedule Types

Period Type

Months

Periodicity Type

Monthly

Grace Type

Both

Product Grace

GracePeriod

Field	Required	Data Type	Details
Period Type	No	Option set	<div>Select the period of availability for the product. Choose one:<ul style="list-style-type: none">DaysWeeksMonthsYearsOnce.</div> <div><div>NOTE</div><div>The period type must be the same as the measurement unit of the Periodicity Type.</div></div>

Field	Required	Data Type	Details
Periodicity Type	Yes	Option set	<p>Select the regularity of payments. Select one from the following:</p> <ul style="list-style-type: none"> • Once (the whole amount is paid at maturity) • Weekly • Monthly • Bimonthly • Trimestrial • 4 Weeks • Semestrial • Annual • 30Days. <div> <p>NOTE</p> <p>If the measurement unit of the selected Periodicity Type = Days, then Holiday Shift For Repayment Installments = False and it cannot be changed.</p> </div>

Field	Required	Data Type	Details
Grace Type	No	Option set	<p>Select whether the product grace should apply to the principal, the interest, or both. Select an option from the list:</p> <ul style="list-style-type: none"> Both Principal Interest.
Product Grace	No	Option set	<p>Select an option from the list. This is the amount of time that the bank can offer to a customer at the beginning of the contract without repayments of principal or principal + interest (however, most probably the bank capitalizes the interest for that period of time).</p>

Click the **Save and Reload** button at the top right corner of the page.

Schedule Templates Section

In the **Schedule Templates** section, you can associate/ delete payment schedule types to/ from the banking product.

Schedule Templates

+ Insert existing

X Remove existing

☐ Name

Credit Card Installments

One principal installment

To associate a payment schedule type to the banking product, click **Insert Existing** and select one of the already defined types. Go to "[Payment Schedule Types](#)" on [page 530](#) to read more about this.

IMPORTANT!

When creating a new Term Loan, Mortgage, or Overdraft banking product, you must select at least one payment schedule type, otherwise you can't approve the product. If the **Schedule Templates** section has no records, an error message is displayed upon transitioning the product into the **Approved** status: "At least one Payment schedule type definition must be selected for approval!"

Click the **Save and Reload** button at the top right corner of the page.

Holiday Settings Section

In the **Holiday Settings** section, the following fields are available:

Holiday Settings

Holiday Shift For Repayment Installments



Defer Due Date



Holiday Shift Method

Forward

**Country Calendars**

+ Insert existing

× Remove existing



Name



Romania

Field	Required	Data Type	Details
Holiday Shift For Repayment Installments	Yes	Boolean	<p>This checkbox marks if the holidays are considered for the calculation of the maturity schedule.</p> <div> <p>NOTE</p> <p>The Country Calendars section and the Defer Due Date and Holiday Shift Method fields appear if you select this checkbox.</p> </div>
Defer Due Date	Yes	Boolean	<p>If you select the checkbox, the payment schedule calculates the next payment amount as if the due date has not changed even when the due date falls on a holiday.</p> <p>This checkbox is selected by default.</p>

Field	Required	Data Type	Details
Holiday Shift Method	No	Option set	<p>Select from the list the method to be used when calculating the due date if that date falls to a holiday. The due date can be shifted before or after the holiday.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • None - the due date is not shifted. • Forward - the due date is shifted to the next working day after the initially calculated due date. • Backward - the due date is shifted to the last working day before the initially calculated due date. <p>Default value: Forward.</p>

In the **Country calendars** section, you can insert or delete calendars. You can work with multiple calendars as well. Click the **Insert Existing** button and add the country's name. If the maturity date coincides with a holiday, it is allocated automatically on the next business day.

Click the **Save and Reload** button at the top right corner of the page.

Availability

The **Availability** tab determines the monetary range and the time frame when the product is available for customers.

1 Main Info 2 Details 3 **Availability** 4 Dimensions 5 Product Formula Engine 6 Documents 7 Loan Core Settings 8 History 9 Origination Elements 10 GL Settings

Product Availability

Minimum Amount: Maximum Amount: Minimum Period: Maximum Period: Minimum Advance: Maximum Advance:

Start Period For Unusage After Activation(Months):

Availability Rules

Product Availability Item Filters:

Product Covenants:

Description	Type	Covenant	Valid From	Valid to	Value
<input type="text" value="Q"/>	<input type="text" value="Q"/>	<input type="text" value="Q"/>	<input type="text" value="Q"/> <input type="text" value="Q"/>	<input type="text" value="Q"/> <input type="text" value="Q"/>	<input type="text" value="Q"/>

The following fields are available:

Field	Required	Data Type	Details
Minimum Amount	No	Whole Number	The minimum amount of the product for which the bank opens a contract.
Maximum Amount	No	Whole Number	The maximum amount of the product for which the bank opens a contract.
Minimum Period	No	Whole Number	The minimum duration of the product mentioned in the contract.
Maximum Period	No	Whole Number	The maximum duration of the product mentioned in the contract.
Minimum Advance	No	Numeric	The minimum advance percentage from the contract's financed value applicable at the contract level.
Maximum Advance	No	Numeric	The maximum advance percentage from the contract's financed value applicable at the contract level.
Start Period For Unusage After Activation (Months)	No	Whole Number	The start period for unused amount after the activation, in months.

Availability Rules Section

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see "[Product Filter](#)" on page 519.

Availability Rules

Product Availability Item Filters

+ Insert × Delete 📄 Export 🔄 Refresh

☐ Description

CA >< 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Product Covenants Section

In the **Product Covenants** section you can set certain conventions that applicants must abide by after getting the loan. This is usually applicable for corporate clients that must meet certain requirements in order to continue to receive disbursements.

Product Covenants

+ Insert × Delete 📄 Export 🔄 Refresh

<input type="checkbox"/>	Type	Covenant	Valid From	Valid to	Value
	<input type="text"/>	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/>
	Affirmati...	Borrowers should perform tax obligations	19/04/2022	20/04/2030	
	Financial	Lender can monitor borrower's current r...	19/04/2022	20/04/2030	

Click the **Insert** button to add a covenant to the product. Each covenant can be attributed a value, an availability period, and a review frequency in months. Read more about covenants in the "[Covenant](#)" on page 567 page.

Click the **Save and Reload** button at the top right corner of the page.

Dimensions

The **Dimensions** tab displays the interests, commissions, insurances, discount and questions valid for a product.

The screenshot shows the 'Dimensions' tab in the Banking Product Factory interface. It contains four sub-sections:

- Interest & Commissions:** Includes a search bar, a dropdown menu (currently showing 'MCA'), and buttons for '+ Insert', 'X Delete', 'Export', and 'Refresh'.
- Insurances:** Includes a search bar, a dropdown menu (currently showing 'House Insurance'), and buttons for '+ Insert', 'X Delete', 'Export', and 'Refresh'.
- Discounts:** Includes a table with columns: Name, Discount, End Date, Start Date, and Value Discount. Each column has a search bar. Below the table, it says 'No data'. Buttons for '+ Insert', 'X Delete', 'Export', and 'Refresh' are at the top.
- Questions:** Includes a search bar, a dropdown menu (currently showing 'Question1'), and buttons for '+ Insert existing' and 'X Remove existing'.

You can insert, delete or export interest, commissions, insurances, discounts or questions. To add a new one, click **Insert** and fill-in the fields detailed in the sections below.

NOTE

To configure the interest and commissions separately, navigate to **Main > Product Factory > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions Section

Click **Insert** to add an **interest** or a **commission**. In the **Interest & Commission Item** page, fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Enter a code for this particular interest/ commission.
Item Name	Yes	Text	Enter a name.
Start Date	No	Date	The start date when the interest/ commission becomes effective.
End Date	No	Date	The end date for the interest/ commission.
Interest List	No	Option set	Select from which list the interest is a part of.


Field	Required	Data Type	Details
Commissions List	No	Option set	Select from which list the commission is a part of.
Minimum Interest Rate (%)	No	Numeric	Enter the percent applicable as a minimum interest rate at the contract level.
Is Negotiable	No	Boolean	Select the checkbox to specify that every interest, commission or margin field at the contract level is negotiable and can be edited.

Click the **Save and Reload** button at the top right corner of the page.

In the **Interest & Commission Item Filters** section, click **Insert** to insert an [item filter](#) and fill in the following fields:

Field	Required	Data Type	Details
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Value/ Date	No	Text/Date	Select the beginning value/ date for the filter.
Until Value/ Until Date	No	Text/Date	Select the maximum value/ date for the filter.
Description	No	Text area	This field is automatically filled in after clicking the Save and Reload button. The values/ dates inserted above are turned into an expression.
For Lookup attributes			
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Option Set	No	Option set	It is automatically filled in with the option set name created for the attribute.
Description	No	Text area	It is left blank. Add a description if needed.

Field	Required	Data Type	Details
Grid of Options	No	Grid	This field is automatically filled in after clicking the Save and Reload button. The values of the option set are displayed. Select the Boolean for the values you wish to include in the filter.





Save and close

Save and reload

Edit Interest & Commission Item Filter

Main Information

Filter AL_Amount  

Value 1 Until Value 50,000

Description

AL_Amount > 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Insurances Section

For any banking product, you can select a pre-existing insurance or create a new one. To add a new **insurance**, fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Insert a code for this particular insurance.
Item Name	Yes	Text	Insert a name.
Start Date	No	Date	It is the start date when the insurance becomes effective.
End Date	No	Date	It is the end date for the insurance.
Details	No	Text area	It is left blank. Add a description if needed.
Insurance List	No	Option set	Select from which list the insurance is a part of.

Click the **Save and Reload** button at the top right corner of the page.

In the **Insurance Item Filters** section, click **Insert** and fill in the following fields:

Field	Required	Data type	Description
Filter	Yes	Option set	The name inserted earlier.
Value	Yes	Text	The starting value for the attribute.
Until Value	Yes	Text	The ending value of the interval.
Description	No	Text area	Insert the proper description for the availability filter.

Click the **Save and Close** button at the top right corner of the page.

Discounts Section

For any banking product, you can add discounts of any nature. You can select a pre-existing discount or create a new one.

Click the **Insert** button to add a new **discount**. In the **Details** page, fill in the following fields:

Field	Required	Data Type	Details
Name	Yes	Text	Insert the appropriate name for the discount.
Discount	No	Option set	Choose one of the pre-configured types of discounts or create a new one. According to the selected type, new fields appear on the page requiring to be filled in.

Field	Required	Data Type	Details
Value discount	No	Numeric	Insert the value of the discount to be applied, e.g. 15.
Start date	Yes	Date	It is the start date when the discount becomes effective.
End date	Yes	Date	It is the end date for the discount.
Applied to dimension	No	Option set	Specifies for which product dimension this discount is applicable (interest, commission or insurance). This is autocompleted by the selected discount's dimension.
Commission type	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount . Specifies for which commission type this discount is applicable. This is autocompleted by the selected discount's default commission type.
Commission	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount . Specifies for which commission this discount is applicable. This is autocompleted by the selected discount's default commission.
Insurance class	No	Lookup	This field appears if the selected discount = Discount Life Insurance or Interest Discount . Specifies for which insurance class this discount is applicable (credit, home, life or other insurance class). This is autocompleted by the selected discount's insurance class.

Field	Required	Data Type	Details
Insurance	No	Lookup	This field appears if the selected discount = Discount Life Insurance. Specifies for which insurance this discount is applicable. This is autocompleted by the selected discount's insurance.
Interest type	No	Lookup	This field appears if the selected discount = Interest discount. Specifies for which interest type this discount is applicable.
Use Banking Formula	No	Boolean	If you select this checkbox, the discount is calculated using the Banking Formula engine.
Is optional discount?	No	Boolean	Selecting this checkbox results in the discount being applied only if the customer agrees to the discount.
Is percentage	No	Boolean	If you select this checkbox, the discount is calculated as a percentage from the contract's amount.
Destination entity	No	Option set	Select the entity where to register the discount. This field opens when the Is optional discount? checkbox is selected.
Destination entity attribute	No	Option set	Select the attribute where to register the discount. This field opens when the Is optional discount? checkbox is selected.

Click the **Save and Reload** button at the top right corner of the page.

In the **Product Discount Item Filter** section, click **Insert** and fill in the fields as specified in the **Product Filter page**. The fields displayed depend on the selected filter.

Click the **Save and Reload** button at the top right corner of the page.

Questions Section

Choose one or more questions to add to the banking product, or insert a new one.

To insert a new [question](#), click **Insert existing**, then click **Insert**. In the **Add Banking Product Question** page, fill in the following fields:

Field	Required	Data type	Description
Question	No	Text	Enter the appropriate name.
Answer Type	No	Option set	Select the type of answer the customer has to give: <ul style="list-style-type: none"> • text • numeric • option set.
Answer Entity	No	Option set	Select the entity where the answer is stored.
Answer Field	No	Option set	Select the attribute where the answer is stored.

Click the **Save and Reload** button at the top right corner of the page.

The **Banking Products List** shows where the question is used.

IMPORTANT!

The question has to be activated in order for it to be added to the banking product.

Click the **Save and Close** button at the top right corner of the page.

For example, this is how a question is displayed in a digital journey in the FintechOS Portal:

The screenshot shows a web application interface for editing a loan application. At the top, there's a navigation bar with 'CURRENT STATUS: INITIALIZED' and 'NEXT STATUS: CHOOSE STATUS-'. Below this is a blue header bar that says 'EDIT LOAN APPLICATION'. The main content area is titled 'Eligibility Questions' and includes a sub-header: 'We ask for this information so that we can carry out the checks needed to consider you for a mortgage'. There are three input fields: 'DEPOSIT SOURCE' with a dropdown menu showing 'Select...', 'RETIREMENT DATE' with a date picker, and 'RETIRED' with radio buttons for 'Yes' and 'No' (the 'No' button is selected). A 'Finish' button is located at the bottom right of the form.

Product Formula Engine

The **Product Formula Engine** tab keeps formulas built with [Formula Engine](#) for the banking product. Such formulas can be used to determine the eligibility of a customer.

The screenshot shows the 'Product Formula Engine' tab in a web application. It has a navigation bar with tabs: 1 Main Info, 2 Details, 3 Availability, 4 Dimensions, 5 Product Formula Engine (selected), 6 Documents, 7 Loan Core Settings, 8 History, 9 Origination Elements, 10 GL Settings. Below the navigation bar, there are two main sections: 'Banking Product Formulas' and 'Test Scenarios'. Each section has a table with columns for Name, Formula Type, and Formula. The 'Banking Product Formulas' table has one row with Name 'CA', Formula Type 'CommissionFormula', and Formula 'commissionByAmount'. The 'Test Scenarios' table has one row with Name 'Duplicate-19-04-2022_11:07:57' and Formula Type 'CommissionFormula'. Both sections have buttons for '+ Insert', 'X Delete', 'Export', and 'Refresh'.

Banking Product Formulas Section

In the **Banking Product Formulas** section, choose an already defined formula or click **Insert** to configure a new one, for example a formula for eligibility or scoring purposes. For information on how to build a formula, see [Define Formula Inputs](#).

In the **Add Banking Product Formula** page, fill in the following fields:

The screenshot shows the 'Add Banking Product Formula' form. It has a title bar with a back arrow and 'Edit Banking Product Formula'. There are two buttons: 'Save and close' and 'Save and reload'. Below the title bar is a section titled 'Main Information' with four input fields: 'Name' (value: 'CA'), 'Banking Product' (value: 'Duplicate'), 'Formula Type' (value: 'CommissionFormula'), and 'Formula' (value: 'commissionByAmount'). There is a 'Data Mapping' section with one input field (value: 'BPFormulaType_Test Formula_3647267821582_formula'). A 'Map Data' button is located at the bottom right.

Field	Required	Data type	Description
Name	Yes	Text	Enter an appropriate name.
Banking Product	No	Option set	The name of the banking product is inserted automatically.
Formula Type	Yes	Lookup	Select the type of formula configured before, e.g. scoring /eligibility.
Formula	Yes	Lookup	Select the previously configured formula. IMPORTANT! The formula must be activated before attaching it to a product.
Data Mapping	No	Lookup	Select the previously configured data mapping.

After selecting the desired formula, click **Save and reload**, then click **Map Data**.

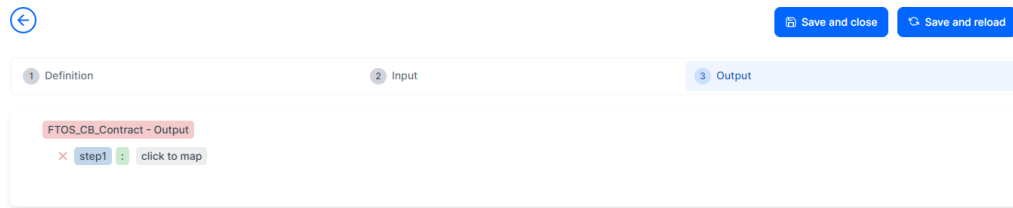
The screenshot shows the 'Formula Mapping' page with three tabs: 'Definition', 'Input', and 'Output'. The 'Input' tab is active. The page title is 'Formula parameter mapping'. The configuration fields are as follows:

- Data Mapping Type:** Banking Product
- Master Entity:** FTOS_CB_Contract
- Operation Name:** test
- Name:** BPFormulaType_Test Formula_1647267821582_formula

At the top right, there are two buttons: 'Save and close' and 'Save and reload'.

In the **Formula Mapping** page, click **Input** and configure the input data for the formula.

Click **Output** and configure the output for the formula.



Click the **Save and Close** button at the top right corner of the page.

Such formulas can be used in digital journey steps, for example when the customer inserts their financial data.

Test Scenarios Section

A good practice is to test the formula before displaying it in a digital journey. You can do that in the **Test Scenarios** section.

Click **Insert** to open the **Add Test Scenario** page.

Insert a **Test Scenario Type** from the option set. The keys and the values are shown. Click the **Save and Reload** button at the top right corner of the page.

← Edit Test Scenario Save and close Save and reload

Main Information

Test Formula Type CommissionFormula

Key Value

Amount 23.45

Save Output Data Calculate

Test Scenario Outputs

+ Insert X Delete Export Refresh

Name

Click the **Calculate** button. The outputs are displayed in the **Test Scenario Outputs** section. These outputs can be saved by selecting the **Save Output Data** checkbox next to **Calculate**.

Documents

The **Documents** tab contains all the attached documents available for a product.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Product Formula Engine 6 Documents 7 Lean Core Settings 8 History 9 Origination Elements 10 GL Settings

Banking Product Documents

+ Insert X Delete Export Refresh

Report Banking Copies No Operation Code

Status overview of the queues 2 TC

Banking Product Agreements

+ Insert X Delete Export Refresh

Code

No data

Banking Product Documents Section

The previously associated documents are displayed in the **Banking Product Documents** section.

To attach a new document to the banking product, click **Insert** and fill in the following fields:

Field	Data Type	Description
Operation Code	Whole number	Enter a code for the document.

Field	Data Type	Description
Banking Copies No	Whole number	Insert the number of copies made.
Report	Lookup	Select a document from the list.
Document Type	Option set	Select a document type from the list.
Is Mandatory	Boolean	Select if the document is mandatory.
Includes Debtor	Boolean	Select if the document includes the debtor.
Includes Coborrower	Boolean	Select if the document includes the co-borrower.
Requires Signature	Boolean	Select if the document requires to be signed.
Is accord	Boolean	Select if the document represents the accord.

⏪ Save and close ↻ Save and reload 📄 Save and new

Add Banking Product Document

Banking Product Document

Operation Code: Banking Copies No: Report: Document Type:

Is Mandatory: ☒ Yes ☐ No Includes Debtor: ☐ Yes ☒ No Includes Coborrower: ☐ Yes ☒ No Requires Signature: ☐ Yes ☒ No

Is Accord: ☐ Yes ☒ No

Click the **Save and Close** button at the top right corner of the page.

Banking Products Agreements Section

The agreements that a customer needs to go through are displayed in the **Banking Products Agreements** section.

To attach a new agreement to the banking product, click **Insert** and fill in the following fields:

Field	Required	Data Type	Description
Agreements	Yes	Option set	Select an agreement from the list.
Banking Product	Yes	Option set	It is automatically filled in.
Code	No	Whole number	Insert the corresponding code.
Is Mandatory	No	Boolean	Select if the agreement is mandatory for the product.

Edit Banking Product Agreement

Save and close Save and reload

Main Information

Agreement Code Banking Product Is Mandatory

Popescu Broker + AGR SLICE Loan + ✓

Click the **Save and Close** button at the top right corner of the page.

For more information on how to configure a contract or an agreement, see the [Digital Document Processor](#).

Lean Core Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

Transactions types that are performed to and from a banking product are displayed in the **Lean Core Settings** tab. The tab also holds information about the reconciliation account associated with the products, mandatory roles for contract approval, payment allocation settings, the treatment of returned goods for contracts based on this banking product (only for Term Loans and Mortgage banking products), and closing contract settings.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Product Formula Engine 6 Documents 7 Lean Core Settings 8 History 9 Origination Elements 10 GL Settings

Self Bank Account Associated With The Product

Reconciliation Account Negative balance treatment

Reconciliation EUR NoMessage

Mandatory Roles for Contract Approval

+ Insert X Delete Export Refresh

Role Search Limit

Q (All)

Beneficiary

Closing Contract Settings

Buffer Close Days Close Real Time Closing Is Flexible

15

Contract Is Closed Automatically

Payment Allocation Settings

Repayment Allocation Method Grace Days for Repayment Penalty for grace period

CostOrder

Allowed Transactions

+ Insert existing X Remove existing

Name

Q

Top Up Account

Transfer between my bank accounts

Withdraw

Self Bank Account Associated With The Product Section

For each banking product, you must select a reconciliation account, which is the bank account to be used for transactions.

Self Bank Account Associated With The Product

Reconciliation Account	Negative balance treatment
<div>Reconciliation EUR</div> <div>↓</div>	<div>NoMessage</div> <div>▼</div>

Next to the **Reconciliation Account** field, select a value from the list to be the current account from which or to which the money is wired from or to.

NOTE

This account must have the same currency as the product, because the translations are performed from and into this account.

Select a value for the **Negative Value Treatment** drop-down to specify how Core Banking treats situations when the funds of the reconciliation account associated with the banking product used in the contract would go below zero if a disbursement event would be approved. The possible values are:

- **Error** - there is an error message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can't be approved and the balance can't go below zero. Select this value if you want to block any transactions that would result in a negative balance of the reconciliation account associated to the banking product.
- **Warning** - there is a warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!"*. The event can be approved and the balance can go below zero.

- **NoMessage** - there is no error or warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account. The event can be approved and the balance can go below zero.

NOTE

Core Banking also has a system parameter, **ReconciliationAccountTreatment**. That is a system-wide setting, applicable to events for contracts based on all banking products without a specified **Negative balance treatment** value. Core Banking takes into consideration the settings used at the banking product level (the **Negative balance treatment** field's value). Thus, if the value is specified at the banking product level, then that value takes precedence over the system parameter's setting.

If you associate the same reconciliation account to more than one banking product, then the setting selected in banking product A is applied for contract events based on banking product A, while for the banking product B, Core Banking would apply the setting selected at the level of banking product B.

Payment Allocation Settings Section

This section holds the payment allocation settings. This is where you can decide which allocation method should be used to determine the order in which credit items are prioritized when repaying loans, credit accounts, and so on. You can also define the grace period settings.

Payment Allocation Settings

Repayment Allocation Method	Grace Days for Repayment	Penalty for grace period
<div>CostOrder</div> <div>↓ ✎</div>	<div>5</div>	<input type="checkbox"/>

Fill in the following fields:

Field	Required	Data Type	Details
Payment Allocation Method	No	Lookup	The payment allocation method represents the recovery order of amounts from payment notifications. Select a payment allocation method from the list.
Grace Days for Repayment	No	Whole number	Insert the number of days for which the bank expects a payment without calculating penalty.
Penalty for grace period	No	Boolean	If you select the checkbox, the penalty interest is applied on the loan contract without taking into consideration the grace period defined at contract level, being calculated for the difference between system date - due date, if the grace period passed and the customer didn't pay the due amounts. If you leave this checkbox unselected, the penalty interest is applied on the loan contract taking into consideration the grace period defined at contract level, being calculated for system date - due date + grace days for repayment.

Click the **Save and Reload** button at the top right corner of the page.

Mandatory Roles for Contract Approval Section

The **Mandatory Roles** section allows you to add the roles of the participants that are mandatory to exist at the contract level for contracts based on this banking product. In other words, when creating contracts based on banking products with Merchant role in this section, you must add a customer with the same Merchant role as contract participant, otherwise, the contract cannot be approved. When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role, in this case Merchant Exposure.

Mandatory Roles for Contract Approval

+ Insert

×

Delete

Export

Refresh

Role

Search Limit

Q

(All)

Beneficiary

In the **Mandatory Roles** section, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Lookup	The banking product for which you define mandatory roles. This is automatically completed with the current banking product.
Role	Yes	Option Set	Select the role of the participants that are mandatory to exist at the contract level for contracts based on this banking product.
Search Limit	Yes	Boolean	When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role. If you select a role not associated with a customer limit type in Core Banking, the Search Limit field becomes read-only and unselected.

Save and close

Save and reload

Save and new

Add Mandatory Role

Main Information

Banking Product

Duplicate

Role

Merchant

Search Limit

✓

Click the **Save and Reload** button at the top right corner of the page.

Return Of Goods Section**IMPORTANT!**

This section is displayed only for **Term Loan** and **Mortgage** banking products.

The fields within this section allow you to define whether a contract based on the banking product can have **Returned Amount** or **Goods** transactions or not, and the specific conditions for these transactions. The **Returned Amount** or **Goods** transaction type can be used when a customer returns all or part of a loan or mortgage in a short while after contract creation, if the banking product was defined to allow such transactions. You can set up **Return Fee** type commissions, to return all or some of the claimed commission to the borrower.

To configure the treatment of returned goods for contracts based on this banking product, fill in the following fields:

Field	Required	Data Type	Details
Allow Return Of Goods	Yes	Boolean	Select this checkbox if the contracts based on this banking product accept Return of Goods transactions. Default value: False. If selected, the Accepted Days For Return and Return Message fields are displayed, otherwise, these fields are not visible.
Accepted Days For Return	Yes	Whole Number	Specify the number of days after contract creation during which the return of goods transaction can be created and approved.

Field	Required	Data Type	Details
Return Message	Yes	Option Set	<p>Select the behavior of messages generated by Core Banking for situations when the Returned Amount or Goods transaction's approval date + the number of accepted days for return \geq the current date. Possible values are taken from the Warning Error Treatment option set. According to the desired behavior, choose:</p> <ul style="list-style-type: none"> • Error, if the transaction should not be approved and an error message should be displayed; • Warning, if the transaction can be approved, but a warning message should be displayed; • NoMessage, if the transaction can be approved without any messages.

Return Of Goods

Allow Return Of Goods



Accepted Days For Return

Return Message

Click the **Save and Reload** button at the top right corner of the page. If Allow Return Of Goods = True, then the Returned Amount of Goods transaction is automatically added to the **Transaction Types** section.

Closing Contract Settings Section

IMPORTANT!

This section is displayed only for **Term Loan** and **Mortgage** banking products.

In the **Closing Contract Settings** section, you can configure the default closure settings for contracts based on this banking product.

Closing Contract Settings

Buffer Close Days

Close Real Time

☐

Closing Is Flexible

☒

Contract Is Closed Automatically

☒

Fill in the following fields:

Field	Required	Data Type	Details
Buffer Close Days	No	Whole Number	Enter the number of days used as buffer before automatically closing the contract when the contract reaches maturity and its balance reaches zero. If Buffer Close Days > 0, then Contract Is Closed Automatically = False.

Field	Required	Data Type	Details
Close Real Time	No	Boolean	If you select this checkbox, the contract based on this banking product is closed in real-time, when the contract reaches maturity and its balance reaches zero, without waiting for the end of day processes. If Close Real Time = True, then Buffer Close Days = 0 and Contract Is Closed Automatically = True.
Closing Is Flexible	No	Boolean	If you select this checkbox, the closure details of the contract based on this banking product can be modified at the contract creation.
Contract Is Closed Automatically	No	Boolean	If you select this checkbox, the contract based on this banking product is closed automatically at maturity, if the balance reaches zero. If Contract Is Closed Automatically = False, then Close Real Time = False.

Click the **Save and Close** button at the top right corner of the page.

Allowed Transactions Section

In the **Allowed Transactions** section, you can associate possible transaction types with the selected banking product. Click **Insert existing** and select the desired transaction types.

Double-click a selected transaction type to edit it.

Transaction Configuration

Save and close

Save and reload

Edit Transaction Type

Settings

Name

Disbursement

Transaction Code

DSB

Process Type

Disbursement

Edit Form

FTOS_CB_EventDisbursement

Transaction Operation Type

Disbursement

Is System Transaction

☐

Is Automatic Transaction

☐

Real Time Process

☐

Only One Draft

☒

Generate New Contract Version

☐

Commission Type

Return Commission Type

Accounting Configurations

Generates Accounting Entry

☒

OL Master Entity

FTOS_CB_ContractEvent

Purge Configurations

To Be Purged

☒

Purge Number of Days

30

Master Purge Entity

FTOS_CB_ContractEvent

Transaction Value Types

+ Insert

X Delete

Export

Refresh

☐ Transaction Type

Type

Value Type Name

Is Header

Value Type Attrib...

(All)

Transaction Item Accounting Configurations

+ Insert

X Delete

Export

Refresh

☐ Transactio...

Accountin...

Accountin...

Chart Acc...

Currency

Operation...

Take From...

In the **Edit Transaction Type** section, fill in the following fields:

Field	Required	Data Type	Details
Settings			
Name	Yes	Text	Name of the transaction type.
Transaction Code	Yes	Text	The code of the transaction type.
Is Automatic Transaction	Yes	Boolean	This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations.
Is System Transactions	No	Boolean	This checkbox marks the transaction as being neither a credit of the account, nor an allocation of funds, but a transaction that does not influence other transactions within the account. System transactions are meant to be used only for accounting.

Field	Required	Data Type	Details
Real Time Process		Boolean	This checkbox marks the transaction as to be processed in real-time. If the value is True, then the transaction is processed right away. If the value is False, then the transaction is inserted as a bank account transaction queue record.
Edit Form	No	Lookup	The form used to edit this transaction type. The lookup only shows forms defined on the Contract Event entity.
Only One Draft	No	Boolean	If you select this checkbox, there can be only one record of this transaction type in Draft status created at the contract level.
Generate New Contract Version	No	Boolean	This checkbox allows you to specify if a new contract version should be generated by this transaction type.
Commission Type	No	Lookup	The commission type applicable for this transaction type. Return fee commissions are filtered out and can't be selected.
Return Commission Type	No	Lookup	The return fee commission type applicable for this transaction type. Only return fee commissions can be selected.

Field	Required	Data Type	Details
Process Type	Yes	Option set	<p>This field associates the process type with the transaction operation type, which makes the connection with the transaction motor of bank accounts. Select one of the processes defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div>
Accounting Configurations			
Generates Accounting Entry	Yes	Boolean	This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity.
OL Master Entity	Yes	Lookup	The entity referenced by the accounting systems.
Purge Configurations			
To Be Purged	No	Boolean	This checkbox marks the transaction as purgeable. If selected, it allows you to purge or archive records in Draft status.
Purge Number of Days	Yes	Whole Number	The default number of calendar days that a record can be kept in Draft status before it is purged. For additional information, see the Core Banking System Parameters page. This field is displayed only when To Be Purged = True.

Field	Required	Data Type	Details
Master Purge Entity	Yes	Lookup	The master purge entity under which the draft records are. This field is displayed only when To Be Purged = True.

You can also edit the information in the **Transaction Value Types**, **Transaction Item Accounting Configurations** and **Transaction Accounting Models** sections. Read more details about Transaction Types in the **Operational Ledger** User Guide.

Click the **Save and Close** button at the top right corner of the page.

The following transaction types are typically used for overdrafts:

- **Accruals and Provisions** - System transaction. If added at banking product level, the accruals and provisions for contracts can be calculated on a daily basis. This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Disbursement** - If added at banking product level, the requested funds are transferred into the customer's account.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Overdraft Payment** - If added at banking product level, the customer can perform payments from the current account using the overdraft functionality, practically using an amount larger than the positive balance of the account, up to the overdraft limit defined at the contract level.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Early repayment** - If added at banking product level, the customer can make a payment earlier than the stated maturity date of the contract.

This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Payment Holiday** - If added at banking product level, the official bank holidays are considered when calculating a payment schedule.

This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Repayment** - If added at banking product level, the customer can make a payment to cover the scheduled repayment amount.

This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Repayment Notification** - If added at banking product level, the system generates and displays in the contract a repayment notification after each disbursement, containing the total amount to be paid off.

This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Reschedule Overdues** - If added at banking product level, the system extends or adds extra time to an existing contract.

This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Reschedule Debt** - If added at banking product level, the system recalculates the entire payment schedule by extending the time period for loan repayment.

This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Revert Disbursement** - If added at banking product level, disbursements performed at contract level can be reverted after being performed.

This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Revert Transfer between my bank accounts - System transaction.** If added at banking product level, transfers between the same customer's bank account can be reverted after being performed.

This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Transfer between my bank accounts -** If added at banking product level, the customer is allowed to move funds between their accounts at the contract level.

This transaction type is automatically added in the **Associated Transactions** tab if **Allow Withdrawals** was selected in the [Details tab](#).

History

The **History** tab displays the versions of the banking product, their workflow status and the user who modified the product.

Label	Name	attributeVersionDate	attributeVersion	Modified by user
Draft	Duplicate	19/04/2022 10:29	1	

Here you can track the product's life cycle and review older versions that are no longer active (for details, see ["Banking Products' Life Cycle" on page 595](#)).

Origination Elements

The **Origination Elements** tab holds the elements required in origination journey, such as product benefits, display conditions, features, destination types, or associated products.

The screenshot shows the 'Origination Elements' tab in the Banking Product Factory. It includes sections for Product Image, Document, Benefits, Display Conditions, Product Features, Product Destination Types, and Associated Products. Each section has a title bar, a toolbar, and a main content area. The Product Features section is expanded, showing a table with columns for Feature, DisplayName, and Show Order.

Feature	DisplayName	Show Order
Feature	DisplayName	Show Order
Feature	DisplayName	Show Order

You can fill in the following fields:

Field	Required	Data Type	Details
Product Image	No	File	Insert an image representative for the product.
Document	No	File	Insert the document representative for the product.
Benefits	No	Text area	Insert the advantages of owning the banking product. You can format the text in the text editor window.
Display Conditions	No	Text area	Insert the conditions for the applicant, e.g. age limit, annual turnover, education level, income, registration documents.

Click the **Save and Reload** button at the top right corner of the page.

Product Features Section

In the **Product Features** section, you can insert, delete or export features. To add a feature, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Feature	No	Text	Enter the name of the product feature.
Is Main Feature	No	Boolean	Select the checkbox if it is the major feature.
Display Name	No	Text	Enter the display name of the feature.

Click the **Save and Reload** button at the top right corner of the page.

Product Destination Types Section

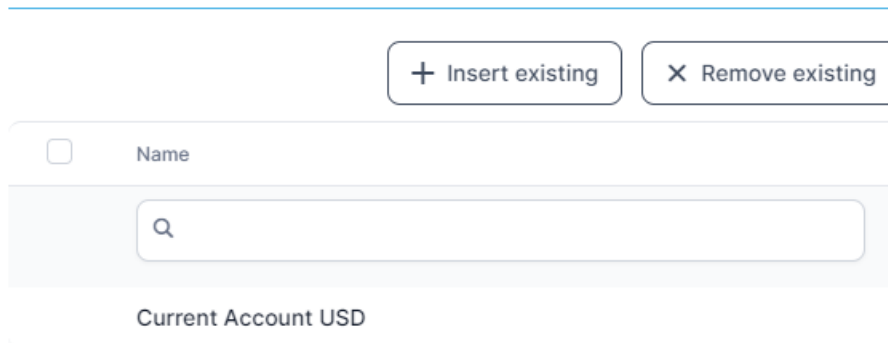
The **Product Destination Types** section allows for insertion or removal of existing product destination types. Click **Insert existing** and select one of the existing destination types, or insert a new one. To create a new destination type, insert a name and specify if it is default. For this case, the following have been configured:

- Loan Collateral
- Loan disbursements
- Personal
- Repayments.

Associated Products Section

The **Associated Products** section allows for insertion or removal of existing products. It is especially useful when you wish to create a link between two products. You can insert or remove a product from the list or create a new one.

Associated Products



The interface for the 'Associated Products' section includes a header with two buttons: '+ Insert existing' and 'X Remove existing'. Below the header is a table with a 'Name' column. The first row of the table displays 'Current Account USD'.

Click the **Save and Reload** button at the top right corner of the page.

GL Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

In the **Banking Product GL Accounts** section, you can set specific accounts to be used by the **Operational Ledger** system for transactions performed on contracts based on this banking product. Thus, you can overwrite the generic settings of the Operational Ledger, instructing it to use the accounts specified at banking product level.

To add specific accounts to be used by **Operational Ledger**, click **Insert** and fill in the following fields in the displayed **Add Banking Product GL Account** page:

Field	Required	Data Type	Description
Product	Yes	Option set	Select from the list the banking product. Automatically completed with the banking product you are currently editing.
Accounting System	Yes	Option set	Select from the list the desired accounting system. The list contains the records created in the FTOS_GL_AccountingSystem entity.
Accounting Scope	Yes	Option set	Select from the list the corresponding accounting scope. The list contains the records created in the FTOS_GL_AccountingScope entity.

Field	Required	Data Type	Description
Item	No	Option set	Select from the list the corresponding transaction item. The list contains the records created in the FTOS_GL_TransactionItemAccountingConfig entity.
GL Account	Yes	Option set	Select from the list the corresponding GL account. The list is filtered based on the previously selected accounting system. It contains the accounts defined in the FTOS_GL_AccountingChart entity that were added to the chosen accounting system record.

Click the **Save and Reload** button at the top right corner of the page.

Term Loans

A term loan is a banking product which defines a loan for a specific amount that has a specified repayment schedule and either a fixed or floating interest rate.

To manage banking products:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, click **Product Factory**.

4. Click **Banking Products** to open the **Banking Products List** page.

Banking Products list

Code	Name	Class	SubClass	Category	SubCategory	Status	
SLICE	SLICE Loan					Approved	1
SL_BU	Slice BU					Approved	1
TLTL2	TLTL2 - Term loan Eur					Approved	1
M_BU	Mortgage test BU					Draft	1

On the **Banking Products List** page, you can:

- Add a new banking product by clicking the **Insert** button at the top right corner.
- Edit an existing banking product from the list by double-clicking it.
- Delete a banking product by selecting it and clicking the **Delete** button at the top right corner.

NOTE

For banking products in **Active** status, you can't change any of their related entities (such as features, discounts, product guarantee, interest or commission item, formula, test scenario, product covenant, product disbursement, product availability item filter). To change any of the product's related entities, create a new version of the banking product record.

Creating Term Loans

To create a new banking product, click the **Insert** button on the top right side of the page. A new page opens, with a series of tabs that assist you in configuring the banking product:

1. **Main Info** - The first tab requires the basic elements for the creation of a product such as product type, name, code, hierarchy and features.
2. **Details** - This tab requires further elements that build on the first tab such as payment type, top-ups, withdrawals and associated products.

3. [Availability](#) - This tab determines the monetary range and the time frame when the product is available for customers.
4. [Dimensions](#) - This tab displays the interests, commissions, insurances, discounts and questions valid for a product.
5. [Product Formula Engine](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Documents](#) - This tab contains all the attached documents available for a product.
7. [Lean Core Settings](#) - This tab holds Core Banking related settings, such as transactions that are done to and from a banking product, reconciliation account associated with the product, mandatory roles for contract approval, payment allocation settings, or closing contract settings are found in this tab.
8. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
9. [Origination Elements](#) - This tab holds the elements required in origination journeys, such as product benefits, display conditions, features, destination types, or associated products.
10. [GL Settings](#) - This tab contains the accounts to be used by Operational Ledger for transactions performed on contracts based on this banking product.

Main Info

The **Main Info** tab requires the basic elements for the creation of a product such as name, code, currency, validity, or product classification.

The following fields are available:

Field	Required	Data Type	Details
Main Information			

Field	Required	Data Type	Details
Banking Product Type	Yes	Option Set	<p>Choose one for the following:</p> <ul style="list-style-type: none"> • Bank Account • Card • Credit Card • Deposit • Leasing • Mortgage • Overdraft • Term Loan <div> NOTE Your product type selection greatly influences the next steps. It is important to choose the right type of product to build. </div>
Currency	Yes	Lookup	Choose the currency for this banking product.
Banking Product Code	Yes	Text	Enter the code of the product. It can have 10 characters and it is used in the contract. It uses a sequencer and the code of the product type.
External Code	No	Text	The code of the product imported from an external system, if applicable. It can have 10 characters and it is not used in the contract.

Field	Required	Data Type	Details
Start Date	Yes	Date	Select the date when the product becomes available.
End Date	Yes	Date	Select the last date from when the product is available. From that date forward, the product is no longer available.
Name	Yes	Text	Enter the name of the product.
Class	No	Option set	Select the class of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Subclass	No	Option set	Select the subclass of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Category	No	Option set	Select the category of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
SubCategory	No	Option set	Select the subcategory of the product. This field is used to place the product in a hierarchy. For more information, see " Product Hierarchy " on page 523
Description			
Description	No	Text area	Write any description or additional text here.

Click the **Save and Reload** button at the top right corner of the page.

Product Classification Section

In the **Product Classification** section, you can insert or remove existing product classification items. To add a product classification item, click **Insert Existing** and select an already existing item.

Product Classification

+ Insert existing ✕ Remove existing

<input type="checkbox"/>	Code	Name	Classification Type	Valid From	Valid To
	<input type="text" value="REG1"/>	<input type="text" value="Classification ..."/>	<input type="text" value="Regulatory"/>	<input type="text" value="01/01/2020"/>	<input type="text" value="31/12/2030"/>

You can also create a new product classification item by clicking **Insert**. On the newly displayed **Add Product Classification** page, fill in the following fields:

←
✓
Save and close
Save and reload
Save and new

Add Product Classification

Main Information

Name	Code	Valid From	Valid To	Classification Type	Is Default
<input type="text" value="Reg 2"/>	<input type="text" value="REG2"/>	<input type="text" value="18/04/2022"/>	<input type="text" value="30/04/2029"/>	<input type="text" value="Regula..."/>	<input type="checkbox"/>

Classified Banking Products

Field	Required	Data Type	Details
Classification Type	Yes	Option set	Choose the classification type of the item. Possible values: Regulatory, Restructuring.
Name	Yes	Text	Enter the name of the classification item.
Code	Yes	Text	Enter the unique code of the classification item.
Is Default	Yes	Boolean	Select the checkbox if this classification item is default.
Valid From	Yes	Invariant Date	Select the date from which the product classification item is valid.
Valid To	Yes	Invariant Date	Select the date until when the product classification item is valid.

The **Banking Products Classification Section** is displayed after saving the classification item record and allows you to insert existing banking products. The following information is displayed here:

Field	Details
Code	The code of the banking product added to the product classification item.
Name	The name of the banking product.
Class	The class of the banking product.
SubClass	The subclass of the banking product.
Category	The category of the banking product.
SubCategory	The subcategory of the banking product.
Status	The status of the banking product record.

Click the **Save and Reload** button at the top right corner of the page.

IMPORTANT! For term loans, select Banking Product Type = **Term Loan**.

The screenshot displays the 'Main Information' tab of the Banking Product Factory interface. It features a form with various fields for product details. The 'Banking Product Type' is set to 'Term Loan', and the 'Currency' is 'EUR'. The 'Banking Product Code' is 'TLGEO', and the 'External Code' is 'EXT44'. The 'Start Date' is '01/04/2020' and the 'End Date' is '17/04/2025'. The 'Name' is 'Term Loan G', 'Class' is 'Corporate', 'SubClass' is 'Loan Term', 'Category' is 'Loan Term Unsecured', and 'SubCategory' is empty. The 'Description' field contains 'Term Loan banking product'. The 'Product Classification' section includes a table with columns for Code, Name, Classification Type, Valid From, and Valid To. The table has one row: REG2, Regulatory, 01/03/2021, 31/03/2021. There are buttons for '+ Insert existing' and 'X Remove existing'.

Details

The **Details** tab requires further elements such as general data, disbursement settings, payment schedule types and templates, product guarantees, tranches, and holiday settings.

1 Main Info2 Details3 Availability4 Dimensions5 Product Formula Engine6 Documents7 Loan Core Settings8 History9 Origination Elements10 GL Settings

General Data

Is Revolving

Allow Refinancing

Allow Restructuring

Allow CoDebtor

Max No. Of CoDebtors

Disburse Settings

Autodisbursement

Max No Disbursements

Activ Tranche On Doc Submission

Product Guarantees

Is Guaranteed

Collateral Cover Percent

Allow Collateral Partial Release

Product Tranches

InsertDeleteExportRefresh

Name	Tranche P...	Start Month From ...	Interest Percent
Transa 1	50.0000		2.0000
Transa 2	50.0000		2.0000

Allowed Guarantee Types

InsertDeleteExportRefresh

Guarantee Type	Max Accepted Covering Percent
FixDeposit	100.00

Payment Schedule Types

Period Type

Periodicity Type

Grace Type

Product Grace

Schedule Templates

Insert existingRemove existing

Name
Equal Installment Monthly 360
Equal Installment Monthly 365
Equal Installment Monthly Actual/Actual
Equal principal Monthly 30/360
Equal principal Monthly 30/365
Equal principal Monthly Actual/Actual

Holiday Settings

Holiday Shift For Repayment Installments

Defer Due Date

Holiday Shift Method

Country Calendars

Insert existingRemove existing

Name
Thailand

General Data Section

For the **General Data** section, the following fields are available:

MANAGING BANKING PRODUCTS

416

Field	Required	Data Type	Details
Is Revolving	No	Boolean	<p>Allows a business to borrow money as needed for funding working capital needs and continuing operations such as meeting payroll and payable.</p> <div> <p>NOTE</p> <p>If a term loan is revolving, its attached limit must also be revolving, meaning that the Available Amount of the limit is replenished either on each repayment of the principal or on loan contract closure.</p> </div>
Allow Refinancing	No	Boolean	Select if the account can be refinanced for this product.
Allow Restructuring	No	Boolean	Select if the loan can be restructured.
Allow CoDebtor	No	Boolean	Select if another debtor exists for this product.
Max No. of CoDebtors	No	Text	Set the maximum number of co-debtors possible for this product.

Click the **Save and Reload** button at the top right corner of the page.

Disburse Settings Section

For the **Disburse Settings** section, the following fields are available:

Field	Required	Data Type	Details
Auto Disbursement	Yes	Boolean	Specify if the disbursement is automatically performed when the contract is approved.
Max No Disbursements	No	Whole number	Enter the maximum number of disbursements that can be configured for this product.
Activ Tranche On Doc Submission	No	Boolean	If you select this checkbox, then the tranches are activated (disbursements are created and approved) after certain documents are submitted. It is the Financial Institution's responsibility to verify the content of the submitted documents.

Click the **Save and Reload** button at the top right corner of the page.

Product Guarantees Section

For the **Product Guarantees** section, the following fields are available:

Field	Required	Data Type	Details
Is Guaranteed	Yes	Boolean	<p>This checkbox marks the product as secured or unsecured.</p> <div> <p>NOTE</p> <p>The Collateral Cover Percent and Allow Collateral Partial Release fields and the Allowed Guarantee Types section appear when you select this checkbox.</p> </div>

Field	Required	Data Type	Details
Collateral Cover Percent	No	Whole number	The percent that the collateral person on the contract pays. It usually is over 100%.
Allow Collateral Partial Release	No	Boolean	A partial release is a mortgage provision that allows some of the collateral to be released from a mortgage after the borrower pays a certain amount of the loan.

Product Guarantees

Is Guaranteed

☒

Collateral Cover Percent

Allow Collateral Partial Release

☐

Allowed Guarantee Types

+ Insert

X Delete

Export

Refresh

<input type="checkbox"/>	Guarantee Type	Max Accepted Covering Percent
<input type="text" value="FixDeposit"/>	<input type="text" value="85.00"/>	

In the **Allowed Guarantee Types** section, displayed if the **Is Guaranteed** checkbox was selected earlier, you can insert or delete allowed guarantee types. To insert a guarantee type, click the **Insert** button and fill in the name, maximum accepted covering percent, and select the guarantee type.

Add Product Guarantee Structure

Product Guarantee Structure	
Banking Product	Guarantee Type
<input type="text" value="Card"/>	<input type="text" value="FixDeposit"/>
Max Accepted Covering Percent	Name
<input type="text" value="85"/>	<input type="text" value="Deposit"/>

Click the **Save and Reload** button at the top right corner of the page.

Product Tranches Section

In the **Product Tranches** section, insert existing disbursement tranches or create new ones, configured to fit the product. Usually used for corporate loans, such dividend payments or cash outflows are not done in equal amounts and usually trigger a recalculation in terms of interest.

Product Tranches

+ Insert
✕ Delete
📄 Export
🔄 Refresh

<input type="checkbox"/>	Name	Tranche Percent	Start Month From Acti...	Interest Percent
	🔍	🔍	🔍	🔍
	Tranche 1	50.0000		2.0000
	Tranche 2	50.0000		2.0000

Add multiple such disbursements by clicking the **Insert** button. You can add:

- Name.
- Tranche Percent (%): the percentage of the final amount that goes towards the disbursement.
- Start Month From Activation: the start month for the disbursement. It can be any month in the loan availability period.
- Interest Percent (%): the interest percent for that particular disbursement.
- Unusage Commission Percent (%): a commission paid for the loan amount unused.

Click the **Save and Reload** button at the top right corner of the page.

Payment Schedule Types Section

In the **Payment Schedule Types** section, the following fields are available:

Payment Schedule Types

Period Type	Periodicity Type	Grace Type	Product Grace
Months	Monthly	Both	GracePeriod

Field	Required	Data Type	Details
Period Type	No	Option set	<p>Select the period of availability for the product. Choose one:</p> <ul style="list-style-type: none"> • Days • Weeks • Months • Years • Once. <div> <p>NOTE</p> <p>The period type must be the same as the measurement unit of the Periodicity Type.</p> </div>

Field	Required	Data Type	Details
Periodicity Type	Yes	Option set	<p>Select the regularity of payments. Select one from the following:</p> <ul style="list-style-type: none"> • Once (the whole amount is paid at maturity) • Weekly • Monthly • Bimonthly • Trimestrial • 4 Weeks • Semestrial • Annual • 30Days. <div> <p>NOTE</p> <p>If the measurement unit of the selected Periodicity Type = Days, then Holiday Shift For Repayment Installments = False and it cannot be changed.</p> </div>

Field	Required	Data Type	Details
Grace Type	No	Option set	<p>Select whether the product grace should apply to the principal, the interest, or both. Select an option from the list:</p> <ul style="list-style-type: none"> • Both • Principal • Interest.
Product Grace	No	Option set	<p>Select an option from the list. This is the amount of time that the bank can offer to a customer at the beginning of the contract without repayments of principal or principal + interest (however, most probably the bank capitalizes the interest for that period of time).</p>

Click the **Save and Reload** button at the top right corner of the page.

Schedule Templates Section

In the **Schedule Templates** section, you can associate/ delete payment schedule types to/ from the banking product.

Schedule Templates

☐ Name

+ Insert existing

× Remove existing

Credit Card Installments

One principal installment

To associate a payment schedule type to the banking product, click **Insert Existing** and select one of the already defined types. Go to "[Payment Schedule Types](#)" on page 530 to read more about this.

IMPORTANT!

When creating a new Term Loan, Mortgage, or Overdraft banking product, you must select at least one payment schedule type, otherwise you can't approve the product. If the **Schedule Templates** section has no records, an error message is displayed upon transitioning the product into the **Approved** status: "At least one Payment schedule type definition must be selected for approval!"

Click the **Save and Reload** button at the top right corner of the page.

Holiday Settings Section

In the **Holiday Settings** section, the following fields are available:

Holiday Settings

Holiday Shift For Repayment Installments



Defer Due Date



Holiday Shift Method

Forward

Country Calendars

+ Insert existing

× Remove existing



Name



Romania

Field	Required	Data Type	Details
Holiday Shift For Repayment Installments	Yes	Boolean	<p>This checkbox marks if the holidays are considered for the calculation of the maturity schedule.</p> <div> <p>NOTE</p> <p>The Country Calendars section and the Defer Due Date and Holiday Shift Method fields appear if you select this checkbox.</p> </div>
Defer Due Date	Yes	Boolean	<p>If you select the checkbox, the payment schedule calculates the next payment amount as if the due date has not changed even when the due date falls on a holiday.</p> <p>This checkbox is selected by default.</p>

Field	Required	Data Type	Details
Holiday Shift Method	No	Option set	<p>Select from the list the method to be used when calculating the due date if that date falls to a holiday. The due date can be shifted before or after the holiday.</p> <p>Possible values:</p> <ul style="list-style-type: none"> • None - the due date is not shifted. • Forward - the due date is shifted to the next working day after the initially calculated due date. • Backward - the due date is shifted to the last working day before the initially calculated due date. <p>Default value: Forward.</p>

In the **Country calendars** section, you can insert or delete calendars. You can work with multiple calendars as well. Click the **Insert Existing** button and add the country's name. If the maturity date coincides with a holiday, it is allocated automatically on the next business day.

Click the **Save and Reload** button at the top right corner of the page.

Availability

The **Availability** tab determines the monetary range and the time frame when the product is available for customers.

BANKING PRODUCT FACTORY USER GUIDE

1 Main Info2 Details3 Availability4 Dimensions5 Product Formula Engine6 Documents7 Loan Core Settings8 History9 Origination Elements10 GL Settings

Product Availability

Minimum Amount

Maximum Amount

Minimum Period

Maximum Period

Minimum Advance

Maximum Advance

Start Period For Unusage After Activation(Months)

Maximum Period Disburse After Activation (Months)

Minimum Principal For Early Repayment

Availability Rules

Product Availability Item Filters

Product Covenants

Description

No data

Type

Covenant

Valid From

Valid to

Value

Affirmati...

Borrowers should perform tax obligations

01/01/2021

31/01/2030

Financial

Lender can monitor borrower's current r...

30/12/2020

31/01/2040

Negative

Lender posses the righ to prevent merg...

01/01/2021

31/01/2040

The following fields are available:

Field	Required	Data Type	Details
Minimum Amount	No	Whole Number	The minimum amount of the product for which the bank opens a contract.
Maximum Amount	No	Whole Number	The maximum amount of the product for which the bank opens a contract.
Minimum Period	No	Whole Number	The minimum duration of the product mentioned in the contract.
Maximum Period	No	Whole Number	The maximum duration of the product mentioned in the contract.
Minimum Advance	No	Numeric	The minimum advance percentage from the contract's financed value applicable at the contract level.
Maximum Advance	No	Numeric	The maximum advance percentage from the contract's financed value applicable at the contract level.
Start Period For Unusage After Activation (Months)	No	Whole Number	The start period for unused amount after the activation, in months.

Field	Required	Data Type	Details
Maximum Period For Disbursement After Activation (Months)	No	Whole Number	The maximum period of disbursement after the this option is set, in months. The number of months during which the disbursement must be made.
Minimum Principal For Early Repayment	No	Whole Number	The minimum principal for when early repayments are made.

Availability Rules Section

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see "[Product Filter](#)" on page 519.

Availability Rules

Product Availability Item Filters

☐ Description

CA >< 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Product Covenants Section

In the **Product Covenants** section you can set certain conventions that applicants must abide by after getting the loan. This is usually applicable for corporate clients that must meet certain requirements in order to continue to receive disbursements.

Product Covenants

<input type="checkbox"/>	Type	Covenant	Valid From	Valid to	Value
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Affirmati...	Borrowers should perform tax obligations	19/04/2022	20/04/2030	
	Financial	Lender can monitor borrower's current r...	19/04/2022	20/04/2030	

Click the **Insert** button to add a covenant to the product. Each covenant can be attributed a value, an availability period, and a review frequency in months. Read more about covenants in the ["Covenant" on page 567](#) page.

Click the **Save and Reload** button at the top right corner of the page.

Dimensions

The **Dimensions** tab displays the interests, commissions, insurances, discount and questions valid for a product.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Product Formula Engine 6 Documents 7 Loan Core Settings 8 History 9 Origination Elements 10 GL Settings

Interest & Commissions

☐ Item Name

 MCA

Discounts

Name	Discount	End Date	Start Date	Value Discount
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

No data

Insurances

☐ Item Name

 House Insurance

Questions

Question	Business Status
Question1	Active
Question2	Active

You can insert, delete or export interest, commissions, insurances, discounts or questions. To add a new one, click **Insert** and fill-in the fields detailed in the sections below.

NOTE

To configure the interest and commissions separately, navigate to **Main >**

Product Factory > **Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions Section

Click **Insert** to add an [interest](#) or a [commission](#). In the **Interest & Commission Item** page, fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Enter a code for this particular interest/ commission.
Item Name	Yes	Text	Enter a name.
Start Date	No	Date	The start date when the interest/ commission becomes effective.
End Date	No	Date	The end date for the interest/ commission.
Interest List	No	Option set	Select from which list the interest is a part of.
Commissions List	No	Option set	Select from which list the commission is a part of.
Minimum Interest Rate (%)	No	Numeric	Enter the percent applicable as a minimum interest rate at the contract level.
Is Negotiable	No	Boolean	Select the checkbox to specify that every interest, commission or margin field at the contract level is negotiable and can be edited.

Click the **Save and Reload** button at the top right corner of the page.

In the **Interest & Commission Item Filters** section, click **Insert** to insert an [item filter](#) and fill in the following fields:

Field	Required	Data Type	Details
Filter	Yes	Option set	Select a filter created earlier in the " Product Filter " on page 519 .

Field	Required	Data Type	Details
Value/ Date	No	Text/Date	Select the beginning value/ date for the filter.
Until Value/ Until Date	No	Text/Date	Select the maximum value/ date for the filter.
Description	No	Text area	This field is automatically filled in after clicking the Save and Reload button. The values/ dates inserted above are turned into an expression.
For Lookup attributes			
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Option Set	No	Option set	It is automatically filled in with the option set name created for the attribute.
Description	No	Text area	It is left blank. Add a description if needed.
Grid of Options	No	Grid	This field is automatically filled in after clicking the Save and Reload button. The values of the option set are displayed. Select the Boolean for the values you wish to include in the filter.



Save and close

Save and reload

Edit Interest & Commission Item Filter

Main Information

Filter

AL_Amount

Value

1

Until Value

50,000

Description

AL_Amount > < 1 - 50000

Click the **Save and Reload** button at the top right corner of the page.

Insurances Section

For any banking product, you can select a pre-existing insurance or create a new one. To add a new **insurance**, fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Option set	Select the banking product.
Code	No	Text	Insert a code for this particular insurance.
Item Name	Yes	Text	Insert a name.
Start Date	No	Date	It is the start date when the insurance becomes effective.
End Date	No	Date	It is the end date for the insurance.
Details	No	Text area	It is left blank. Add a description if needed.
Insurance List	No	Option set	Select from which list the insurance is a part of.

Click the **Save and Reload** button at the top right corner of the page.

← Save and close Save and reload

Edit Insurance Item

Main Information

Banking Product Code Item Name Insurance List Start Date End Date

Duplicate INS H Insurance InsuranceListIRON 19/04/2022 20/04/2030

Details

Insurance Item Filters

+ Insert X Delete Export Refresh

Description

Amount Insurance >< 1000 - 30000

In the **Insurance Item Filters** section, click **Insert** and fill in the following fields:

Field	Required	Data type	Description
Filter	Yes	Option set	The name inserted earlier.
Value	Yes	Text	The starting value for the attribute.
Until Value	Yes	Text	The ending value of the interval.
Description	No	Text area	Insert the proper description for the availability filter.

Click the **Save and Close** button at the top right corner of the page.

Discounts Section

For any banking product, you can add discounts of any nature. You can select a pre-existing discount or create a new one.

Click the **Insert** button to add a new [discount](#). In the **Details** page, fill in the following fields:

Field	Required	Data Type	Details
Name	Yes	Text	Insert the appropriate name for the discount.
Discount	No	Option set	Choose one of the pre-configured types of discounts or create a new one. According to the selected type, new fields appear on the page requiring to be filled in.
Value discount	No	Numeric	Insert the value of the discount to be applied, e.g. 15.
Start date	Yes	Date	It is the start date when the discount becomes effective.
End date	Yes	Date	It is the end date for the discount.
Applied to dimension	No	Option set	Specifies for which product dimension this discount is applicable (interest, commission or insurance). This is autocompleted by the selected discount's dimension.
Commission type	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount . Specifies for which commission type this discount is applicable. This is autocompleted by the selected discount's default commission type.

Field	Required	Data Type	Details
Commission	No	Lookup	This field appears if the selected discount = Commission discount or Management Fee Discount. Specifies for which commission this discount is applicable. This is autocompleted by the selected discount's default commission.
Insurance class	No	Lookup	This field appears if the selected discount = Discount Life Insurance or Interest Discount. Specifies for which insurance class this discount is applicable (credit, home, life or other insurance class). This is autocompleted by the selected discount's insurance class.
Insurance	No	Lookup	This field appears if the selected discount = Discount Life Insurance. Specifies for which insurance this discount is applicable. This is autocompleted by the selected discount's insurance.
Interest type	No	Lookup	This field appears if the selected discount = Interest discount. Specifies for which interest type this discount is applicable.
Use Banking Formula	No	Boolean	If you select this checkbox, the discount is calculated using the Banking Formula engine.
Is optional discount?	No	Boolean	Selecting this checkbox results in the discount being applied only if the customer agrees to the discount.

Field	Required	Data Type	Details
Is percentage	No	Boolean	If you select this checkbox, the discount is calculated as a percentage from the contract's amount.
Destination entity	No	Option set	Select the entity where to register the discount. This field opens when the Is optional discount? checkbox is selected.
Destination entity attribute	No	Option set	Select the attribute where to register the discount. This field opens when the Is optional discount? checkbox is selected.

Click the **Save and Reload** button at the top right corner of the page.

In the **Product Discount Item Filter** section, click **Insert** and fill in the fields as specified in the **Product Filter page**. The fields displayed depend on the selected filter.

Click the **Save and Reload** button at the top right corner of the page.

Questions Section

Choose one or more questions to add to the banking product, or insert a new one.

To insert a new [question](#), click **Insert existing**, then click **Insert**. In the **Add Banking Product Question page**, fill in the following fields:

Field	Required	Data type	Description
Question	No	Text	Enter the appropriate name.
Answer Type	No	Option set	Select the type of answer the customer has to give: <ul style="list-style-type: none"> • text • numeric • option set.
Answer Entity	No	Option set	Select the entity where the answer is stored.

Field	Required	Data type	Description
Answer Field	No	Option set	Select the attribute where the answer is stored.

Click the **Save and Reload** button at the top right corner of the page.

The **Banking Products List** shows where the question is used.

IMPORTANT!

The question has to be activated in order for it to be added to the banking product.

Click the **Save and Close** button at the top right corner of the page.

For example, this is how a question is displayed in a digital journey in the FintechOS Portal:

The screenshot shows a digital journey interface titled "EDIT LOAN APPLICATION". Below the title, there's a section for "Eligibility Questions" with the instruction: "We ask for this information so that we can carry out the checks needed to consider you for a mortgage". The form contains three fields: "DEPOSIT SOURCE" (a dropdown menu), "RETIREMENT DATE" (a date picker), and "RETIRED" (radio buttons for "Yes" and "No", with "No" selected). A "Finish" button is located at the bottom right of the form.

Product Formula Engine

The **Product Formula Engine** tab keeps formulas built with **Formula Engine** for the banking product. Such formulas can be used to determine the eligibility of a customer.

The screenshot displays the "Product Formula Engine" tab in a software interface. It features a navigation bar at the top with tabs numbered 1 to 10, with "Product Formula Engine" (tab 5) selected. Below the navigation bar, there are two main sections: "Banking Product Formulas" and "Test Scenarios". Each section has a table with columns for Name, Formula Type, and Formula. The "Banking Product Formulas" table shows a single entry with Name "CA", Formula Type "CommissionFormula", and Formula "commissionByAmount". The "Test Scenarios" table shows a single entry with Name "Duplicate-19/04/2022_11:07:57" and Formula Type "CommissionFormula". Both sections have buttons for "+ Insert", "X Delete", "Export", and "Refresh".

Banking Product Formulas Section

In the **Banking Product Formulas** section, choose an already defined formula or click **Insert** to configure a new one, for example a formula for eligibility or scoring purposes. For information on how to build a formula, see [Define Formula Inputs](#).

In the **Add Banking Product Formula** page, fill in the following fields:

Field	Required	Data type	Description
Name	Yes	Text	Enter an appropriate name.
Banking Product	No	Option set	The name of the banking product is inserted automatically.
Formula Type	Yes	Lookup	Select the type of formula configured before, e.g. scoring /eligibility.
Formula	Yes	Lookup	Select the previously configured formula. <div> IMPORTANT! The formula must be activated before attaching it to a product. </div>
Data Mapping	No	Lookup	Select the previously configured data mapping.

After selecting the desired formula, click **Save and reload**, then click **Map Data**.

← Save and close Save and reload

1 Definition 2 Input 3 Output

Formula parameter mapping

Data Mapping Type Banking Product

Master Entity FTOS_CB_Contract

Operation Name test

Name BPFormulaType_Test Formula_1647267821582_formula

In the **Formula Mapping** page, click **Input** and configure the input data for the formula.

Click **Output** and configure the output for the formula.

← Save and close Save and reload

1 Definition 2 Input 3 Output

FTOS_CB_Contract - Output

× step1 click to map

Click the **Save and Close** button at the top right corner of the page.

Such formulas can be used in digital journey steps, for example when the customer inserts their financial data.

← CURRENT STATUS: INITIALIZED NEXT STATUS: CHOOSE STATUS- →

EDIT RETAIL APPLICANT DATA

Income & Outgoings

We use your expected income and outgoings to work out how much we'll be able to lend and to ensure that any mortgage we may offer you is affordable.

WHAT IS YOUR ANNUAL SALARY BEFORE TAX? €

ARE YOU MARRIED? [none]

EDUCATION LEVEL: [none]

PAYING MONTHLY FOR OTHER LOANS: €

NUMBER OF CHILDREN: 0

EMPLOYMENT STATUS: [none]

TOTAL CREDIT CARDS LIMITS: €

CHILDCARE AND EDUCATION COSTS: €

EMPLOYMENT MONTHS:

OTHER SPENDINGS: €

HOW MANY FINANCIAL DEPENDANTS: 0

YOUR RESIDENCE IS: [none]

LIFE, HEALTH INSURANCE AND PRIVATE PENSIONS: MAINTENANCE FOR DEPENDANTS: YOUR RENT IS:

Test Scenarios Section

A good practice is to test the formula before displaying it in a digital journey. You can do that in the **Test Scenarios** section.

Click **Insert** to open the **Add Test Scenario** page.

Insert a **Test Scenario Type** from the option set. The keys and the values are shown. Click the **Save and Reload** button at the top right corner of the page.

Click the **Calculate** button. The outputs are displayed in the **Test Scenario Outputs** section. These outputs can be saved by selecting the **Save Output Data** checkbox next to **Calculate**.

Documents

The **Documents** tab contains all the attached documents available for a product.

Banking Product Documents Section

The previously associated documents are displayed in the **Banking Product Documents** section.

To attach a new document to the banking product, click **Insert** and fill in the following fields:

Field	Data Type	Description
Operation Code	Whole number	Enter a code for the document.
Banking Copies No	Whole number	Insert the number of copies made.
Report	Lookup	Select a document from the list.
Document Type	Option set	Select a document type from the list.
Is Mandatory	Boolean	Select if the document is mandatory.
Includes Debtor	Boolean	Select if the document includes the debtor.
Includes Coborrower	Boolean	Select if the document includes the co-borrower.
Requires Signature	Boolean	Select if the document requires to be signed.
Is accord	Boolean	Select if the document represents the accord.

← Add Banking Product Document

Banking Product Document

Operation Code: Banking Copies No: Report: Document Type:

Is Mandatory: ☒ Yes ☐ No Includes Debtor: ☐ Yes ☒ No Includes Coborrower: ☐ Yes ☒ No Requires Signature: ☐ Yes ☒ No

Is Accord: ☐ Yes ☒ No

Save and close Save and reload Save and new

Click the **Save and Close** button at the top right corner of the page.

Banking Products Agreements Section

The agreements that a customer needs to go through are displayed in the **Banking Products Agreements** section.

To attach a new agreement to the banking product, click **Insert** and fill in the following fields:

Field	Required	Data Type	Description
Agreements	Yes	Option set	Select an agreement from the list.
Banking Product	Yes	Option set	It is automatically filled in.
Code	No	Whole number	Insert the corresponding code.
Is Mandatory	No	Boolean	Select if the agreement is mandatory for the product.

Click the **Save and Close** button at the top right corner of the page.

For more information on how to configure a contract or an agreement, see the [Digital Document Processor](#).

Lean Core Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

Transactions types that are performed to and from a banking product are displayed in the **Lean Core Settings** tab. The tab also holds information about the reconciliation account associated with the products, mandatory roles for contract approval, payment allocation settings, the treatment of returned goods for contracts based on this banking product (only for Term Loans and Mortgage banking products), and closing contract settings.

Self Bank Account Associated With The Product Section

For each banking product, you must select a reconciliation account, which is the bank account to be used for transactions.

Next to the **Reconciliation Account** field, select a value from the list to be the current account from which or to which the money is wired from or to.

NOTE

This account must have the same currency as the product, because the translations are performed from and into this account.

Select a value for the **Negative Value Treatment** drop-down to specify how Core Banking treats situations when the funds of the reconciliation account associated with the banking product used in the contract would go below zero if a disbursement event would be approved. The possible values are:

- **Error** - there is an error message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account"*

<account_name> has a balance lower than the amount to debit!'. The event can't be approved and the balance can't go below zero. Select this value if you want to block any transactions that would result in a negative balance of the reconciliation account associated to the banking product.

- **Warning** - there is a warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account: *"Reconciliation bank account <account_name> has a balance lower than the amount to debit!'*. The event can be approved and the balance can go below zero.
- **NoMessage** - there is no error or warning message displayed if the disbursement event that is being approved would result in a negative balance of the associated reconciliation account. The event can be approved and the balance can go below zero.

NOTE

Core Banking also has a system parameter, `ReconciliationAccountTreatment`. That is a system-wide setting, applicable to events for contracts based on all banking products without a specified `Negative balance treatment` value. Core Banking takes into consideration the settings used at the banking product level (the `Negative balance treatment` field's value). Thus, if the value is specified at the banking product level, then that value takes precedence over the system parameter's setting.

If you associate the same reconciliation account to more than one banking product, then the setting selected in banking product A is applied for contract events based on banking product A, while for the banking product B, Core Banking would apply the setting selected at the level of banking product B.

Payment Allocation Settings Section

This section holds the payment allocation settings. This is where you can decide which allocation method should be used to determine the order in which credit items are prioritized when repaying loans, credit accounts, and so on. You can also define the grace period settings.

Payment Allocation Settings

Repayment Allocation Method

CostOrder



Grace Days for Repayment

5

Penalty for grace period

☐

Fill in the following fields:

Field	Required	Data Type	Details
Payment Allocation Method	No	Lookup	The payment allocation method represents the recovery order of amounts from payment notifications. Select a payment allocation method from the list.
Grace Days for Repayment	No	Whole number	Insert the number of days for which the bank expects a payment without calculating penalty.
Penalty for grace period	No	Boolean	If you select the checkbox, the penalty interest is applied on the loan contract without taking into consideration the grace period defined at contract level, being calculated for the difference between system date - due date, if the grace period passed and the customer didn't pay the due amounts. If you leave this checkbox unselected, the penalty interest is applied on the loan contract taking into consideration the grace period defined at contract level, being calculated for system date - due date + grace days for repayment.

Click the **Save and Reload** button at the top right corner of the page.

Mandatory Roles for Contract Approval Section

The **Mandatory Roles** section allows you to add the roles of the participants that are mandatory to exist at the contract level for contracts based on this banking product. In other words, when creating contracts based on banking products with Merchant role in this section, you must add a customer with the same Merchant role as contract participant, otherwise, the contract cannot be approved. When **Search Limit** is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role, in this case **Merchant Exposure**.

Mandatory Roles for Contract Approval

The interface for 'Mandatory Roles for Contract Approval' includes a header with four buttons: '+ Insert', 'X Delete', 'Export', and 'Refresh'. Below the header is a form area. On the left, there is a checkbox labeled 'Role'. To its right is a 'Search Limit' dropdown menu, which is currently set to '(All)'. At the bottom of the form, there is a checkbox labeled 'Beneficiary'.

In the **Mandatory Roles** section, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Banking Product	Yes	Lookup	The banking product for which you define mandatory roles. This is automatically completed with the current banking product.
Role	Yes	Option Set	Select the role of the participants that are mandatory to exist at the contract level for contracts based on this banking product.

Field	Required	Data Type	Details
Search Limit	Yes	Boolean	<p>When Search Limit is selected for a role on a banking product, Core Banking checks if the contract participant with this role has an attached limit configured with a limit type associated to the same role.</p> <p>If you select a role not associated with a customer limit type in Core Banking, the Search Limit field becomes read-only and unselected.</p>

← Add Mandatory Role

Save and close Save and reload Save and new

Main Information

Banking Product Duplicate Role Merchant Search Limit ☒

Click the **Save and Reload** button at the top right corner of the page.

Return Of Goods Section

IMPORTANT!

This section is displayed only for **Term Loan** and **Mortgage** banking products.

The fields within this section allow you to define whether a contract based on the banking product can have Returned Amount or Goods transactions or not, and the specific conditions for these transactions. The Returned Amount or Goods transaction type can be used when a customer returns all or part of a loan or mortgage in a short while after contract creation, if the banking product was defined to allow such transactions. You can set up Return Fee type commissions, to return all or some of the claimed commission to the borrower.

To configure the treatment of returned goods for contracts based on this banking product, fill in the following fields:

Field	Required	Data Type	Details
Allow Return Of Goods	Yes	Boolean	Select this checkbox if the contracts based on this banking product accept Return of Goods transactions. Default value: False. If selected, the Accepted Days For Return and Return Message fields are displayed, otherwise, these fields are not visible.
Accepted Days For Return	Yes	Whole Number	Specify the number of days after contract creation during which the return of goods transaction can be created and approved.
Return Message	Yes	Option Set	<p>Select the behavior of messages generated by Core Banking for situations when the Returned Amount or Goods transaction's approval date + the number of accepted days for return \geq the current date. Possible values are taken from the Warning Error Treatment option set. According to the desired behavior, choose:</p> <ul style="list-style-type: none"> • Error, if the transaction should not be approved and an error message should be displayed; • Warning, if the transaction can be approved, but a warning message should be displayed; • NoMessage, if the transaction can be approved without any messages.

Return Of Goods

Allow Return Of Goods



Accepted Days For Return



Return Message



Click the **Save and Reload** button at the top right corner of the page. If Allow Return Of Goods = True, then the Returned Amount of Goods transaction is automatically added to the **Transaction Types** section.

Closing Contract Settings Section**IMPORTANT!**

This section is displayed only for **Term Loan** and **Mortgage** banking products.

In the **Closing Contract Settings** section, you can configure the default closure settings for contracts based on this banking product.

Closing Contract Settings

Buffer Close Days

Close Real Time



Closing Is Flexible



Contract Is Closed Automatically



Fill in the following fields:

Field	Required	Data Type	Details
Buffer Close Days	No	Whole Number	Enter the number of days used as buffer before automatically closing the contract when the contract reaches maturity and its balance reaches zero. If Buffer Close Days > 0, then Contract Is Closed Automatically = False.

Field	Required	Data Type	Details
Close Real Time	No	Boolean	If you select this checkbox, the contract based on this banking product is closed in real-time, when the contract reaches maturity and its balance reaches zero, without waiting for the end of day processes. If Close Real Time = True, then Buffer Close Days = 0 and Contract Is Closed Automatically = True.
Closing Is Flexible	No	Boolean	If you select this checkbox, the closure details of the contract based on this banking product can be modified at the contract creation.
Contract Is Closed Automatically	No	Boolean	If you select this checkbox, the contract based on this banking product is closed automatically at maturity, if the balance reaches zero. If Contract Is Closed Automatically = False, then Close Real Time = False.

Click the **Save and Close** button at the top right corner of the page.

Allowed Transactions Section

In the **Allowed Transactions** section, you can associate possible transaction types with the selected banking product. Click **Insert existing** and select the desired transaction types.

Double-click a selected transaction type to edit it.

Transaction Configuration

Save and close

Save and reload

Edit Transaction Type

Settings

Name

Disbursement

Transaction Code

DSB

Process Type

Disbursement

Edit Form

FTOS_CB_EventDisbursement

Transaction Operation Type

Disbursement

Is System Transaction

☐

Is Automatic Transaction

☐

Real Time Process

☐

Only One Draft

☒

Generate New Contract Version

☐

Commission Type

Return Commission Type

Accounting Configurations

Generates Accounting Entry

☒

OL Master Entity

FTOS_CB_ContractEvent

Purge Configurations

To Be Purged

☒

Purge Number of Days

30

Master Purge Entity

FTOS_CB_ContractEvent

Transaction Value Types

+ Insert

X Delete

Export

Refresh

Transaction Type

Type

Value Type Name

Is Header

Value Type Attrib...

Q

Q

Q

(All)

Q

Transaction Item Accounting Configurations

+ Insert

X Delete

Export

Refresh

Transactio...

Accountin...

Accountin...

Chart Acc...

Currency

Operation...

Take From...

Q

Q

Q

Q

Q

Q

Q

Q

In the **Edit Transaction Type** section, fill in the following fields:

Field	Required	Data Type	Details
Settings			
Name	Yes	Text	Name of the transaction type.
Transaction Code	Yes	Text	The code of the transaction type.
Is Automatic Transaction	Yes	Boolean	This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations.
Is System Transactions	No	Boolean	This checkbox marks the transaction as being neither a credit of the account, nor an allocation of funds, but a transaction that does not influence other transactions within the account. System transactions are meant to be used only for accounting.

MANAGING BANKING PRODUCTS

450

Field	Required	Data Type	Details
Real Time Process		Boolean	This checkbox marks the transaction as to be processed in real-time. If the value is True, then the transaction is processed right away. If the value is False, then the transaction is inserted as a bank account transaction queue record.
Edit Form	No	Lookup	The form used to edit this transaction type. The lookup only shows forms defined on the Contract Event entity.
Only One Draft	No	Boolean	If you select this checkbox, there can be only one record of this transaction type in Draft status created at the contract level.
Generate New Contract Version	No	Boolean	This checkbox allows you to specify if a new contract version should be generated by this transaction type.
Commission Type	No	Lookup	The commission type applicable for this transaction type. Return fee commissions are filtered out and can't be selected.
Return Commission Type	No	Lookup	The return fee commission type applicable for this transaction type. Only return fee commissions can be selected.

Field	Required	Data Type	Details
Process Type	Yes	Option set	<p>This field associates the process type with the transaction operation type, which makes the connection with the transaction motor of bank accounts. Select one of the processes defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div>
Accounting Configurations			
Generates Accounting Entry	Yes	Boolean	This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity.
OL Master Entity	Yes	Lookup	The entity referenced by the accounting systems.
Purge Configurations			
To Be Purged	No	Boolean	This checkbox marks the transaction as purgeable. If selected, it allows you to purge or archive records in Draft status.
Purge Number of Days	Yes	Whole Number	The default number of calendar days that a record can be kept in Draft status before it is purged. For additional information, see the Core Banking System Parameters page. This field is displayed only when To Be Purged = True.

Field	Required	Data Type	Details
Master Purge Entity	Yes	Lookup	The master purge entity under which the draft records are. This field is displayed only when To Be Purged = True.

You can also edit the information in the **Transaction Value Types**, **Transaction Item Accounting Configurations** and **Transaction Accounting Models** sections. Read more details about Transaction Types in the **Operational Ledger** User Guide.

Click the **Save and Close** button at the top right corner of the page.

The following transaction types are typically used for term loans:

- **Accruals and Provisions** - System transaction. If added at banking product level, the accruals and provisions for contracts can be calculated on a daily basis.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Disbursement** - If added at banking product level, the requested funds are transferred into the customer's account.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Early repayment** - If added at banking product level, the customer can make a payment earlier than the stated maturity date of the contract.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Payment Holiday** - If added at banking product level, the official bank holidays are considered when calculating a payment schedule.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Repayment** - If added at banking product level, the customer can make a payment to cover the scheduled repayment amount.
This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Repayment Notification** - If added at banking product level, the system generates and displays in the contract a repayment notification after each disbursement, containing the total amount to be paid off. This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Reschedule Overdues** - If added at banking product level, the system extends or adds extra time to an existing contract. This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Reschedule Debt** - If added at banking product level, the system recalculates the entire payment schedule by extending the time period for loan repayment. This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Returned Amount or Goods** - If added at banking product level, the **Returned Amount of Goods** transaction type can be used when a customer returns all or part of a loan in a short while after contract creation. You can set up **Return Fee** type commissions, to return all or some of the claimed commission to the borrower. This transaction type is not added automatically. Make sure you select the **Allow Return Of Goods** checkbox in the **Return of Goods** section within the **Associated Transactions** tab.
- **Revert Disbursement** - If added at banking product level, disbursements performed at contract level can be reverted after being performed. This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.
- **Revert Transfer between my bank accounts** - System transaction. If added at banking product level, transfers between the same customer's bank account can be reverted after being performed. This transaction type is not added automatically. Make sure you insert it in the **Associated Transactions** tab.

- **Transfer between my bank accounts** - If added at banking product level, the customer is allowed to move funds between their accounts at the contract level.
This transaction type is automatically added in the **Associated Transactions** tab if **Allow Withdrawals** was selected in the **Details** tab.

History

The **History** tab displays the versions of the banking product, their workflow status and the user who modified the product.

Label	Name	attributeVersionDate	attributeVersion	Modified by user
Draft	Duplicate	19/04/2022 10:29	1	

Here you can track the product's life cycle and review older versions that are no longer active (for details, see ["Banking Products' Life Cycle"](#) on page 595).

Origination Elements

The **Origination Elements** tab holds the elements required in origination journey, such as product benefits, display conditions, features, destination types, or associated products.

Product Image
ProductImage.JPG
Add file or Drop file here

Document
ProductPresentationDoc.pdf
Add file or Drop file here

Benefits
Quick Approval
Low Interest Rates

Display Conditions

Product Features
+ Insert X Delete Export Refresh
Feature Display Name Show Order
NMNGTFEES No Management ... 1

Product Destination Types
+ Insert existing X Remove existing
Display Name
Personal

Associated Products
+ Insert existing X Remove existing
Name
Current Account USD

You can fill in the following fields:

Field	Required	Data Type	Details
Product Image	No	File	Insert an image representative for the product.
Document	No	File	Insert the document representative for the product.
Benefits	No	Text area	Insert the advantages of owning the banking product. You can format the text in the text editor window.
Display Conditions	No	Text area	Insert the conditions for the applicant, e.g. age limit, annual turnover, education level, income, registration documents.

Click the **Save and Reload** button at the top right corner of the page.

Product Features Section

In the **Product Features** section, you can insert, delete or export features. To add a feature, click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Feature	No	Text	Enter the name of the product feature.
Is Main Feature	No	Boolean	Select the checkbox if it is the major feature.
Display Name	No	Text	Enter the display name of the feature.

Click the **Save and Reload** button at the top right corner of the page.

Product Destination Types Section

The **Product Destination Types** section allows for insertion or removal of existing product destination types. Click **Insert existing** and select one of the existing destination types, or insert a new one. To create a new destination type, insert a name and specify if it is default. For this case, the following have been configured:

- Loan Collateral
- Loan disbursements
- Personal
- Repayments.

Associated Products Section

The **Associated Products** section allows for insertion or removal of existing products. It is especially useful when you wish to create a link between two products. You can insert or remove a product from the list or create a new one.

Associated Products

+ Insert existing
X Remove existing

☐ Name

Current Account USD

Click the **Save and Reload** button at the top right corner of the page.

GL Settings

NOTE

This tab is available only when Banking Product Factory is implemented along with Core Banking.

In the **Banking Product GL Accounts** section, you can set specific accounts to be used by the **Operational Ledger** system for transactions performed on

contracts based on this banking product. Thus, you can overwrite the generic settings of the Operational Ledger, instructing it to use the accounts specified at banking product level.

To add specific accounts to be used by **Operational Ledger**, click **Insert** and fill in the following fields in the displayed **Add Banking Product GL Account** page:

Field	Required	Data Type	Description
Product	Yes	Option set	Select from the list the banking product. Automatically completed with the banking product you are currently editing.
Accounting System	Yes	Option set	Select from the list the desired accounting system. The list contains the records created in the FTOS_GL_AccountingSystem entity.
Accounting Scope	Yes	Option set	Select from the list the corresponding accounting scope. The list contains the records created in the FTOS_GL_AccountingScope entity.
Item	No	Option set	Select from the list the corresponding transaction item. The list contains the records created in the FTOS_GL_TransactionItemAccountingConfig entity.

Field	Required	Data Type	Description
GL Account	Yes	Option set	Select from the list the corresponding GL account. The list is filtered based on the previously selected accounting system. It contains the accounts defined in the FTOS_GL_AccountingChart entity that were added to the chosen accounting system record.

Click the **Save and Reload** button at the top right corner of the page.

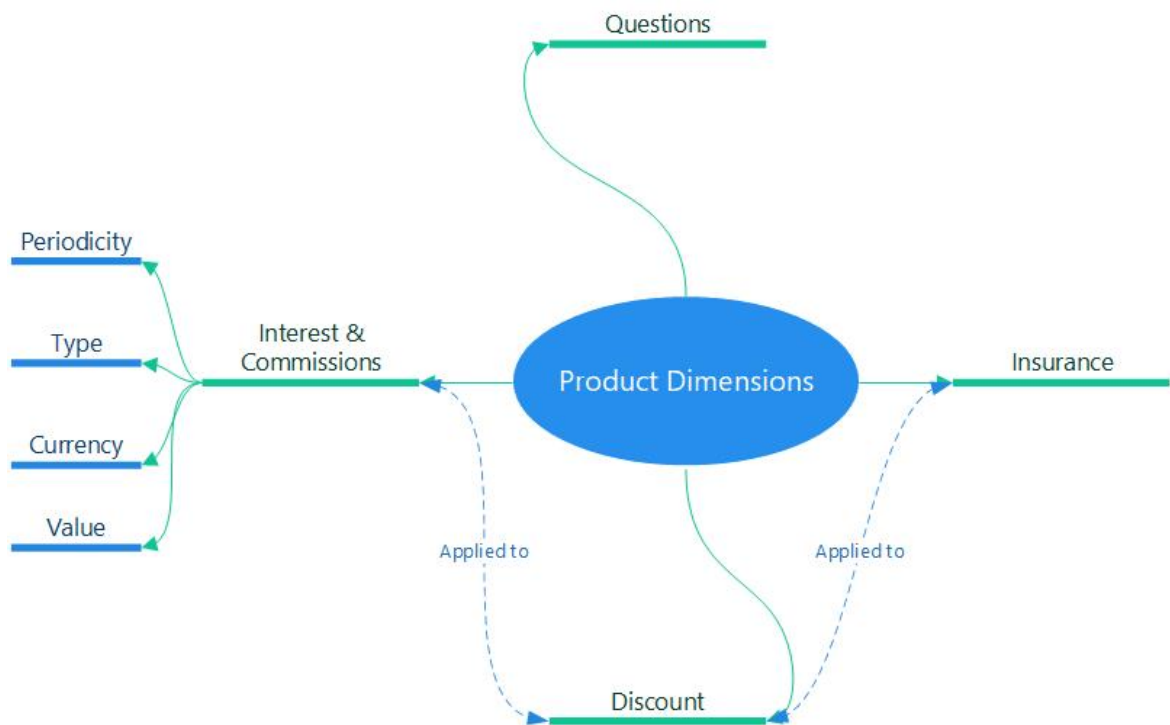
Product Dimensions

Product dimensions group together the notions of interest and commissions. Such notions transcend the banking product offered to a customer, presenting the configurations for the finance world. The **Product Dimensions** menu in Innovation Studio is a convenient place to manage the variety of interest rates and the multitude of commissions used for different banking products.

Since inflation affects the interest, it is mandatory to keep track of the changes, to register any new values for the rates and apply them to customers. Commissions are equally important, they represent the fees the bank has for offering a product or service. Fees keep the business going, being a steady flow of money to the bank's revenue. To stay competitive, banks apply discounts to the two mentioned above. For contracting a loan, for example, a customer takes on an insurance. This insurance is part of the product dimensions. Lastly, to determine important details about a customer when they are applying for a product, it is important to have questions for the "Know Your Customer" process to determine their eligibility.

The **Product Dimensions** menu allows you to manage the following dimensions:

- Commissions
- Commissions list
- Interest
- Interest list
- Insurance
- Insurance list
- Discounts
- Questions.



There are two possible options for building the product dimensions:

- Expand the **Banking Product Dimensions** menu and configure each of the items enumerated above with its respective menu in the Innovation Studio.
- Another option is to start building the banking product and configure the dimensions in the banking product's page > **Dimensions** tab.

Managing Interests and Commissions

Interests and commissions are set up independently from the banking products. They are available in banking products in the form of interest lists or commission lists respectively, after they have been grouped together based on their use.

Interests	462
Interest Definition Best Practices	473
Interest Lists	480
Commissions	481

Commission Definition Best Practices

490

Commission Lists

504

Item Filters

506

Interests

Innovation Studio has a dedicated menu item, **Interests**, to aid the users in creating and updating interests and applying them to a product. There are three main types of interests: fixed, base and variable. Banks can set up variable interests for loans and also calculate the amount each customer has to pay.

The following picture illustrates how the interests can be shown in a loan origination digital journey:

CURRENT STATUS
INITIALIZED

NEXT STATUS
CHOOSE STATUS

0%

100%

240

Total borrowed amount € 190400

OPTIONAL DISCOUNTS

Insurance

1%

No

Income Receiving

1%

No

INTEREST TYPE

Fixed

PAYMENTS

Loan Equal Installments

Interest Percent

8.00%

DAE

8.8%

First Installment

1670.61

First Insurance

0

Total Insurance

0

First Fee

78.03

Total Fee

11426.15

Total

384663

Schedule

Start application

To manage interests:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory-> Banking Product Dimensions**.

4. Click **Interests** to open the **Interest List** page.

+ Insert

Delete

Export

Advanced find

Interest list

<input type="checkbox"/>	Code	Name	Interest Type	Base Interest
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	BandedEUR_C2	BandedEUR_C2	Variable	IRCC 3M
	BandedEUR_C3	BandedEUR_C3	Fixed	
	BIB1M	BIBOR 1 Month	Base Type	
	BIB12	BIBOR 1 YEAR	Base Type	
	BIB2M	BIBOR 2 Month	Base Type	

5

10

20

1

2

3

4

5

...

5. In the **Interest List** page, you can:

- Add a new interest by clicking the **Insert** button at the top right corner.
- Edit an existing interest from the list by double clicking it.
- Delete an interest by selecting it and clicking the **Delete** button at the top right corner.

The **Edit Interest** page allows you to configure interest settings.



Edit Interest

Main Information

Code

BIB1M

Name

BIBOR 1 Month

Interest Type Settings

Interest Type

Base Type

Reference Interest Period

1M

Interest Value

+ Insert

✕ Delete

📄 Export

🔄 Refresh

<input type="checkbox"/>	Value	Status	Valid From	Valid To
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	1.30	Active	02/01/2020	05/02/2020
	1.06	Active	07/02/2020	31/03/2020
	1.26	Active	01/04/2020	31/05/2020
	1.08	Active	06/02/2020	06/02/2020

HINT

Read about how and when to use each interest type on the dedicated [Interest Definition Best Practices](#) page.

Adding Interests

To create a new interest, click the **Insert** button on the top right side of the page. In the newly opened **Add Interest** page, fill in the following fields from the **Interest** section:

Field	Required	Data Type	Details
Code	Yes	Text	Insert a code for this particular interest.

BANKING PRODUCT FACTORY USER GUIDE

Field	Required	Data Type	Details
Name	Yes	Text	Insert a name.
Is Default	No	Boolean	Select the checkbox if the interest is a default one.
Use Banking Formula	No	Boolean	Select the checkbox if the interest is of type Banking Formula.

Field	Required	Data Type	Details
Interest Type	Yes	Option set	<p>Select the type of interest:</p> <ul style="list-style-type: none"> • Fixed - the interest has one value during the validity period. • Base Type - used for calculating the variable type, i.e. ROBOR. • Variable - an interest rate formed from a Base Type interest + a variable percent, e.g. EURIBOR + 4%. • Collection - a combination of previously defined fixed and/or variable interest rates. • Banking Formula - an interest rate that can be defined as a banking formula from the Formula Engine. <div> <p>IMPORTANT! If you choose Variable, a new field Base Interest is displayed.</p> </div>

Field	Required	Data Type	Details
Base Interest	Yes	Lookup	Only displayed for variable interest types. Select (or insert) the base type interest used for calculating the variable interest.
Reference Interest Period	No	Option set	Choose the interest reference period (where M = months, Y = years): <ul style="list-style-type: none"> • 1M • 1Y • 2M • 3M • 6M
For Sight Deposit	No	Boolean	Used only for deposits when the interest is at sight. It is used when a customer wishes to end a deposit before the maturity date (end date). The customer does not receive the full interest, but a sight interest because the deposit has not reached its maturity.
Is For Overdraft	No	Boolean	If this interest is an interest applicable to the overdraft amount of a contract based on a banking product that allows overdraft operations, select this checkbox. If the Interest Type = Collection, then the Banded Interests section is displayed for you to enter the banded interests.

Field	Required	Data Type	Details
Is Penalty	No	Boolean	<p>If this interest is a penalty interest, select this checkbox. Penalty interests are only possible for loans.</p> <div><p>IMPORTANT!</p><p>If you select this checkbox, two new fields, Is General and Apply to Loan Item (If Overdue) are displayed.</p></div>

Field	Required	Data Type	Details
Is General	Yes	Boolean	<p>Only displayed for interests applicable as penalties. If selected, this penalty interest is applied to all the loan contract's operation items that are overdue for payment, instead of having to define different penalty interests for each operation item that is subject to penalty interest calculation on a contract. This can be useful when you need to define one mass penalty interest to be applied to all the overdue amounts subject to penalty interest calculation resulting from repayment schedule processing.</p> <p>If a banking product has in its attached interests list an interest with Is General = True, then at the contract level the penalty percent is applied to all operation items that are overdue and are marked with Include In Penalty Calculation = True.</p> <div> <p>NOTE</p> <p>You can specify which operation items should be used by Core Banking for penalty interest calculation within the Add/ Edit</p> </div>

Field	Required	Data Type	Details
			<p>Operation Item pages, selecting the Include In Penalty Calculation checkbox and then selecting an item from the Penalty Item (for Repayment Notification) list. Read more about operation items in the Core Banking user guide.</p> <p>An interest list cannot contain a penalty interest with Is General = True and another penalty interest with Is General = False.</p>
Applied To Loan Item (If Overdue)	Yes	Boolean	Only displayed for interests applicable as penalties that have Is General = False . Select the operation item of the loan contract for which the penalty interest is applied.
Is Credit Line Interest	No	Boolean	Interest that is applicable to the credit line.
Is Debit Order Interest	No	Boolean	Interest that is applicable at each debit order.
Description	No	Text area	Insert a description for the interest.

Click the **Save and Reload** button at the top right corner of the page.

Interest Value

The **Interest Value** section is available only for Fixed, Base Type, and Variable interest rates . Insert the values (usually the interest rate index to your margin) by filling in the following fields:

Edit Interest Value

Field	Data Type	Description
Value	Numeric	Interest rate percentage.
Valid From	Date	Select the day when the interest rate becomes applicable.
Valid To	Date	Select the last day when the interest rate is applicable.

NOTE

The margin is placed in a variable interest.

Click the **Save and Reload** button at the top right corner of the page.

Interest Rates Collections

The **Interest Rates Collections** section is available only for **Collection** type interests. Such collections can hold more than one interest types, each with its own start period and installment. This is useful for example, when applying a fixed interest rate for the first 7 years of a mortgage loan, and applying a variable interest rate for the remaining period.

Insert the values in the section fields:

Field	Data Type	Description
Master Interest	Text	The name of the interest.
Interest	Option set	Select a previously defined interest.
Collection Item Start Date	Date	Select the day when the interest rate becomes applicable.
Collection Item End Date	Date	Select the last day when the interest rate is applicable.

Field	Data Type	Description
Start Period (Installment No)	Whole Number	Select the first installment when the interest rate becomes applicable.
End Period (Installment No)	Whole Number	Select the last installment when the interest rate is applicable.

Click the **Save and Reload** button at the top right corner of the page.

Banded Interests

The **Banded Interests** section is available only for **Collection** type interests with **Is For Overdraft = True**. Banded interests are interest rates that can be defined as collections of values that applied depending on the amount. For example, the bank wants to apply an interest rate of 5% for used amount between 1 and 10,000, an interest rate of 4.5 % for the used amounts between 10,001 and 20,000, and an interest rate of 4% for used amounts surpassing 20,001.

Insert the values in the section fields:

Field	Required	Data Type	Description
Interest	Yes	Option set	Select a previously defined interest. Only Fixed and Variable type interests are displayed for selection.
Min Utilized Amount	Yes	Numeric	Enter the minimum used amount to apply this interest.
Max Utilized Amount	Yes	Numeric	Enter the maximum used amount to apply this interest.
Collection Valid From	Yes	Date	Select the date when the interest rate becomes applicable.
Collection Valid To	Yes	Date	Select the last day when the interest rate is applicable.

Click the **Save and Reload** button at the top right corner of the page.

Banking Formula Interest Rate

When creating an interest rate based on a banking formula, the **Use Banking Formula** checkbox is selected. In addition, the **Banking Formula Type** field allows you to pick from already defined banking formulas. Click the arrow next to the field. A list of available banking formulas opens. Click the **Insert** button to create a new banking formula. Add a name for the banking formula. Insert or create an interest, banking product formulas, and test scenarios.

After all configurations are made, the interest options are displayed in a Digital Journey in the following way:

The screenshot displays the 'Banking Product Factory' interface. At the top, a progress bar shows the current status as 'INITIALIZED' and the next status as 'CHOOSE STATUS'. Below this, the 'Total borrowed amount' is € 190400. The interface is divided into two main sections: 'OPTIONAL DISCOUNTS' and 'INTEREST TYPE'. Under 'OPTIONAL DISCOUNTS', there are two rows: 'Insurance' with a 1% discount and a 'No' toggle, and 'Income Receiving' with a 1% discount and a 'No' toggle. Under 'INTEREST TYPE', there is a dropdown menu with 'Fixed' selected. Below this, under 'PAYMENTS', there is a dropdown menu with 'Loan Equal Installments' selected. On the right side, there is a blue box containing a summary table of interest options. The table has two columns: the option name and its value. The options are: Interest Percent (8.00%), DAE (8.8%), First Installment (1670.61), First Insurance (0), Total Insurance (0), First Fee (78.03), Total Fee (11426.15), and Total (384663). At the bottom of the blue box, there are two buttons: 'Schedule' (green) and 'Start application' (white).

Interest Percent	8.00%
DAE	8.8%
First Installment	1670.61
First Insurance	0
Total Insurance	0
First Fee	78.03
Total Fee	11426.15
Total	384663

Interest Definition Best Practices

This page presents a series of recommendations about defining interests to be used in conjunction with banking products and contracts based on these banking products. For step by step instructions on how to add interests and how to fill in each field on the page, please read the dedicated [Interests](#) page.

General Notes

- The validity period of an interest (the period between the values entered in the **Valid from** and **Valid to** fields) is taken into consideration when searching for the values of each interest.
- The system performs validations to ensure that the time intervals for interest validity do not overlap. It also ensures that the interest has a valid value at any given time of a contract's life cycle.
- Penalty calculations are applied to overdue payment amounts in contracts, while interests are applied to remaining payment amounts.
You can specify that an interest is penalty if you select the **Is Penalty** checkbox in the **Interest** page:

← Edit Interest Save and close Save and reload

Main Information		Interest Special Settings			
Code	Name	Is For Overdraft	Is Credit Line Interest	Is Debit Order Interest	For Slight Deposit
EU 6M	Euribor 6M	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interest Type Settings		Penalty Type Interest Settings			
Interest Type	Base Interest	Is Penalty			
Variable	Euribor 6M Reference	<input checked="" type="checkbox"/>			

IMPORTANT!

We advise against defining collection interests for penalties. Instead, create interests for penalties using [Business Formulas](#).

The following sections display examples of each interest type's typical definition:

Fixed Interest

The fixed interest has one value during the validity period.

Define fixed interests by selecting **Interest Type = Fixed** and entering values for determined intervals of time.

The following picture shows how the value of a fixed interest differs depending on its validity period:

Save and close

Save and reload

Edit Interest

Main Information

Code

F16

Name

Corporate Fix Interest 6%

Interest Type Settings

Interest Type

Fixed

Interest Value

+ Insert

X Delete

Export

Refresh

Value	Status	Valid From	Valid To
6.00	Active	01/01/2019	31/10/2019
6.00	Active	01/01/2020	31/12/2021
2.25	Active	01/11/2019	31/12/2019

Interest Special Settings

Is For Overdraft

☐

Is Credit Line Interest

☐

Is Debit Order Interest

☐

For Slight Deposit

☐

Penalty Type Interest Settings

Is Penalty

☐

Base Type Interest

The base type interest is used for calculating the variable type, i.e. EURIBOR or IRCC. The EURIBOR base type interest is updated on a daily bases by the European Central Bank.

Define base type interests by selecting Interest Type = Base Type and entering values for determined intervals of time.

The following picture shows how the value of a base type interest differs depending on its validity period:

PRODUCT DIMENSIONS

475

Edit Interest

Main Information

Code: BIB1M Name: BIBOR 1 Month

Interest Type Settings

Interest Type: Base Type Reference Interest Period: 1M

Interest Value

+ Insert X Delete Export Refresh

Value	Status	Valid From	Valid To
1.30	Active	02/01/2020	05/02/2020
1.06	Active	07/02/2020	31/03/2020
1.26	Active	01/04/2020	31/05/2020
1.08	Active	06/02/2020	06/02/2020

Variable Interest

The variable interest is an interest rate formed from a Base Type interest + a variable percent, e.g. EURIBOR + 4%.

Define variable interests by selecting Interest Type = Variable, selecting a predefined base interest from the list, then entering values for the variable percents for determined intervals of time.

The following picture shows how the value of a variable interest differs depending on its validity period:

Edit Interest

Code

FB1M

Name

Corporate Floating BIBOR 1M

Interest Type Settings

Interest Type

Variable

Base Interest

BIBOR 1 Month

Interest Value

+ Insert

X Delete

Export

Refresh

Value	Status	Valid From	Valid To
1.80	Active	01/01/2019	30/06/2019
2.00	Active	01/01/2020	01/01/2022
1.90	Active	01/07/2019	31/12/2019

Interest Special Settings

Is For Overdraft

Is Credit Line Interest

Is Debit Order Interest

For Slight Deposit

Is Penalty

Penalty Type Interest Settings

Collection Interest

The collection interest is a combination of previously defined fixed and/ or variable interest rates. It can be used for fixed to float interest contracts. The validation of each composing interest is performed on intervals. For example, for a term loan contract, the bank may apply a fixed interest for the first 12 months of the contract, then for the second and third year another fixed interest, and then for the remaining period a variable interest rate.

Define collection interests by selecting Interest Type = Collection, then selecting predefined interests as elements of the collection that are applicable on specific time intervals and depending on the contract's number of installment. The system performs validations to ensure that the time intervals and the installment intervals do not overlap and no time or installment interval is left undefined.

The following picture shows how the value of a collection interest differs depending on the contract's number of the installments:

Edit Interest

Main Information

Code:

Name:

Interest Special Settings

Is For Overdraft: ☐

Is Credit Line Interest: ☐

Is Debit Order Interest: ☐

For Slight Deposit: ☐

Interest Type Settings

Interest Type:

Interest Rates Collections

☐ Interest

Collection Item Start Date:

Collection Item End Date:

Start Period (Installment No):

End Period (Installment No):

Banded Interest for Current Accounts with Overdraft

The banded interest, applicable for contracts based on current account with overdraft banking products, can be defined as a collection of values that is applied depending on the amount. For example, the bank wants to apply an interest rate of 5% for borrowed amount between 1 and 999.99, an interest rate of 3 % for the amounts between 1000 and 3999.99, and an interest rate of 4.9% for amounts surpassing 4000.

Example of a banded interest:

FromValue	ToValue	InterestRate
0	999.99	5
1000	3999.99	3
4000	10000000	4.9

Define several banded interests by selecting Interest Type = Fixed or Interest Type = Variable and entering values for determined intervals of time. Later, create a Collection interest type, select the **Is For Overdraft** checkbox, and use the previously defined banded interests to define the values applicable for overdraft amount intervals.

The following picture shows how three banded interests are used within a collection type interest to define bands of different value to be applied for different amounts of overdraft contracts:

BANKING PRODUCT FACTORY USER GUIDE

Edit Interest

Main Information

Code

BandedEUR

Name

BandedEUR

Interest Special Settings

Is For Overdraft

☒

Is Credit Line Interest

☐

Is Debit Order Interest

☐

For Sight Deposit

☐

Interest Type Settings

Interest Type

Collection

Banded Interests

+ Insert

X Delete

Export

Interest	Min Utilized Amount	Max Utilized Amount	Collection Valid From	Collection Valid To
BandedEUR_C1	0.00	999.99	30/01/2024	31/12/2021
BandedEUR_C2	1,000.00	3,999.99	01/01/2021	31/12/2021
BandedEUR_C3	4,000.00	10,000,000.00	01/01/2021	31/12/2021

Edit Interest

Main Information

Code

BandedEUR_C1

Name

BandedEUR_C1

Interest Type Settings

Interest Type

Fixed

Interest Value

+ Insert

X Delete

Export

Refresh

Value	Status	Valid From	Valid To
5.00	Active	01/01/2021	31/12/2021

Edit Interest

Main Information

Code

BandedEUR_C2

Name

BandedEUR_C2

Interest Type Settings

Interest Type

Variable

Base Interest

IRCC 3M

Interest Value

+ Insert

X Delete

Export

Refresh

Value	Status	Valid From	Valid To
1.00	Active	01/01/2021	31/12/2021

Edit Interest

Main Information

Code

BandedEUR_C3

Name

BandedEUR_C3

Interest Type Settings

Interest Type

Fixed

Interest Value

+ Insert

X Delete

Export

Refresh

Value	Status	Valid From	Valid To
4.90	Active	01/01/2021	31/12/2021

IMPORTANT!

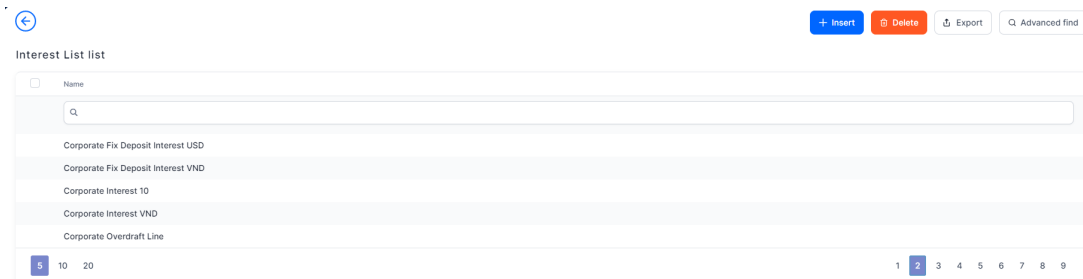
Banded interest can be used only for **Current Account with Overdraft** banking products.

Interest Lists

An interest list allows you to group multiple interests into a collection of interests that you can use in a banking product. You can group under the same umbrella the following types of interests created individually in the ["Interests" on page 462](#): variable interest, base type and fixed interest.

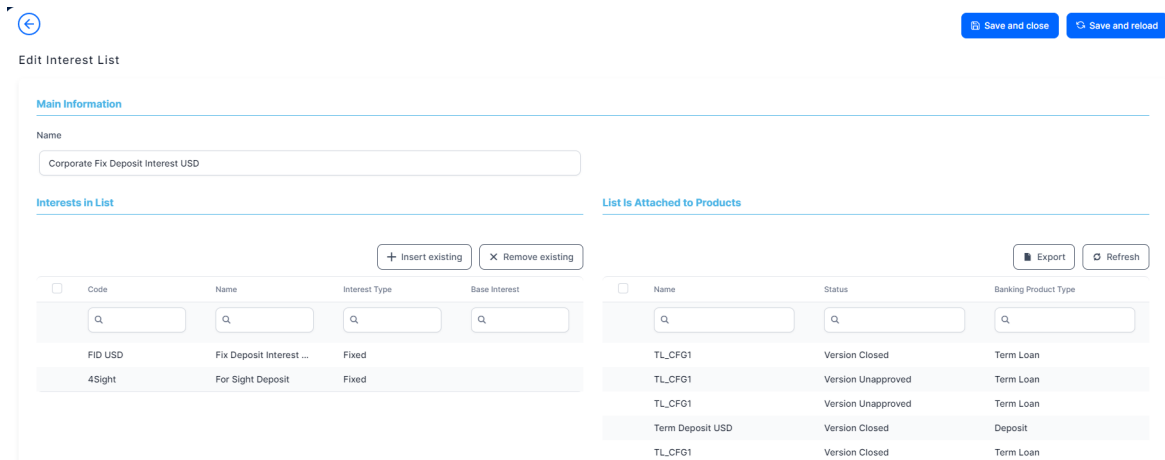
To manage interest lists:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory** -> **Banking Product Dimensions**.
4. Click **Interest List** to display the **Interest List list** page.



5. In this page, you can:
 - Add a new interest list by clicking the **Insert** button at the top right corner of the page.
 - Edit an interest list from the section by double clicking it.
 - Delete an interest list from the section by selecting it and clicking the **Delete** button at the top right corner of the page.

The **Edit Interest List** page allows you to configure interest list settings.



← Edit Interest List Save and close Save and reload

Main Information

Name
Corporate Fix Deposit Interest USD

Interests in List + Insert existing X Remove existing

Code	Name	Interest Type	Base Interest
FID USD	Fix Deposit Interest ...	Fixed	
4Sight	For Sight Deposit	Fixed	

List is Attached to Products Export Refresh

Name	Status	Banking Product Type
TL_CFG1	Version Closed	Term Loan
TL_CFG1	Version Unapproved	Term Loan
TL_CFG1	Version Unapproved	Term Loan
Term Deposit USD	Version Closed	Deposit
TL_CFG1	Version Closed	Term Loan

Adding Interest Lists

To create a new interest list, follow these steps:

1. Click the **Insert** button on the top right side of the page. The **Add Interest List** page is displayed.
2. Enter a **Name** for the interest list.
3. Click the **Save and Reload** button at the top right corner of the page.
4. Click the **Insert existing** button to add the applicable interests in the **Interest** section.
5. Click the **Save and Close** button at the top right corner of the page.

Commissions

Commissions are the fees taken by the bank for offering a product or service such as opening an account, for cash withdrawals, for transfers, for making payments in certain countries, for exchanging currencies, for emitting debit cards, for handling documents etc. These commissions vary from bank to bank, based on their policy. Innovation Studio has a dedicated menu for managing commissions in order for a bank to build its network of commissions. These commissions are grouped into lists and attached to banking products, so they reach the contracts.

To manage commissions:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory**-> **Banking Product Dimensions**.
4. Click **Commissions** to open the **Commission List** page.

← + Insert Delete Export Q Advanced find

Commission list

Name	Commission Type	Currency	Commission Percent Applied To	Periodicity Type	Commission Value Is Percentage
30days	Front-end Fee	EUR		Once	<input type="checkbox"/>
Admin Fee	Administration Fee	EUR	Financed Value	Monthly	<input checked="" type="checkbox"/>
Administration Fee ODV	Administration Fee	EUR	Overdraft Limit Amount	Monthly	<input checked="" type="checkbox"/>
Administration OV	Administration Fee	EUR		Monthly	<input type="checkbox"/>
Analysys Fee 50.	Front-end Fee	EUR		Once	<input type="checkbox"/>

5 10 20 1 2 3 4 5 ...

5. In the **Commission List** page, you can:

- Add a new commission by clicking the **Insert** button at the top right corner of the page.
- Edit an existing commission by double-clicking it.
- Delete a commission by selecting it and clicking the **Delete** button at the top right corner of the page.

The **Edit Commission** page allows you to configure commission settings.

← Save and close Save and reload

Commission

Main Information

Name 30days Commission Type Front-end Fee Currency EUR Periodicity Type Once Is For Unusage ☐

Mandatory For Applicant ☐ Automatic Load On Contract ☒ Is For Contract Version ☐ Commission Value Is Percentage ☐

Is Included Into Repayment Schedule Installment ☐ Use Banking Formula ☐

Commission Value

+ Insert X Delete Export Refresh

Commission Percent	Commission Value	Valid From	Valid To	Status
10.00	03/09/2021	30/09/2030	Active	

IMPORTANT!

The value of a commission used in active contracts cannot be edited. Instead, you can modify the value's validity and add a new value with a future validity period. For details, see the [Editing The Value Of A Commission Already In Use](#) section.

HINT

Read about how and when to use commissions based on their periodicity type on the dedicated [Commission Definition Best Practices](#) page.

Adding Commissions

To create a new commission, click the **Insert** button on the top right side of the page. In the newly opened **Add Commission** page, fill in the following fields from the **Commission** section:

Field	Data Type	Details
Name	Text	Enter the name of the commission.

Field	Data Type	Details
Commission type	Option set	<p>Choose one from the following:</p> <ul style="list-style-type: none"> • Administration Fee • Commission Undrawn Amount (overdraft) Monthly • Commission Undrawn Amount (overdraft) Once • Commission Unusage Monthly • Commission Unusage Once • Commission Usage Monthly • Commission Usage Once • Front-end Fee • Management Fee • Payment Holiday Fee • Repayment Fee • Return Fee. <div> IMPORTANT! The types have a periodicity already set: once/ monthly/ trimester etc. </div>
Periodicity type	Option set	Automatically filled-in when you choose the commission type.
Status	Option set	Select either Active or Draft to enable or disable the commission.
Currency	Option set	Select the currency of the commission from the drop-down.
Is For Unusage	Boolean	Select this checkbox if the commission is applied for amount unused from the contract's amount. Usually this commission is applied for unused overdraft amounts.

Field	Data Type	Details
Commission value is percentage	Boolean	Select this checkbox if the commission is measured by percentage, not as a fixed value.

Field	Data Type	Details
Commission percent applied to	Option set	<p>Only displayed if you select the checkbox next to the Commission value is percentage field. Choose one of the following:</p> <ul style="list-style-type: none"> • Remaining value - the percentage applies to the contract's remaining to be repaid value . • Financed value - the percentage applies to the contract's financed value. • Paid value - the percentage applies to the anticipated payment performed on the contract. • Unused amount - the percentage applies to the contract's unused amount from the granted value. • Used amount - the percentage applies to the contract's used amount from the granted value. • Overdraft limit amount - the percentage applies to the contract's overdraft limit amount. • Amount - the percentage applies to the contract's amount. <p>For Term Loan, Mortgage or Overdraft banking products the calculation method is as follows: If percentAppliedTo =</p>

Field	Data Type	Details
		<p>financedAmount, then $\text{financedAmount} = \text{amountDue} - \text{advanceAmount};$ If percentAppliedTo = amount, then $\text{financedAmount} = \text{amountDue};$ If percentAppliedTo = remainingValue, then, if Contract Status = ContractVersionDraft, then $\text{financedAmount} = (-1) * \text{mainBankAccountBalance}.$ No negative values are allowed, so if the result is negative, then $\text{financedAmount} = \text{null}.$ Default value $\text{financedAmount} = \text{null}.$</p> <p>For Current Account with Overdraft banking products the calculation method is as follows: If percentAppliedTo = overdraftLimitAmount, then $\text{financedAmount} = \text{overdraftLimitAmount};$ If percentAppliedTo = usedAmount, then if (periodType == Once), $\text{financedAmount} = \text{overdraftLimitAmount} - \text{availableAmountForOverdraft},$ else $\text{financedAmount} = \text{null}.$ Default value $\text{financedAmount} = \text{null}.$</p>
Is included in repayment schedule installment	Boolean	If true and the Periodicity Type is not Once, the commission is included into the Repayment Schedule (should be provided with a column where to put this Commission).
Automatically load on contract	Boolean	Select this checkbox if the commission should be automatically loaded on the contracts based on banking products using this commission.

Field	Data Type	Details
Mandatory for applicant	Boolean	This checkbox makes the commission mandatory to be paid by a customer. If the bank negotiated with a customer to not pay this commission, put the value zero.
Use Banking Formula	Boolean	Select the checkbox if the commission is to be defined with an attached business formula for value.
Is For Contract Version	Boolean	<p>Select the checkbox if the commission is applied when a new version of the contract is created.</p> <div> <p>NOTE</p> <p>If a version for a contract is created more than once on the same day, then all commissions with Is For Contract Version = True that were not notified yet for each previous version are deleted. At the end of the day, there is only one commission for the latest version.</p> </div>
Is Return	Boolean	This field is only visible and true if Commission Type = Return Fee. Automatically filled-in when you choose Commission Type = Return Fee, read-only. The selected checkbox means that the commission is a return fee, a commission to be paid back to the borrower following a Returned Amount or Goods event on a loan or mortgage contract. Read more information about return fees .
Is Returnable	Boolean	This field is only visible if Commission Type = Front-End Fee. Select this checkbox if the commission can be paid back to the borrower following a Returned Amount or Goods event on a loan or mortgage contract.

Field	Data Type	Details
Banking Formula Type	Lookup	<p>Select the banking formula type to be used for commission calculation. This field is visible and mandatory to be filled in when Use Banking Formula = True.</p> <div> <p>IMPORTANT!</p> <p>Select CommissionFormula banking formula type for the Return Fee commission type. Thus, at banking product definition level, you can select ReturnCommissionFormula in the Banking Product Formulas section of the Risk Formulas tab. Used in Returned Amount or Goods events on a loan or mortgage contract, this dedicated formula's result = (SUM of all Front-End Fee type commissions with Is Returnable = True)* [(Returned amount)/(Loan amount)].</p> </div>

Click the **Save and Reload** button at the top right corner of the page.

In the **Commission value** section, insert or delete the values of the commission.

← Save and close Save and reload Save and new

Add Commission Value

Commission Percent Commission Value Valid From Valid To

To add a new commission value, click **Insert** and fill in the following fields in the newly opened **Commission** page:

Field	Data Type	Details
Commission percent	Numeric	The percent representing the commission. If the commission percentage > 100, Banking Product Factory displays a warning message: "Make sure percent value is accurate."
Commission value	Numeric	The value of the commission.
Valid from	Date	Select the day when the commission value becomes applicable.
Valid to	Date	Select the last day when the commission value is applicable.

Click the **Save and Close** button at the top right corner of the page.

Commission Definition Best Practices

This page presents a series of recommendations about defining commissions to be used in conjunction with banking products and contracts based on these banking products. For step by step instructions on how to add commissions and how to fill in each field on the page, please read the dedicated [Commissions](#) page.

General Notes

- Each commission type has a specific periodicity. Some commissions are taken once within a contract, others can occur monthly, and others when a specific contract event occurs. When you select the **Commission Type**, the **Periodicity Type** is automatically filled in by the system.

- If you select the **Is Included Into Repayment Schedule Installment** checkbox for a commission and the **Periodicity Type** is different than **Once**, then the commission is included into the repayment schedule. Note that the repayment schedule should be provided with a column to place the commission.

Let's say you define an Administration Fee or a Management Fee with the **Is Included Into Repayment Schedule Installment** checkbox selected:

When defining the payment schedule type detail, you only need to select the fee type and not the actual fee:

- Please only define maximum one commission of each type with the **Is Included Into Repayment Schedule Installment** checkbox selected for every banking product.
- If you select the **Mandatory for Applicant** checkbox for a commission, then, at contract level, the commission cannot be deleted, but its value can be edited.
- If you select the **Is For Unusage** checkbox for a commission, then you are defining a commission for the unused amount of a contract and the **Commission Percent Applied To** field is automatically completed with the **Unused Amount** value.

- If you select the **Commission Value Is Percentage** checkbox for a commission, then the values of the commission can only be percentages. In this case, you must select the contract's operation item to which the commission's percent must be applied. The operation item must be selected from the **Commission Percent Applied To** drop-down. If you deselect the **Commission Value Is Percentage** checkbox, then the values of the commission can only be numeric values.
- The validity period of a commission (the period between the values entered in the **Valid from** and **Valid to** fields) is taken into consideration when searching for the values of each commission type.
- The system performs validations to ensure that the time intervals for the same commission's validity do not overlap. It also ensures that the commission has a valid value at any given time of a contract's life cycle.

Editing The Value Of A Commission Already In Use

The system does not allow you to modify the value of a commission already in use in active contracts. However, the bank may decide to alter its commission values starting next month, so the new values must be entered into the system.

The following instructions show how to edit the value of a commission attached to a banking product with **Approved** status and having contracts based on that banking product.

1. On the **Commission List** page, double-click the commission whose value has to be changed. The **Edit Commission** page is displayed.
2. In the **Commission Value** section, select the value that is in its validity period and double-click it.

Commission

Main Information

Name: DFADVANCE Commission Type: Front-end Fee Currency: EUR Periodicity Type: Once Is For Unusage: ☐

Mandatory For Applicant: ☒ Automatic Load On Contract: ☒ Is For Contract Version: ☐ Commission Value Is Percentage: ☒ Commission Percent Applied To: Financed Value

Is Included Into Repayment Schedule Installment: ☐ Use Banking Formula: ☐

Commission Value

+ Insert X Delete Export Refresh

Commission Percent	Commission Value	Valid From	Valid To	Status
10.00		14/06/2021	31/07/2021	Active
12.50		01/08/2021	31/12/2021	Active

- On the newly displayed **Edit Commission Value** page, change the date from the **Valid To** field into the last day when this commission value should be used in contracts.

Edit Commission Value

Commission Percent: 12.5 Commission Value: Valid From: 01/08/2021 Valid To: 30/04/2022

- Click the **Save and Close** button at the top right corner of the page.
- Back in the **Commission List** page, in the **Commission Value** section, click the **Insert** button. The **Add Commission Value** page is displayed.
- Complete the fields for the new commission value record, filling in the new **Commission Percent** or **Value**. Make sure the date entered in the **Valid From** field is the next day after the previous commission value is not active anymore. Enter a date further in the future for the **Valid To** field. Select the **Active** status for the new commission value record.

← Save and close Save and reload Save and new

Add Commission Value

Commission Percent: 13.5 Commission Value: Valid From: 01/05/2022 Valid To: 31/07/2022

- Click the **Save and Close** button at the top right corner of the page.

8. Back in the **Commission List** page, in the **Commission Value** section, observe the newly added commission value, valid starting the next day after the previously existent commission value ends its validity.

Commission Value

+ Insert X Delete Export Refresh

Commission Percent	Commission Value	Valid From	Valid To	Status
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
10.00		14/06/2021	31/07/2021	Active
12.50		01/08/2021	30/04/2022	Active
13.50		01/05/2022	31/07/2022	Active

Contracts created after the new commission value's **Valid From** date automatically use the new commission value.

The following sections display examples of the typical definition commissions grouped on their periodicity:

One-Time Fee (Once) Commissions

One-time fees are commissions that the bank requires to be paid once and not on a regular basis during the contract's life cycle.

NOTE

For Once periodicity type commissions applied to loan contracts, the Percentage commission values should not be applied to **Used** or **Unused Amount**.

For **Front-End Fee** commission types with default Once periodicity type, the Percentage commission values should not be applied to **Remaining Value**.

For Once periodicity type commissions with the **Is For Contract Version** checkbox selected, the commission is posted on new contract versions if the **Automatic Load On Contract** checkbox is also selected. For commissions thus defined, the Percentage commission values can be applied to **Remaining Value**, but not to **Used Amount** or **Unused Amount**.

Other than the previously described situation, we advise against defining Once periodicity type commissions with the **Is For Contract Version** checkbox selected.

The following example illustrates a one-time fee of 0.02% applied to the paid value of early repayment on contracts. The commission is not included into the repayment schedule of installments, it is not automatically loaded on the contract or mandatory for the applicant:

Commission

Main Information

Name

RepaymentFee EUR %

Commission Type

Repayment Fee

Currency

EUR

Periodicity Type

Once

Is For Unusage

☐

Mandatory For Applicant

☐

Automatic Load On Contract

☐

Is For Contract Version

-

Commission Value Is Percentage

☒

Commission Percent Applied To

Payed Value

Is Included into Repayment Schedule Installment

☐

Use Banking Formula

☐

Commission Value

+ Insert

X Delete

Export

Refresh

<input type="checkbox"/> Commission Percent	Commission Value	Valid From	Valid To	Status
<input type="checkbox"/>	0.02	01/01/2021	31/12/2031	Active

IMPORTANT!

All the Front-End Fee commission types with Once periodicity type applied to a contract are notified and must be paid when the contract is approved. The [Core Banking system parameter FrontEndFee](#) defines the type of commission that is automatically notified at the contract approval.

CURRENT STATUS

APPROVED

NEXT STATUS

CLOSED

CONTRACT NUMBER

3569

ACTIVATION DATE

20/08/2021

CREATED BY

vladb

VERSION

2

VERSION DATE

20/08/2021 03:00

CONTRACT CATEGORY

Normal

Tooltips On

☒

Refresh

FEES & COMMISSIONS

Refresh

<input type="checkbox"/> Fee	Currency	Fee Date	Percent Fee	Value Fee	Periodicity Type
Commission Applied To Amount	EUR	20/08/2021	10.0000	12.50	Monthly
Corporate Loan Term Front-End Fee EUR	EUR	20/08/2021	4.0000	51.00	Once
RepaymentFee EUR	EUR	20/08/2021		18.50	Once

CURRENT STATUS

PROCESSED

EDIT REPAYMENT NOTIFICATION

REPAYMENT NOTIFICATION

No.

199204

Contract

3569

Currency

EUR

Notification Date

20/08/2021

Maturity Date

20/08/2021

Total Amount

276

REPAYMENT NOTIFICATION DETAILS

Export

Refresh

<input type="checkbox"/> Operation Item	Value	RemainingValue	Is Paid
Front-end Fee	51.00	0.00	<input checked="" type="checkbox"/>
Advance	225.00	0.00	<input checked="" type="checkbox"/>

PAYMENT ALLOCATIONS

<input type="checkbox"/> Payment No.	Payment Date	Operation Item	Allocated Amount	DueDate	Delay (days)
9828	20/08/2021	Front-end Fee	51.00	20/08/2021	0
9828	20/08/2021	Advance	225.00	20/08/2021	0

Periodical Commissions

Periodical commissions are required to be paid on a regular basis during the contract's life cycle, monthly or every 3 months depending on the commission type's defined periodicity. For such commissions, the `Is Included Into Repayment Schedule Installment` checkbox is automatically selected and the commission is included into the repayment schedule. The repayment schedule template should be provided with a column to place this commission type.

For periodical type commissions, such as commissions with `Periodicity Type = Monthly`, if you leave the `Commission Value Is Percentage` checkbox unselected, then the commission values are defined as straight forward values. Make sure that the formula in the repayment schedule template has the following types defined: fixed value, linear, linear on year.

If you select the `Commission Value Is Percentage` checkbox, then you can select the contract's operation item to which the percentage must be applied. The possible options are those listed in the drop-box next to `Commission Percent Applied To` field:

- `Remaining value` - the percentage applies to the contract's remaining to be repaid value .
- `Financed value` - the percentage applies to the contract's financed value.
- `Paid value` - the percentage applies to the anticipated payment performed on the contract.
- `Unused amount` - the percentage applies to the contract's unused amount from the granted value.
- `Used amount` - the percentage applies to the contract's used amount from the granted value.
- `Overdraft limit amount` - the percentage applies to the contract's overdraft limit amount.
- `Amount` - the percentage applies to the contract's amount.

NOTE

For term loan, mortgage, current account and deposit contracts, do not define commissions with Commission Percent Applied To = Overdraft limit amount.

Define and use commissions with Commission Percent Applied To = Overdraft limit amount for contracts based on current account with overdraft banking products.

The following example illustrates a monthly 0.15% commission applied to the unused amount of contracts. The commission is included into the repayment schedule of the monthly installments and it is automatically loaded on the contract:

Commission

Main Information

Name Commission Undrawn Amount (overdraft) EUR Monthly	Commission Type Commission Undrawn Amot	Currency EUR	Periodicity Type Monthly	Is For Unusage <input type="checkbox"/>
Mandatory For Applicant <input type="checkbox"/>	Automatic Load On Contract <input checked="" type="checkbox"/>	Is For Contract Version -	Commission Value Is Percentage <input checked="" type="checkbox"/>	Commission Percent Applied To Unused Amount
Is Included Into Repayment Schedule Installment <input checked="" type="checkbox"/>		Use Banking Formula <input type="checkbox"/>		

Commission Value

+ Insert X Delete ■ Export ↻ Refresh

<input type="checkbox"/> Commission Percent	Commission Value	Valid From	Valid To	Status
<input type="text" value="0.15"/>	<input type="text" value="0.15"/>	<input type="text" value="01/01/2021"/>	<input type="text" value="31/12/9999"/>	Active

Commissions Attached to Contract Transactions

The banks can define commissions for performing certain transactions (events) on contracts.

These commissions can also be defined with straight forward values or as percentages.

NOTE

For commissions attached to contract transactions, do not select the Automatically load on contract checkbox.

For such commissions, the Percentage commission values should not be applied to Used Amount or Unused Amount.

If the Is Negotiable checkbox is selected at product level when adding an

interest & commission item, then at transaction level the value or percentage of the commission brought from the banking product level can be edited, otherwise the commission cannot be changed.

The following example illustrates a commission applied to an early repayment contract event. You can see the same commission mentioned as a repayment notification detail after approving the event:

Event

Contract

1000

Customer

Yahine

Transaction Type

Early Repayment

Currency

EUR

Event Date

27/07/2021

Event Value

1,019.54

Charge Fee

Repayment Fee EUR

Repayment Fee Percent

Fee For Repayment

16.54

REPAYMENT VALUES

Repayment Principal Amount

1,000

Interest Value

1.04

Other Fees Total Value

0

Future Installments No

12

Keep Contract Period

☒

UNPAID INFO

No	Due Date	RemainingValue	Interest	Principal	TotalAmount
1	27-07-2021	1,380.00	1.04	1,000.00	1,381.04
1	05-08-2021	6,500.00	7.22	546.64	653.86
2	05-09-2021	5,953.36	24.61	528.95	594.76
3	05-10-2021	5,423.41	22.60	522.16	554.76
4	05-11-2021	4,891.25	20.38	504.98	514.76
5	05-12-2021	4,356.87	18.15	486.61	494.76

EDIT REPAYMENT NOTIFICATION

REPAYMENT NOTIFICATION

No

1000

Contract

1000

Currency

EUR

Notification Date

27/07/2021

Maturity Date

27/07/2021

Total Amount

1,019.54

REPAYMENT NOTIFICATION DETAILS

Export

Refresh

Operation Item	Value	RemainingValue	IsPaid
Repayment Fee	16.54	16.54	<input type="checkbox"/>
Other Interest	1.04	1.04	<input type="checkbox"/>
Loan Principal	1,000.00	1,000.00	<input type="checkbox"/>

As you see below, when performing an early repayment contract event and on the banking product's commissions list there is a commission with the same type as the commission placed in the event, then the event automatically retrieves the commission from the list defined at the banking product level:

BANKING PRODUCT FACTORY USER GUIDE

Edit Interest & Commission Item

Main Information

Banking Product

TLAUTODISB

Item Name

Onboarding Loan I&C

Start Date

27/01/2020

End Date

04/04/2050

Settings

Interest List

TermLoan Eur

Minimum Interest Rate

4

Commission List

Term Loan Eur

Is Negotiable

☒

Edit Commission List

Main Information

Name

Term Loan Eur

Commissions in List

+ Insert existing

X Remove existing

☐

Name

Q

CA Administration Fee

Commission Applied To Amount

Commission to Remaining Value

Corporate Loan Term Front-End Fee EUR

Management Fee EUR Monthly

New Contract Version Commission

Payment Holiday Fee

RepaymentFee EUR

List Is Attached to Products

Export

Refresh

☐

Name

Status

Banking Product Ty...

Q

Q

Q

TL Commission ...

Version Closed

Term Loan

Term Loan Euro

Version Unappro...

Term Loan

Term Loan Euro

Version Closed

Term Loan

Term Loan Euro

Version Unappro...

Term Loan

Term Loan Euro ...

Version Closed

Term Loan

LoanEURPHfee

Version Draft

Term Loan

Term Loan Euro

Version Closed

Term Loan

Term Loan Euro

Version Closed

Term Loan

The commission used within the example presented above is defined as follows:

Commission

Main Information

Name

RepaymentFee EUR

Commission Type

Repayment Fee

Currency

EUR

Periodicity Type

Once

Is For Unusage

☐

Mandatory For Applicant

☐

Automatic Load On Contract

☐

Is For Contract Version

☒

Commission Value Is Percentage

☐

Is Included Into Repayment Schedule Installment

☐

Use Banking Formula

☐

Commission Value

+ Insert

X Delete

Export

Refresh

☐

Commission Percent

Commission Value

Valid From

Valid To

Status

Q

Q

Q

Q

Q

18.50

01/01/2021

31/12/2031

Active

Return Fee Commissions

The banks can define commissions to be paid back to the customer when performing Returned Amount or Goods transactions (events) on contracts. A part or the entire amount of Front-End Fees paid by a customer at the contract creation can be

paid back to the customer if they choose to return the amount of the loan or the goods in the time frame defined at the banking product level. For term loan or mortgage products, you can specify during banking product definition whether the product accepts Return Amounts or Goods transaction types or not, along with specific conditions, such as the number of days during which this transaction type can be created at the contract level.

The Return Fee type commissions, calculated using the ReturnCommissionFormula banking product formula as *sum of all Front-End Fee type commissions with Is Returnable = True)*[(Returned amount)/(Loan amount)]*, are paid back to the borrower if a Return of Goods transaction is performed.

To set up contracts that allow Return Amounts or Goods transaction, apart from configuring the **Return Of Goods** section within the banking product's **Associated Transactions** tab, make sure to define front-end fees with Is Returnable = True and return fees with Is Return = True. Attach the returnable front-end fees and the return fees to the commission list used within the product's **Interests&Commissions** tab, and select the ReturnCommissionFormula banking product formula within the product's **Risk Formulas** tab.

Return Fee commission definition example:

Commission

Main Information

Name

Return Fee EUR

Commission Type

Return Fee

Currency

EUR

Periodicity Type

Once

Is For Unusage

☐

Mandatory For Applicant

☐

Is For Contract Version

☐

Commission Value Is Percentage

☐

Is Included Into Repayment Schedule Installment

☐

Is Return

☒

Use Banking Formula

☒

Banking Formula Type

CommissionFormula

Returnable Front-End Fee commission definition example:

Commission

Main Information

Name

Front-End Fee Returnable EUR

Commission Type

Front-end Fee

Currency

EUR

Periodicity Type

Once

Is For Unusage

☐

Mandatory For Applicant

☐

Automatic Load On Contract

☒

Is For Contract Version

☐

Commission Value Is Percentage

☒

Commission Percent Applied To

Financed Value

Is Included Into Repayment Schedule Installment

☐

Use Banking Formula

☐

Commission Value

+ Insert

✕ Delete

📄 Export

🔄 Refresh

<input type="checkbox"/> Commission Percent	Commission Value	Valid From	Valid To	Status
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	4.00	01/02/2022	25/02/2029	Active

Return fee and returnable front-end fee used within a term loan banking product definition:

BANKING PRODUCT FACTORY USER GUIDE

←

CURRENT STATUS: APPROVED

→

NEXT STATUS: CLOSED

CODE

TL - RF

PRODUCT

Term Loan Euro - Return Fee

START DATE

01/04/2020

END DATE

17/04/2025

VERSION

10

1 Main Info

2 Details

3 Availability

4 Dimensions

5 Product Formula Engine

6 Documents

7 Lean Core Settings

8 History

9 Origination Elements

10 GL Settings

Interest & Commissions

Export

Refresh

Item Name

Onboarding Loan I&C

Edit Interest & Commission Item

Main Information

Banking Product

Term Loan Euro - Return Fee

Item Name

Onboarding Loan I&C

Start Date

27/01/2020

End Date

04/04/2020

Settings

Interest List

TermLoan Eur

Minimum Interest Rate

4

Commission List

Term Loan With Return Fee

Is Negotiable

Edit Commission List

Main Information

Name

Term Loan With Return Fee

Commissions in List

+ Insert existing

- Remove existing

Name

CA Administration Fee

Commission Applied To Amount

Commission to Remaining Value

Front-End Fee Returnable EUR

Management Fee EUR Monthly

New Contract Version Commission

Payment Holiday Fee

RepaymentFee EUR %

Return Fee EUR

ReturnCommissionFormula banking product formula used within a term loan banking product definition:

←

CURRENT STATUS: APPROVED

→

NEXT STATUS: CLOSED

CODE

TL - RF

PRODUCT

Term Loan Euro - Return Fee

START DATE

01/04/2020

END DATE

17/04/2025

VERSION

10

VERSION DATE

15/03/2022 09:34

1 Main Info

2 Details

3 Availability

4 Dimensions

5 Product Formula Engine

6 Documents

7 Lean Core Settings

8 History

9 Origination Elements

10 GL Settings

Banking Product Formulas

Export

Refresh

Name

Formula Type

Formula

ReturnCommissionFormula

CommissionFormula

ReturnCommissionFormula

Test Scenarios

Export

Refresh

Name

Test Formula Type

Term Loan Euro - Multiple Interests and Commissi...

CommissionFormula

The ReturnCommissionFormula banking product formula was already mapped to the entity holding contract records, thus no more actions are required for its definition. The picture below illustrates the mapping:

PRODUCT DIMENSIONS

502

BANKING PRODUCT FACTORY USER GUIDE

Edit Banking Product Formula

Main Information

Name

ReturnCommissionFormula

Banking Product

Term Loan Euro - Return Fee

Formula Type

CommissionFormula

Formula

ReturnCommissionFormula

Data Mapping

Return Commission Formula Mapping - For Transaction Return Good

Map Data

1 Definition

2 Input

3 Output

Formula parameter mapping

Data Mapping Type

Banking Product

Master Entity

FTOS_CB_Contract

Operation Name

ReturnCommissionFormula

Name

Return Commission Formula Mapping - For Transaction Return Good

1 Definition

2 Input

3 Output

FTOS_CB_Contract - Input

CommissionList

FTOS_CB_ContractFee

contractId

FTOS_CB_Contract

Value

Value Fee

from FTOS_CB_ContractFee

Currency

Currency

from FTOS_CB_ContractFee

IsReturnable

Is Returnable

from FTOS_CB_ContractFee

LoanAmount

Amount

from FTOS_CB_Contract

ReturnAmount

FTOS_CB_ContractEvent

contractId

FTOS_CB_Contract

contractEventStatusId

Business Status

from FTOS_CB_ContractEvent

returnAmount

Repayment Principal Amount

from FTOS_CB_ContractEvent

processTypoId

Process Type

from FTOS_CB_ContractEvent

At the contract level, the **Fees & Commissions** section contains the returnable front-end fee, as it was defined with Automatically load on contract = True.

1 Overview

2 Payments

3 Contracts & Documents

4 History

5 Accounting Entries

General Data

Contract ID

Activation Date

22/02/2022

Amount

10.000

Start Calculation Date For Amount Unused

22/03/2022

Auto disbursement

☒

Customer

Main Bank Account

PIN000003060

Advance Amount Percentage

0

Maximum Disburse Date

22/02/2023

Banking Product

Term Loan Euro - Return Fee

Current Account

PIN000002624

Advance Amount Value

0

Currency

EUR

Destination Bank Account

Available Amount

0

Managing Branch

root

Fees & Commissions

Refresh

<input type="checkbox"/>	Fee	Currency	Fee Date	Percent Fee	Value Fee	Periodicity Type
<input type="checkbox"/>	CA Administration Fee	EUR	22/02/2022		4.00	Monthly
<input type="checkbox"/>	Management Fee EUR Monthly	EUR	22/02/2022		10.00	Monthly
<input type="checkbox"/>	Front-End Fee Returnable EUR	EUR	22/02/2022	4.0000	400.00	Once
<input type="checkbox"/>	Commission Applied To Amount	EUR	22/02/2022	10.0000	0.00	Monthly

The following example illustrates the return fee commission automatically calculated for a Returned Amounts or Goods contract event.

Returned Amount Of Goods

EDIT CONTRACT EVENT

General Data

Event Date	Date For Return	Event Value
02/03/2022	01/03/2022	2.080
External Identifier		

Capital

Remaining Principal At Date	Repayment Principal Amount	Returned Accrued Interest
6.000	2.000	0
Principal To Be Returned	Interest To Be Returned	Interest For Returned Amount
0	0	0

Early Repayment Options

Keep Contract Period	Fee Value To Principal
<input type="checkbox"/>	<input type="checkbox"/>
Import Schedule	
<input type="checkbox"/>	

Unpaid Info

Accrued Interest	Unpaid Amount On Contract	Unpaid Amount For Customer
0	0	117.826.78

Fees

Return Fee	Return Fee Value
Return Fee EUR	80

Early Repayment Result

Future Installments No	Future Annuity
6	785.03

Simulate Returned Amount Of Goods

Commission Lists

A commission list allows you to group multiple commissions into a collection of commissions that you can use in a banking product. It is possible to group under the same umbrella the following types of commissions created individually in the ["Commissions" on page 481](#) menu: Front-end fee & Management fee & Repayment fee.

To manage commission lists:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory -> Banking Product Dimensions**.

4. Click **Commissions List** to display the **Commission List List** page.

Commission List list

←

+ Insert Delete Export Q Advanced find

Commission List list

☐ Name

CommList

Corporate Current Account

Corporate Loan Term Commissions USD

Corporate Loan Term Commissions VND

Credit Card Commission List USD

5 10 20 1 ... 3 4 5 6 ...

5. In this page, you can:

- Add a new commission list by clicking the **Insert** button at the top right corner of the page.
- Edit a commission list from the section by double clicking it.
- Delete a commission list from the section by selecting it and clicking the **Delete** button at the top right corner of the page.

The **Edit Commission List** page allows you to configure commission list settings.

←

Save and close Save and reload

Edit Commission List

Main information

Name

Corporate Current Account

Commissions in List

+ Insert existing X Remove existing

☐ Name

Management Fee USD

List is Attached to Products

Export Refresh

Name	Status	Banking Product Type
DD Current Account VND	Version Unapproved	Bank Account
Corporate Current Account CA...	Approved	Bank Account

Adding Commission Lists

To create a new commission list, follow these steps:

1. Click the **Insert** button on the top right side of the page. The **Add Commission List** page is displayed.
2. Enter a **Name** for the commission list.

3. Click the **Save and Reload** button at the top right corner of the page.
4. Click the **Insert existing** button to add the applicable commission in the **Commission** section.
5. Click the **Save and Close** button at the top right corner of the page.

Item Filters

You can define filtering criteria for your interests and commissions which you can later on call in your banking products.

To manage filtering criteria:

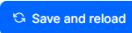
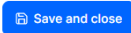

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory**.
4. Click **Banking Product** to open the **Product List** page. Select the product where you want to add the filter.
5. In the **Dimensions** tab, insert or edit an interest or a commission.

The screenshot displays the 'Dimensions' tab in the Banking Product Factory interface. The top navigation bar includes tabs: 1 Main Info, 2 Details, 3 Availability, 4 Dimensions (active), 5 Product Formula Engine, 6 Documents, 7 Lean Core Settings, 8 History, 9 Origination Elements, and 10 GL Settings.

The main content area is divided into four sections, each with a search bar and action buttons (Insert, Delete, Export, Refresh):



- Interest & Commissions:** Search bar contains 'MCA'. Action buttons: + Insert, X Delete, Export, Refresh.
- Insurances:** Search bar is empty. Action buttons: + Insert, X Delete, Export, Refresh.
- Discounts:** Search bar is empty. Action buttons: + Insert, X Delete, Export, Refresh. Below the search bar, there are five input fields labeled Name, Discount, End Date, Start Date, and Value Discount, each with a search icon. The text 'No data' is displayed below these fields.
- Questions:** Search bar is empty. Action buttons: + Insert existing, X Remove existing. Below the search bar, there are two rows of data: Question1 (Active) and Question2 (Active).



6. In the **Interest & Commission Item Filters** section, click **Insert**.



Edit Interest & Commission Item Filter

Main Information

Filter  

Value  1 Until Value  50,000

Description

AL_Amount >< 1 - 50000

Field	Required	Data Type	Details
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Value/ Date	No	Text/Date	Select the beginning value/ date for the filter.
until Value/ until Date	No	Text/Date	Select the maximum value/ date for the filter.
Description	No	Text area	This field is automatically filled in after the Save and Reload button is clicked. The values/ dates inserted above are turned into an expression.
For Lookup attributes			

Field	Required	Data Type	Details
Filter	Yes	Option set	Select a filter created earlier in the "Product Filter" on page 519 .
Option set	No	Option set	Automatically filled in with the option set name created for the attribute.
Description	No	Text area	Add a description if needed.
grid of options	No	grid	This field is automatically filled in after the Save and Reload button is clicked. The values of the option set are displayed. Select the checkbox for the values you wish to include in the filter.

- Click the **Save and Close** button at the top right corner of the page.

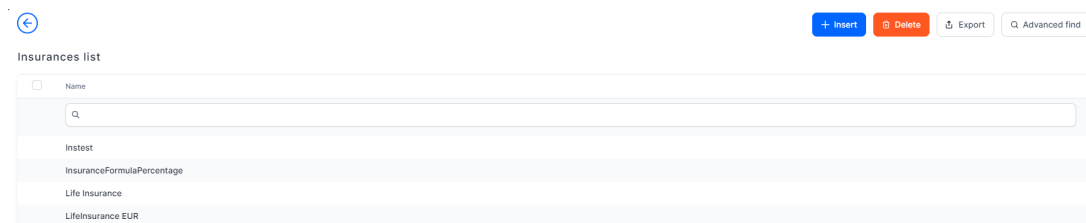
Insurance

When building a product, it may require to add an insurance to it such as a credit insurance, life insurance, house insurance etc.

For any banking product you can select an existing insurance or to create a new one. To add a new one, follow these steps:

- Log into Innovation Studio.
- Click the main menu icon at the top left corner.
- In the main menu, expand **Product Factory-> Banking Product Dimensions**.

4. Click **Insurances** to open the **Insurances List** page.



5. In the **Insurances List** page, you can:

- Add a new insurance by clicking the **Insert** button at the top right corner of the page.
- Edit an existing insurance by double clicking it.
- Delete an insurance by selecting it and clicking the **Delete** button at the top right corner of the page.

Adding Insurances

To create a new insurance, click the **Insert** button on the top right side of the page. In the newly opened **Add Insurance** page, fill in the following fields from the **Insurance** section:

Field	Data Type	Details
Code	Text	Insert a code for the insurance.
Name	Text	Insert a suggestive name for the insurance. Make sure it is a unique name.

Field	Data Type	Details
Periodicity Type	Option set	<p>Select the type of periodicity for the insurance:</p> <ul style="list-style-type: none"> • Once • Monthly • Trimestrial • Semestrial • Annual.
Currency	Option set	Select the corresponding currency for the insurance.
Insurer	Option set	Insert the name of the company that issues the insurance.
Operation Item	Option set	Select the corresponding operation item responsible for notification
Is Mandatory For Applicant	Boolean	If selected, then the insurance is mandatory for the customer.
Is Mandatory For Debtor	Boolean	If selected, the insurance is mandatory for the debtor.
Is Included Into Repayment Schedule Installment	Boolean	If selected, the insurance is included in the payment installments.
Class	Option set	<p>Select the class of insurance for this specific insurance:</p> <ul style="list-style-type: none"> • Credit insurance • Home insurance • Life insurance • Other insurance.
Insurance Value is Percentage	Boolean	If selected, the insurance value is a percentage from the banking product's value.
Description	Text area	Insert a suggestive description for the insurance.

Click the **Save and Reload** button at the top right corner of the page.

← Edit Insurance Save and close Save and reload

Main Information

Code: LI Name: Life Insurance Currency: USD Class: Life Insurance Insurer:
 Periodicity Type: Monthly Insurance Value Is Percentage: ☒ Operation Item: Life Insurance
 Is Included Into Repayment Schedule: ☒ Is Mandatory For Applicant: ☒ Is Mandatory For Debtor: ☐
 Use Banking Formula: ☐

Insurance Values

Begin Date	End Date	Percent	Value	Interest Discount
21/07/2020	17/02/2021	3.0000		1.00
18/02/2021	02/10/2021	3.2000		0.90
31/01/2022	28/01/2022	5.0000		

In the **Insurance value** section, insert or delete the values of the insurance.

To add a new insurance value, click **Insert** and fill in the following fields in the newly opened **Add Insurance Value** page:

Field	Data type	Description
Begin date	Date	Select a date when the value is valid for the insurance.
End date	Date	Select the end date when the value is no longer valid.
Percent	Numeric	Select the percentage for the insurance.
Value	Numeric	Select the value for the insurance.
Interest discount	Numeric	Select the discount to be applied to the insurance.

Click the **Save and Close** button.

Insurance Lists

An insurance list allows you to group multiple insurances into a collection that you can use in a banking product. It is possible to group under the same umbrella the following classes of insurances created individually in the ["Insurance"](#) on page 508 menu: Credit, Home, Life, and Other insurances.

To manage commission lists:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.

3. In the main menu, expand **Product Factory -> Banking Product Dimensions**.

4. Click **Insurance List** to display the **Insurances Lists List** page.

Insurances Lists list

Name
Advanced Loan Insurance List

5. In this page, you can:

- Add a new insurance list by clicking the **Insert** button at the top right corner of the page.
- Edit an insurance list from the section by double clicking it.
- Delete an insurance list from the section by selecting it and clicking the **Delete** button at the top right corner of the page.

The **Edit Insurance List** page allows you to configure insurance list settings.

Edit Insurance List

Main Information

Name: Life Insurance

Insurances in List

Name
InsuranceFormulaPercentage
Life Insurance

List is Attached to Products

Name	Status	Banking Product Type
TestPack	Draft	Term Loan
Term Loan Duplicate	Version Unapproved	Term Loan
Onboarding Loan	Approved	Term Loan

Adding Insurance Lists

To create a new insurance list, follow these steps:

1. Click the **Insert** button on the top right side of the page. The **Add Insurance List** page is displayed.

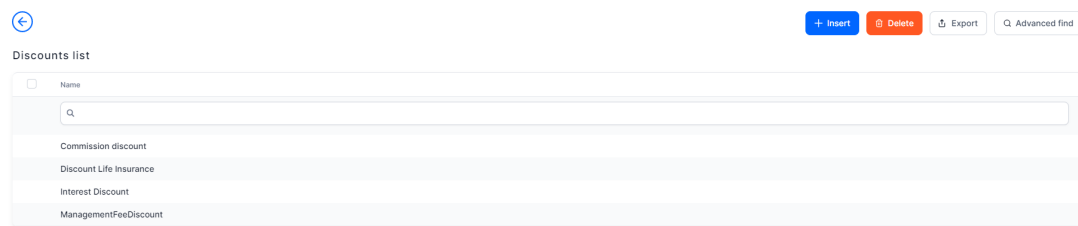
2. Enter a **Name** for the insurance list.
3. Click the **Save and Reload** button at the top right corner of the page.
4. Click the **Insert existing** button to add the applicable insurance in the **Insurances in List** section.
5. Click the **Save and Close** button at the top right corner of the page.

Discounts

Banks can offer discounts of any nature for any banking product. You can either select an existing discount or create a new one.

To add a new discount, follow these steps:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory-> Banking Product Dimensions**.
4. Click **Discounts** to open the **Discounts List** page.



Here you can add a new discount by clicking the **Insert** button, or delete an existing discount by clicking the **Delete** button on the right.

5. Click **Insert** and fill in the following fields:

Field	Required	Data Type	Details
Name	Yes	Text	Insert the appropriate name for the discount.
Applied to dimension	Yes	Option set	Select one of the dimensions: <ul style="list-style-type: none"> • Interest • Commission • Insurance.
Interest			
Interest Type	Yes	Option set	Select one type from the list.
Interest	No	Option set	Select the exact interest configured in the "Interests" on page 462 menu.
Commission			
Commission Type	Yes	Option set	Select one type from the list.
Commission	No	Option set	Select the exact commission configured in the "Commissions" on page 481 menu.
Insurance			
Insurance Class	Yes	Option set	Select one from the list.
Insurance	No	Option set	Select the exact insurance configured in the "Insurance" on page 508 menu.

6. Click the **Save and Reload** button at the top right corner of the page.

7. The **Banking Products** section, displayed after saving the discount, shows the products where the discount is applied. If it is empty, there are no banking products associated.

Discount

Main Information

Name: Commission discount

Applied to Dimension: Commission

Insurance Class: [Dropdown]

Commission Type: Front-end Fee

Commission: 30days

Banking Products

Export Refresh

Name	Banking Product Code	Status
Corporate Loan for IT companies	123456	Draft

- Click the **Save and Close** button at the top right corner of the page.

Questions

The **Questions** menu helps you build interactive questions for a banking product to which a customer should respond. The questions are further used to determine the eligibility of a customer or their scoring. The questions can later be added to a digital journey as well. For example, here's a digital journey with a question in the Loan Origination, displayed to determine the customer's eligibility.

EDIT LOAN APPLICATION

Eligibility Questions

We ask for this information so that we can carry out the checks needed to consider you for a mortgage

DEPOSIT SOURCE: Select...

RETIREMENT DATE: [Text Input]

RETIRED: ☐ Yes ☒ No

Finish

Adding Questions

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory**-> **Banking Product Dimensions**.
4. Click **Questions** to open the **Banking Product Questions List** page.

Here you can add a new question by clicking the **Insert** button, or delete an existing question by clicking the **Delete** button on the right.

5. Click **Insert** and fill in the following fields:

Edit Banking Product Question

Main Information

Question

Question Type

Answer Entity

Answer Field

Is for solicitant?

Is for coborrower?

Question1

Test

Account

Phone

Banking Products

☐ Name

Product Type

Banking Product Code

Q

Q

Q

Onboarding Loan Duplicate

Term Loan

OL_DD

Term Loan Advanced

Term Loan

TL_ADV

Term Loan Advanced

Term Loan

TL_ADV

Term Loan Advanced

Term Loan

TL_ADV

Term Loan Advanced

Term Loan

TL_ADV

Field	Required	Data type	Description
Question	Yes	Text	Insert the appropriate name.
Question Type	Yes	Option set	Select the type of answer the client has to give: <ul style="list-style-type: none"> • text • numeric • option set.
Is for solicitant?	No	Boolean	If selected, then the question is aimed at the customer soliciting the banking product.

Field	Required	Data type	Description
Is for coborrower?	No	Boolean	If selected, then the question is aimed at the customer who is coborrower for a banking product.
Answer entity	No	Option set	<p>Select the entity where the answer should go.</p> <div> <p>NOTE</p> <p>The entity must be directly related to the entity on which the questions are posted. If the two entities are not related, the question is not displayed in the flow.</p> </div>
Answer Field	No	Option set	Select the attribute of the previously selected entity where the answer is recorded.

- Click the **Save and Reload** button at the top right corner of the page.

IMPORTANT!

In order for the question to be added to the banking product, the status must be changed from draft to active.

- 7. The **Banking Products** section displays the products which use the question. If the section is empty, there is no associated product to the question. To add a question to a banking product, see [the Questions section within the Dimensions tab](#) of a banking product.
- 8. Click the **Save and Close** button at the top right corner of the page.

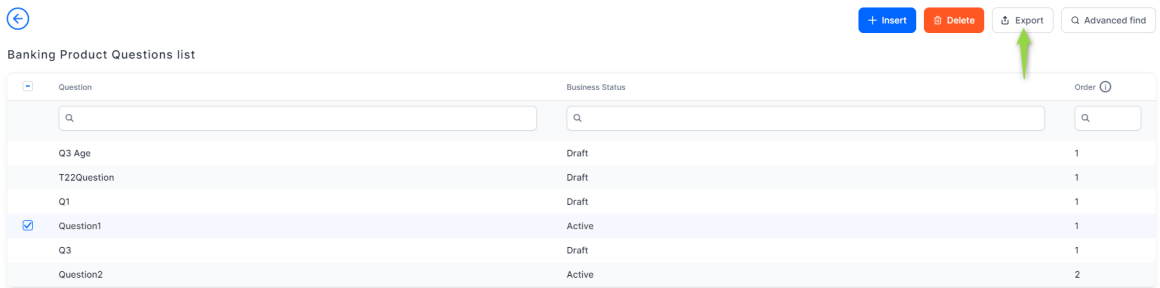
Deleting Questions

Delete a question by selecting it and clicking the **Delete** button at the top right corner of the page.

Exporting Questions

To export the questions locally, click the **Export** icon and select between export current set or export all data set. The first exports the selected question, the other exports all the questions.

The exported file is an Excel file downloaded locally. It includes the name of the question and its business statuses.



Product Filter

To aid in the creation, analysis and categorization of banking products, Innovation Studio has a dedicated functionality for product filtering. Its purpose is to aid users navigate through the list of products based on a filtering scope.

The following sections in each **Availability** tab of a banking or insurance product page assist you in filtering through the attributes: **Product Availability Item Filters**, **Interest & Commissions Item Filters** and **Insurance Item Filters**.

Adding Product Filters

1. Log into Innovation Studio.
2. In the main menu, expand **Product Factory**.
3. Click **Banking Product Filter** to open the **Banking Product Filters List** page.

Here you can add a new filter by clicking the **Insert** button, or delete an existing filter by clicking the **Delete** button on the right.

4. Click **Insert** and fill in the following fields:

Save and close

Save and reload

Edit Banking Product Filter

Main Information

Name

Filter Scope

Filter Type

DateOfBirth_A

Availability

Date Interval

Product Availability Item Filters

Refresh

Description

Banking Product

DateOfBirth >< 1970-01-01 - 2000-01...

Test mada

DateOfBirth >< 1970-01-01 - 2000-01...

Test mada

DateOfBirth >< 1970-01-01 - 2000-01...

Duplicate - 6

DateOfBirth >< 1970-01-01 - 2000-01...

Test mada

DateOfBirth >< 1970-01-01 - 2000-01...

Duplicate - 3

DateOfBirth_A >< 1970-01-01 - 2000...

Term Loan Advanced

DateOfBirth_A >< 1970-01-01 - 2000...

Term Loan Advanced

DateOfBirth_A >< 1970-01-01 - 2000...

Term Loan Advanced

Interest & Commission Item Filters

Refresh

Description

Interest C...

Banking Product

No data

Insurance Item Filters

Refresh

Description

Insurance ...

Banking Product

Product Discount Item Filter

Refresh

Banking Product Discount

Description

Field	Required	Data type	Description
Name	No	Text	Insert a name for the filter you are building.
Filter Scope	Yes	Option set	Choose one of the attributes for filtering: <ul style="list-style-type: none">AvailabilityInterestCommissionsInsuranceAll

PRODUCT FILTER

520

Field	Required	Data type	Description
Filter Type	Yes	Option set	<p>Choose one of the dedicated types:</p> <ul style="list-style-type: none"> • Text Value • Numeric Value • Numeric Interval • Date Value • Date Interval • OptionSet • LookUp. <p>For OptionSet and LookUp attributes, you can add multiple values.</p> <p>If you select LookUp attribute, two new fields are displayed: Entity and Entity View. For more details, see Views.</p>

5. Click the **Save and Reload** button at the top right corner of the page.

The **Product Availability Item Filter** section displays the banking products where the selected banking product filter is used.

NOTE The data inserted here is shown in the **Availability** tab in the **Product Availability Item Filter** section of the Banking Product pages.

Deleting Product Filters

To delete a Product Filter:

1. Open the **Product Filter** menu. Click on the filter to be deleted.
2. Click the **Delete** button on the right-side of the corner. Confirm the deletion.

IMPORTANT!

If the filter is used, the following an error message is displayed.

Product Hierarchy

The banking system has developed numerous products and services to tend to their customers' needs and to stay competitive ahead of times. To aid consultants and developers manage these products, Innovation Studio offers a dedicated menu, **Banking Product Hierarchy**, where a hierarchy can be built

There are two ladders available with two levels. The organization is purely liberal to the bank.

Product Class

This ladder is designed to categorize the major banking products any bank offers. For example purposes, here is a demonstrative structure:

- Personal
- Corporate
- Public Limited Companies
- Non Profit organizations.

Adding Product Classes

1. Open the Innovation Studio, expand the **Product Factory** menu, click **Banking Product Hierarchy** and choose **Product Class** menu item.
2. The **Banking Product Classes List** page is displayed. It shows all the existing classes configured so far. To add a new class, click the **Insert** button.
3. Enter a Class Name. Choose an appropriate name for your banking hierarchy.
4. Click the **Save and Reload** button at the top right corner of the page.

5. Four sections are displayed: **Banking Product Subclasses**, **Banking Product Categories**, **Banking Product Subcategories**, and **Banking Products**. Add the associated subclasses, categories, subcategories and products in each respective section.

Product Subclass

These are subordinated to the classes above. For example, some subclasses for banking products are:

- authenticated
- unauthenticated
- teenagers/ students.
- existing, authenticated customer
- existing, un-authenticated customer
- new, un-authenticated customer
- new, authenticated customer.

Adding Product Subclasses

1. Open the Innovation Studio, expand the **Product Factory** menu, click **Banking Product Hierarchy** and choose **Product Subclass** menu item.
2. The **Banking Product Subclasses List** page is displayed. It shows all the existing subclasses configured so far. To add a new subclass, click the **Insert** button.
3. Choose from the option set one for the subclasses pre-existing or insert a new subclass.
4. Enter a Subclass Name.
5. Click the **Save and Reload** button at the top right corner of the page.

6. Two new sections are displayed: **Banking Product Categories** and **Banking Product Subcategories**. Add the associated category and subcategory in each respective section.

Product Category

Here is a possible structure for category:

- saving
- investing.

Adding Product Categories

1. Open the Innovation Studio, expand the **Product Factory** menu, click **Banking Product Hierarchy** and choose **Product Category** menu item.
2. The **Banking Product Categories List** page is displayed. It shows all the existing categories configured so far. To add a new category, click the **Insert** button.
3. Choose from the option set one for the classes pre-existing or insert a new class.
4. Choose from the option set one of the subclasses pre-existing or insert a new subclass.
5. Enter a Category Name.
6. Enter a Code for the category.
7. Click the **Save and Reload** button at the top right corner of the page.
8. The **Banking Product Subcategories** section is displayed. Insert an associated subcategory in this section.

Product Subcategory

For example, here is a structure for subcategory:

- savings account
- term deposit
- direct equity
- equity mutual funds
- debt mutual funds.

Adding Product Subcategories

1. Open the Innovation Studio, expand the **Product Factory** menu, click **Banking Product Hierarchy** and choose **Product Subcategory** menu item.
2. The **Banking Product Subcategories List** page is displayed. It shows all the existing subcategories configured so far. To add a new subcategory, click the **Insert** button.
3. Choose from the option set one for the classes pre-existing or insert a new class.
4. Choose from the option set one of the subclasses pre-existing or insert a new subclass.
5. Choose from the option set one of the category pre-existing or insert a new category.
6. Enter a Subcategory Name.
7. Click the **Save and Close** button at the top right corner of the page.

Banking Product Classification

If a bank has to classify its product offer, Banking Product Factory has an inbuilt feature, accessible through the **Banking Product Classification** menu item, which allows you to manage classification items. Once defined, a product classification can be attached to different products, and then the contracts based on these products further inherit the same classification. Banking product classification has no business functionality implications, being intended only for the bank's internal segmentation needs.

Adding Product Classifications

1. Log into Innovation Studio.
2. In the main menu, expand **Product Factory**.
3. Click **Banking Product Classification** to open the **Banking Product Classifications List** page.

+ Insert

Delete

Export

Advanced find

Product Classifications list

<input type="checkbox"/>	Code	Name	Classification Type	Valid From	Valid To
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Classification Regulatory 2	REG2	Regulatory	01/03/2021	31/03/2021
	REG1	Classification Regulatory	Regulatory	01/01/2020	31/12/2030
	REG3	Reg 3	Regulatory	22/03/2022	09/04/2022
	RESTRUCTL1	Classification Restructuring Level1	Restructuring	22/10/2021	31/12/2021

Here you can add a new classification by clicking the **Insert** button, or delete an existing classification by clicking the **Delete** button on the right.

4. Click **Insert** and fill in the following fields in the newly displayed **Add Product**

Classification page:

Field	Required	Data type	Description
Classification Type	Yes	Lookup	Select the type of classification for the new banking product classification record.
Name	Yes	Text	Insert a name for the new classification item.
Is Default	Yes	Boolean	If this checkbox is selected, then this becomes the default banking product classification item.
Code	Yes	Text	Insert a unique code for the new classification item.
Valid From	Yes	Invariant Date	Select the date from which the product classification item is valid.
Valid To	Yes	Invariant Date	Select the date until when the product classification item is valid.

5. Click the **Save and Reload** button at the top right corner of the page.

The **Classified Banking Products Section** is displayed after saving the classification item record and allows you to insert existing banking products that should be classified with this new classification item. The following information is displayed here:

Field	Details
Code	The code of the banking product added to the product classification item.
Name	The name of the banking product.
Class	The class of the banking product.
SubClass	The subclass of the banking product.
Category	The category of the banking product.
SubCategory	The subcategory of the banking product.

HINT

The data inserted here is shown in tab **1. Main Info** in the **Product Classification** section of each Banking Product page.

Payment Schedule Types

The **Banking Schedule Types** menu creates payment schedules, a quintessential part of a loan. Its menu items help you configure the installments, dates and calculations.

Schedule Element Class

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory**, click **Banking Schedule Types**, and open the **Schedule Element Class** menu item.
4. Click the **Insert** button to add a new class.
5. In the newly opened **Add Scheduled Element Class**, select an **Element Type**: Insurance or Commission.
6. Add a name for the element class.
7. Click the **Save and close** button. Repeat as many times as needed.

Payment Schedule Types

In Innovation Studio, payment schedule types come with a business workflow attached in order to block changes to schedule types that are actively used on banking products. Read more about [Business Workflows](#).

In order to do that, the following statuses are available:

- **Draft** - first, default, every field is editable;
- **Active** - manually selected, fields are no longer editable. The **Duplicate** button is visible. By pressing this button the current schedule type gets duplicated in a draft new schedule type that can be further edited. Only active schedule types can be added to a banking product;
- **Draft** - not manually selected. It is available when a **New Version** button is visible;
- **Closed** - manually selected.

When transitioning a schedule type from Draft to Active, the following server-side validations are being performed:

- The **Interest** column needs to be calculated after the calculation of the **RemainingValue** column. Please change the order in the grid.
- The column {0-ex.TotalInstallment} with formula {1-ex.Principal+Interest} has column {2-ex.Principal} calculated after formula. Change the order in the grid.

NOTE A set of out-of-the-box schedule type templates are available with the Active status in Innovation Studio. The templates contain only the mandatory fields, no commissions or interests are defined.

Follow the steps below to create a new payment schedule type:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory**, click **Banking Schedule Types**, and open the **Payment Schedule Types** menu item. The **Payment Schedule Types List** page is displayed, showing all the already created schedule types.
4. Click the **Insert** button to add a new type.
5. In the newly opened **Add Payment Schedule Type** page, fill in the following fields:

Field	Required	Data Type	Details
Name	No	Text	Insert a suggestive name for the type.
Payment schedule code	No	Numeric	Insert a code for the type to keep track of them.
Banking Product Type	No	Option set	Select a product type to associate with the payment schedule type. Depending on the Product Type, different calculation rules are triggered. For example, the product type Overdraft has only the payment at maturity.

Field	Required	Data Type	Details
Interest Calculation Type	No	Option set	<p>Select from the list a type of calculation for the interest.</p> <p>When an annual interest rate is specified, in order to calculate the Installment for an interval of days, first the annual interest rate should be transformed into a daily base. To make this transformation, there are some accepted conventions. Innovation Studio implemented the following conventions: 30/360, 30/365, Actual/Actual, where Actual for years can be either 365 or 366. Other schedule interest calculation types can also be defined, as needed. In practice may be also encountered the Actual/360 or Actual/365. Here are some of the implemented schedule interest calculation types:</p> <ul style="list-style-type: none"> • Equal Installment Monthly 30/360 - this generates a payment schedule of equal installments where every period

Field	Required	Data Type	Details
			<p>is a month of 30 days, and every year has 360 days;</p> <ul style="list-style-type: none"> • Equal Installment Monthly 30/365 - this generates a payment schedule of equal installments where every period is a month of 30 days, and every year has 365 days; • Equal Installment Monthly 30/366 (30/Actual) - this generates a payment schedule of equal installments where every period is a month of 30 days, and every year has 366 days; • Equal Installment Monthly Actual/365 - this generates a payment schedule of equal installments where every period is a month with actual days (28,29, 30, or 31 days), and every year has 365 days; • Equal Installment

Field	Required	Data Type	Details
			<p>Monthly Actual/366 (Actual/Actual) - this generates a payment schedule of equal installments where every period is a month with actual days (28,29, 30, or 31 days), and every year has 366 days;</p> <ul style="list-style-type: none"> • Equal Principal Monthly 30/360 - this generates a payment schedule of equal principal where every period is a month of 30 days, and every year has 360 days; • Equal Principal Monthly 30/365 - this generates a payment schedule of equal principal where every period is a month of 30 days, and every year has 365 days; • Equal Principal Monthly 30/366 (30/Actual) - this generates a payment schedule of equal principal where every period is a

Field	Required	Data Type	Details
			<p>month of 30 days, and every year has 366 days;</p> <ul style="list-style-type: none"> • Equal Principal Monthly Actual/365 - this generates a payment schedule of equal principal where every period is a month with actual days (28,29, 30, or 31 days), and every year has 365 days; • Equal Principal Monthly Actual/366 (Actual/Actual) - this generates a payment schedule of equal principal where every period is a month with actual days (28,29, 30, or 31 days), and every year has 366 days. <div> <p>NOTE</p> <p>The payment schedule projection takes into consideration</p> </div>

Field	Required	Data Type	Details
			both the payment schedule type defined at the banking product level, and whether to collect the interest accrued on the contract until the date of an early repayment event, thus repaying the accrued interest, or not, thus adding the accrued interest to the repayment amount. Set the Collect accrued interest field in the Event page at the contract level to False to add the accrued interest to the repayment

Field	Required	Data Type	Details
			amount.
Measurement Unit	Yes	Option set	<p>Select from the list the type of measurement unit applicable for the payment schedule type.</p> <p>Possible values: Days, Weeks, Months, Years, Once.</p> <p>Default value: Months.</p>
Is With Equal Installments	No	Boolean	<p>Select the checkbox if the installments are equal, so the annuity (also known as PMT) value calculation is needed, and the Principal is calculated with formula $\text{Annuity} \text{ minus Interest}$. If there are Commissions that appear on the Payment Schedule, these Commissions are not included in annuity calculation.</p>

Field	Required	Data Type	Details
Installment Value Custom	No	Boolean	<p>If you select the checkbox, with multiple disbursements, the Principal component of the installments is the one calculated for the entire Financed Amount, even if it was not entirely disbursed.</p> <p>For example, if Financed Amount is 10.000 EURO and the value calculated for Principal component of the Installments is 800 EURO, and the customer disburses only 5.000 EURO, the Principal component remains 800, but the Interest is calculated for 5.000 EURO that were disbursed.</p> <p>If Installment Value Custom = False, then the Is Manual Value and Royalty/ Initial Principal Value fields at the contract level are read only.</p> <p>If Installment Value Custom = True, then the Is Manual Value field at the contract level is editable, with False default value.</p>

Field	Required	Data Type	Details
Use Fix Maturity Date (from Activation Date)	Yes	Boolean	<p>If you select the checkbox, then the Maturity Date equals to Activation Date plus the Contractual Period in Months, i.e. the number of installments depends on the Activation Date.</p> <p>If the checkbox remains unselected, the number of installments are fixed, the Maturity Date is equal to the First Installment plus the Contractual Period in Months, e.g. Installment date is on the first day of the month, this results in the Maturity day to be the first day of the month.</p> <div> <p>NOTE</p> <p>This is only valid for Period Type = Months.</p> </div>

Edit Schedule Type Definition

Main Information

Payment schedule code
Name
Banking Product Type
Interest Calculation Type
Measurement Unit

EPW
Equal principal Weekly
Term Loan
52 weeks
Weeks

Is With Equal Installments
Installment Value Custom
Use Fix Maturity Date

Payment Schedule Type Details

☐
Column Repayment Schedule

Title
Calculation Method
Fee
Insurance class
Source
Display

RemainingValue
Interest
Principal
Totalinstallment

RemainingValue
Interest
Principal
Totalinstallment

RemainingFormula
Effective Rate
Liniar
ColumnFormula

☒
☒
☒
☒

6. Click the **Save and reload** button.

7. In the newly displayed **Payment Schedule Type Details** section, add the information needed, according to the table below.

The fields change according to the selection of **Column Type** and **Calculation Method**.

Schedule Template Detail

Main Information

Title
Column Type
Column Repayment Schedule
Calculation Method

Principal
Payment Schedule Dimension
Principal
Liniar

Adjust Last Installment
Totalization For Grace Period
Operation Item

Field	Required	Data Type	Details
Title	Yes	Text	Insert a suitable title for the detail.

PAYMENT SCHEDULE TYPES

541

Field	Required	Data Type	Details
Column type	Yes	Option set	<p>Select one of the types:</p> <ul style="list-style-type: none"> • Payment Schedule Dimension • Fee Dimension <div> <p>NOTE</p> <p>New option set fields are displayed, Fee, Fee Type and Source.</p> </div> <ul style="list-style-type: none"> • Insurance Dimension. <div> <p>NOTE</p> <p>New option set fields are displayed, Insurance class and Source.</p> </div> <p>The selected type triggers changes in the displayed fields.</p>
Column Repayment Schedule	Yes	Option set	Select one of the columns that is assigned in the Payment Schedule.

Field	Required	Data Type	Details
Calculation Method	Yes	Option set	<p>Select a method. It triggers changes in the fields.</p> <p>There are the predefined values that are taken into consideration when calculating the Interest:</p> <ul style="list-style-type: none"> • Linear: calculated as Amount / Number of Installments. • Effective Rate: percent applied to the Source field (see below), usually to the Remaining Value. • Fixed Value: a constant value that is completed in the Payment Schedule. • Column Formula: formulas having other columns as parameters. Formula used is specified in the field Formula that is displayed when this option is set. • Remaining Formula: specific to a column of Remaining. • Once: the value is paid once. • LinearOnYear: a value calculated based on the

Field	Required	Data Type	Details
			<p>Remaining Value at the beginning of the credit year and a given percentage, divided in installments with the specified periodicity.</p> <ul style="list-style-type: none"> • FeeOnce: takes into account a fee that is paid once. • ProductLevelFixedValue: method that calculates the capital percent defined for cards and credit cards type of products. <p>The selected calculation method triggers changes in the displayed fields.</p>
Operation Item	No	Option set	It is the item allocated to a column in the Payment Schedule on which the amount calculated at this step is allocated. Select an item from the list.
Fee	No	Option set	Select a fee configured in the Product Dimensions.

Field	Required	Data Type	Details
Fee Type	Yes	Option set	Select a fee type configured in the Product Dimensions. This is helpful when, for different banking products, there are different values applicable for the same type of fee.
Source	No	Option set	It is the source element from the JSON file returned by the Payment Schedule calculation from where to take the value.
Insurance type	No	Option set	Select an insurance type.
Is Calculated In Advance?	No	Boolean	Select the checkbox if the calculation is done in advance.
Is calculated Upfront	No	Boolean	<p>Option available for Insurance Dimension and Fee Dimension. Select the checkbox for insurance or commissions that need to be paid at the activation of the lending contract.</p> <div> <p>NOTE</p> <p>This is only valid for products with Period Type = Months.</p> </div>

Field	Required	Data Type	Details
Totalization For Grace Period	No	Boolean	This checkbox is available when the Calculation method is set to Effective Rate or Fixed Value. If selected, then the values that are not applied during Grace period are added to the first non-grace installment.
Adjust Last Installment	No	Boolean	This checkbox should be true most of the time, as rounding loses of precision can exist, and the sum of Principal paid monthly should be exactly the same as the Financed Amount.
Operation Item	No	Option set	Select the operation item from the list for which this schedule type details should apply.
Formula	No		<p>This checkbox is available when the Calculation method is set to Column Formula or Remaining Formula or Once or LiniarOnYear. The formula can use other Schedule Details Names.</p> <p>For example, for a total installment calculated as Principal+Interest+ManagementFee that were added to Payment Schedule Type Details earlier.</p>

8. Click the **Save and close** button. Repeat to add more details.

NOTE

The first installment can be adjusted in situations when the algorithm forces an

equal installment, by adjusting the Principal paid in the first interval.

For a Payment Schedule with equal installments, the first installment interest is calculated for the number of days between Activation Date and First Installment Date.

Normally, for this first installment, the number of days can be lower or higher than the normal interval, so the Interest calculated makes the first installment to be different than the others.

The following picture illustrates the payment schedule type and the details defined for Credit Card Installments calculation:

Edit Schedule Type Definition

Main Information

Payment schedule code

CC

Name

Credit Card Installments

Banking Product Type

Interest Calculation Type

30/360

Measurement Unit

Months

Is With Equal Installments

☐

Installment Value Custom

☐

Use Fix Maturity Date

☐

Payment Schedule Type Details

Export

Refresh

Column Repayment S...	Title	Calculation Method	Fee	Insurance class	Source	Display
<input type="checkbox"/>	Q	Q	Q	Q	Q	(All)
CapitalPercent	CapitalPercent	ProductLevelFixed...				<input type="checkbox"/>
ManagementFee	MgtFee	FixedValue	Management Fee FL...		SourceValue	<input checked="" type="checkbox"/>
RemainingValue	RemainingValue	RemainingFormula				<input checked="" type="checkbox"/>
Interest	Dobanda	Effective Rate				<input checked="" type="checkbox"/>
Principal	Principal	ColumnFormula				<input checked="" type="checkbox"/>
TotalInstallment	TotalInstallment	ColumnFormula				<input checked="" type="checkbox"/>

Schedule Template Detail

Main Information

Title

Principal

Column Type

Payment Schedule Dimension

Column Repayment Schedule

Principal

Calculation Method

ColumnFormula

Adjust Last Installment

☒

Operation Item

Loan Principal

Formula

(remainingValue + managementFee)*CapitalPercent/100.00

Payment Schedule Type Column

The **Payment Schedule Type Column** menu helps you configure the calculation steps. The order of the steps is determined by the **Calculation column**.

1. Log into Innovation Studio.
2. In the main menu, expand **Product Factory**, click **Banking Schedule Types**, and open the **Payment Schedule Type Columns** menu item. The **Schedule Type Column List** page is displayed, showing all the already created schedule type columns.
3. Click the **Insert** button to add a new column type.
4. In the newly opened **Add Schedule Type Column** page, select a column type from the list:
 - Payment Schedule Dimension
 - Fee Dimension
 - Insurance Dimension.

Edit Schedule Type Column

Main Information

Column Type

Payment Schedule Dimension

Name

InterestCapitalized

Payment Schedule Types

+ Insert
X Delete
Export
Refresh

<input type="checkbox"/>	Name	Payment schedule code	Calculation Method	Column Type
<input type="checkbox"/>	deposit	deposit	Effective Rate	Payment Schedule Dimension
<input type="checkbox"/>	Deposit Actual	DA	Effective Rate	Payment Schedule Dimension

5. Enter a Name for the column.
6. Click the **Save and reload** button.
7. The **Payment Schedule Types** section is displayed after saving, showing all the payment schedule types using this column, with the following information:

Field	Data Type	Details
Name	Text	The name of the Payment Schedule element.

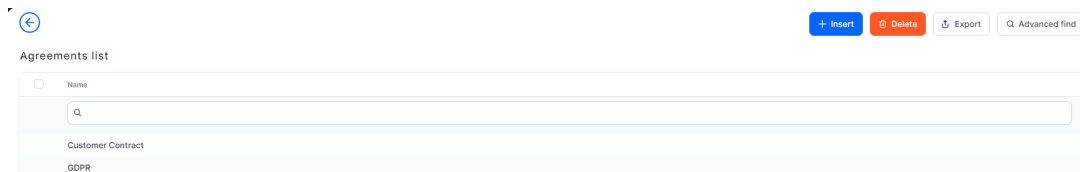
Field	Data Type	Details
Column Type	Option set	The column type: <ol style="list-style-type: none"> 1. Payment Schedule Dimension 2. Fee Dimension 3. Insurance Dimension.
Payment Schedule Code	Text	The code of the payment schedule.
Calculation Method	Option set	The calculation method.
Operation Item	Option set	Select an operation item for this schedule type.

Agreements

Agreements are set up independently from the banking products because a product may require multiple types of agreements, while a certain type of agreement can be required by multiple products.

To manage agreements:

1. Log into Innovation Studio.
2. In the main menu, expand **Product Factory**.
3. Click **Banking Agreements** to open the **Agreements List** page.



4. In this page, you can:
 - Add a new agreement by clicking the **Insert** button at the top right corner of the page.
 - Edit an agreement from the section by double clicking it.
 - Delete an agreement from the section by selecting it and clicking the **Delete** button at the top right corner of the page.

The **Edit Agreement** page allows you to configure agreement settings.

← Save and close Save and reload

Edit Agreement

Main Information

Code Name DisplayName

00 Customer Contract Customer Contract

Banking Product Agreements

+ Insert X Delete Export Refresh

☐ Code

001

002

Adding Agreements

1. To create a new agreement, click the **Insert** button on the top right side of the page. In the newly opened **Add Agreement** page, fill in the following fields from the **Agreement** section:

Field	Details
Code	Code of the agreement. The code must be unique.
Name	Name of the agreement. The name must be unique.
Display Name	The display name of the agreement.

2. Click the **Save and Reload** button at the top right corner of the page. The **Banking Product Agreements section** is displayed.
3. Click the **Insert** button to attach an agreement to the banking product.

← Save and close Save and reload Save and new

Add Banking Product Agreement

Main Information

Agreement Code Banking Product Is Mandatory

Customer Contract TLE Term Loan Euro ☐

Banking Product Agreements

+ Insert X Delete Export Refresh

☐ Code

001

002

Banking Product Agreements

The **Banking Product Agreements** section allows you to associate the agreement with banking products (see "[Managing Banking Products](#)" on page 41 for details) and specify if the association is mandatory.

NOTE

You can also associate banking products with agreements from a banking product (see [Documents tab in a banking product page](#) for details).

Banking Product Dictionaries

This page contains a series of topics that explain the dictionaries used by Banking Product Factory and how they can be managed by users with the associated role of [Banking Product Admin](#):

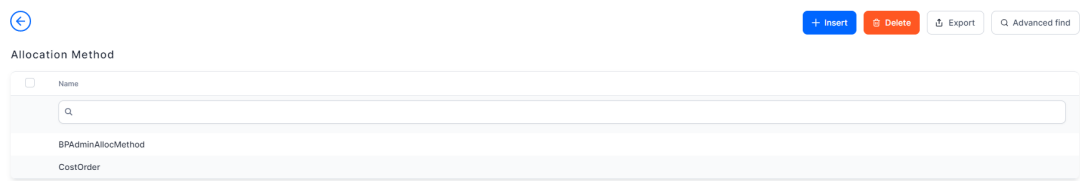
Allocation Method	554
Creating Allocation Methods	555
Banking Products	556
Banking Product Type	558
Creating Banking Product Type Records	559
Collateral Type	560
Creating Collateral Types	561
Commission Schema	563
Creating Commission Schemas	564
Commission Type	565
Creating Commission Types	566
Covenant	567
Creating Covenants	568
Loan Periodicity	569
Creating Loan Periodicity Records	570
Operation Item	571
Creating Operation Item Records	574
Product Destination Type	577
Creating Product Destination Types	578
Reconciliation Accounts	579
Creating Reconciliation Accounts	581
Reconciliation Accounts Usage in Core Banking	583
Transaction Type	585
Creating Transaction Types	586

Allocation Method

The **Allocation Method** menu stores information about the details and the banking products using those specific definitions in their setup. In FintechOS, allocation methods are used to determine the order in which credit items are prioritized when repaying loans, credit accounts, and so on. Simply put, it represents the order in which a bank proportionally allocates a portion of the payment to either fees, commissions, interest, and other credit items associated with the account, with the aim of closing the loan principal.

To manage allocation methods, follow these steps:

- 1. Log into Innovation Studio.
- 2. Click the main menu icon at the top left corner.
- 3. In the main menu, expand **Product Factory** > **Banking Product Dictionaries** menu.
- 4. Click the **Allocation Method** menu item to open the **Allocation Method** page.



On the **Allocation Method** page, you can:

- Add a new allocation method record by clicking the **Insert** button at the top right corner.
- Edit an existing allocation method record from the list by double-clicking it.
- Delete an allocation method record by selecting it and clicking the **Delete** button at the top right corner.

NOTE

Users with the associated role of **Banking Product Admin** can insert, update, or delete allocation method records.

Creating Allocation Methods

Allocation methods are created manually in FintechOS Portal, in the **Add Allocation Method** page.

- 1. To create a new allocation method, click the **Insert** button on the top right side of the **Allocation Method** page. The **Add Allocation Method** page is displayed.
- 2. Fill in the following field:

←

Save and closeSave and reloadSave and new

Add Allocation Method

Main Information

Name

DocTest

Allocation Method Details

Banking Products

Field	Mandatory	Data Type	Details
Name	No	Text	The name of the allocation method.

- 3. Click the **Save and Reload** button at the top right corner of the page. The **Allocation Method Details** and the **Banking Products** sections are displayed.
- 4. In the newly displayed **Allocation Method Details** section, click the **Insert** button. The **Add Allocation Method Details** page opens.
- 5. Fill in the following fields:

←

Save and closeSave and reloadSave and new

Add Allocation Method Detail

Allocation Method

Credit Item

↓

Minim Overdue Days

Maxim Overdue Days

Field	Mandatory	Data Type	Details
Credit Item	No	Lookup	The credit item of the allocation method.
Minimum Overdue days	No	Whole Number	The minimum overdue days of the credit item.
Maximum Overdue days	No	Whole Number	The maximum overdue days of the credit item.

IMPORTANT!

The maximum and minimum number of overdue days is relevant when creating allocation methods as an account can have one or more loan principals. If, for example, there are two loan principals, the allocation method is applied based on the oldest one. Thus, depending on the date, the installment is allocated to the oldest loan principal and then moved to the other credit items.

6. Click the **Save and Close** button at the top right corner of the page.

Banking Products

Banking products are used in FintechOS digital journeys for cash management processes such as loan origination. The **Banking Products** menu displays the banking products associated with the allocation method previously created.

In addition, banking products are used when managing loans after the loan origination process is closed:

- open loan contract,
- loan disbursement,

- schedule projection creation,
- make due amounts according to the schedule projection.

+ Insert

Delete

Export

Advanced find

Banking Products list

<input type="checkbox"/>	Code	Name	Class	SubClass	Category	SubCategory	Status	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	SLICE	SLICE Loan					Approved	1
	SL_BU	Slice BU					Approved	1
	TLTL2	TLTL2 - Term loan Eur					Approved	1
	M_BU	Mortgage test BU					Draft	1
	SCADENTAR	TEST_SCADENTAR_SL...	Corporate	Loan Term	Loan Term Unsecured		Approved	1
	REVL	REVL					Approved	1
	deposit1	deposit1					Approved	1
	TL_EUR	Term Loan Euro	Corporate	Loan Term	Loan Term Unsecured		Approved	1
	REGR_OVD	Overdraft					Approved	1
	Test_BA_ve	Test_BA_version					Approved	1

5

10

20

1

2

3

4

5

...

To create a banking product, click the **Insert** button under the **Banking Products** section. For more details on how to create banking products, see [Managing Banking Products](#).

Save and close

Save and reload

Save and new

1 Main Info

2 Details

3 Availability

4 Dimensions

5 Product Formula Engine

6 Documents

7 Lean Core Settings

8 Origination Elements

9 GL Settings

Mandatory Roles for Contract Approval

Closing Contract Settings

Buffer Close Days

0

Close Real Time☐

Closing Is Flexible☐

Contract Is Closed Automatically☒

Payment Allocation Settings

Repayment Allocation Method

CostOrder

Grace Days for Repayment

Penalty for grace period

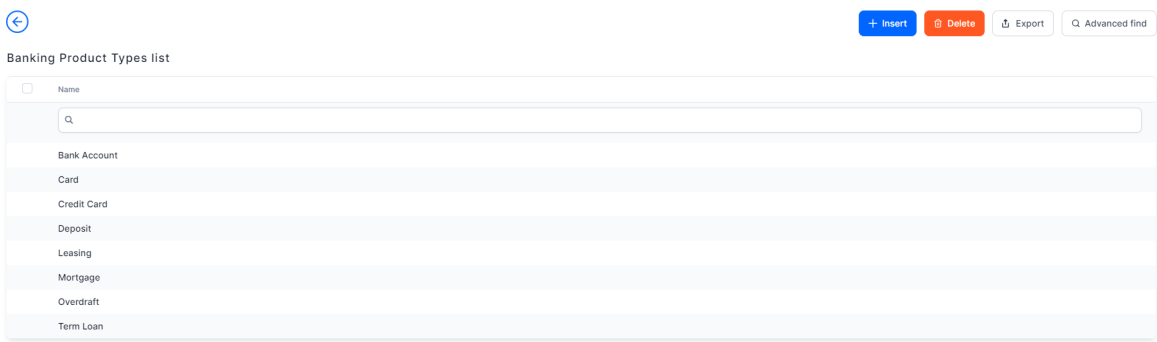
Allowed Transactions

Banking Product Type

The banking product types are the types of products that can be created using Banking Product Factory. They are created based on the banking product models used by banks: bank account, card, deposit, mortgage, term loan, and so on. During product definition, it is important to choose the right type of product to build, because the displayed fields depend on this choice.

Banking Product Factory enables you to define the desired banking product types by managing the records in the **Banking Product Type** menu. To manage banking product type records:

- 1. Log into Innovation Studio.
- 2. Click the main menu icon at the top left corner.
- 3. In the main menu, expand **Product Factory** > **Banking Product Dictionaries** menu.
- 4. Click the **Banking Product Type** menu item to open the **Banking Product Type List** page.



On the **Banking Product Type List** page, you can:

- Create a new banking product type record by clicking the **Insert** button at the top right corner.
- Edit an existing record from the list by double-clicking it and editing the Name field.

- Delete a record by selecting it and clicking the **Delete** button at the top right corner
- Search for a specific record by filling in any of the column headers of the displayed records list.

NOTE

Users with the associated role of [Banking Product Admin](#) can insert, update, or delete banking product type records.

Creating Banking Product Type Records

Follow these steps to create new banking product type records:

1. In the Innovation Studio, click the **Insert** button on the top right side of the **Banking Product Type List** page. The **Add Banking Product Type** page is displayed.

2. Fill in the following fields:

Field	Mandatory	Data Type	Details
Name	Yes	Text	Enter the name of the new banking product type.
Product Type	Yes	Option set	Select the product type from the drop-down.
Bank Account Type	Yes	Option set	Select the new bank account type to be used with the new banking product type from the drop-down.

3. Click the **Save and Close** button at the top right corner of the page.

Collateral Type

The **Collateral Type** dictionary is used to define the types of collateral used in the banking products' definition.

To manage collateral type records:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory** > **Banking Product Dictionaries** menu.
4. Click the **Collateral Type** menu item to open the **Collateral Type List** page.

Collateral Type list

← + Insert - Delete Export Q Advanced find

Name	Adjust Percent
Cash	100.0000
Commercial Real Estate	80.0000
Equity	70.0000
FixDeposit	100.0000
Fixed Income	60.0000
Government	90.0000
Industrial Real Estate	80.0000
Others	50.0000
Residential Real Estate	80.0000
Vehicles	20.0000

NOTE

Collateral types can also be managed within the FintechOS Portal's **Core Banking Operational** > **Collateral Type menu**.

On the **Collateral Type List** page, you can:

- Add a new collateral type record by clicking the **Insert** button at the top right corner of the page.
- Edit an existing collateral type record by double-clicking it.

- Delete a collateral type record by selecting it and clicking the **Delete** button at the top right corner of the page.
- Search for a specific record by filling in any of the column headers of the displayed records list.

NOTE

Users with the associated role of [Banking Product Admin](#) can insert, update, or delete collateral type records.

Creating Collateral Types

Follow these steps to create new collateral type records:

1. In the FintechOS Portal, click the **Insert** button on the top right side of the **Collateral Type List** page. The **Add Collateral Type** page is displayed.

← Save and close Save and reload Save and new

Add Collateral Type

Main Information

Name Code Adjust Percent Priority

Cash CA 100 4

Banking Products

2. Fill in the following fields:

Field	Required	Data Type	Details
Name	Yes	Text	The name of the collateral type.
Code	Yes	Text	The code of the collateral type.

Field	Required	Data Type	Details
Adjust Percent	No	Whole Number	<p>The adjusted value of the collateral type.</p> <div> <p>NOTE</p> <p>When a collateral type is defined, you can set an adjustment percent. The adjustment percent is a customization applied for that collateral. Further, when a collateral is linked to a secured loan contract, its market value is automatically adjusted by Core Banking using the adjustment percent.</p> </div>
Priority	No	Whole Number	The priority of the collateral type to be considered within a contract.

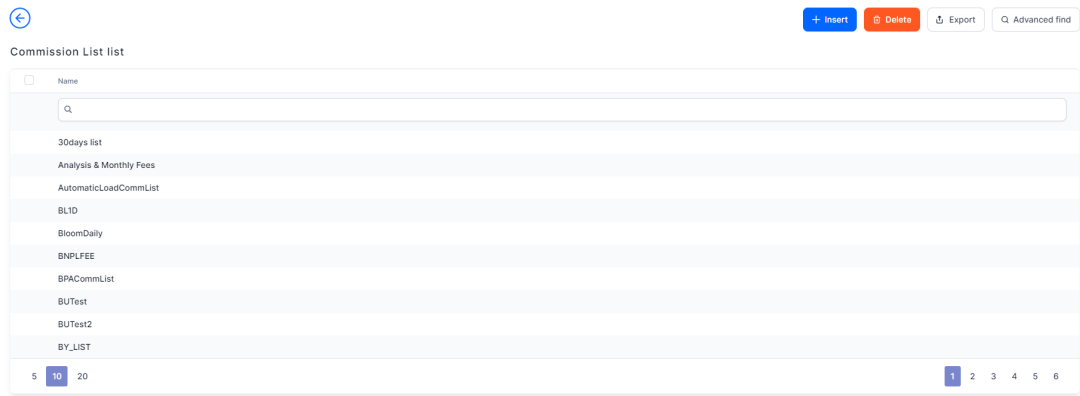
- Click the **Save and Reload** button at the top right corner of the page.
- In the newly displayed **Banking Products** section, you can see the banking products that have this collateral type associated, or you can add more banking products by clicking **Insert**.

Commission Schema

Commission schema records are used to categorize commission types. For example, there is an administration fee commission schema, a payment holiday commission schema, and so on.

To manage commission schemas:

- 1. Log into Innovation Studio.
- 2. Click the main menu icon at the top left corner.
- 3. In the main menu, expand **Product Factory** > **Banking Product Dictionaries** menu.
- 4. Click the **Commission Schema** menu item to open the **Commission Schema List** page.



On the **Commission Schema List** page, you can:

- Add a new commission schema by clicking the **Insert** button at the top right corner of the page.
- Edit an existing commission schema by double-clicking it.
- Delete a commission schema by selecting it and clicking the **Delete** button at the top right corner of the page.

- Search for a specific record by filling in any of the column headers of the displayed records list.

NOTE

Users with the associated role of [Banking Product Admin](#) can insert, update, or delete commission schema records.

Creating Commission Schemas

Follow these steps to create new commission schema records:

1. In the FintechOS Portal, click the **Insert** button on the top right side of the **Commission Schema List** page. The **Add Commission Schema** page is displayed.

2. Fill in the following fields:

Field	Mandatory	Data Type	Details
Name	Yes	Text	Enter the name of the commission schema.

3. Click the **Save and Reload** button at the top right corner of the page. The new commission schema is created and ready to be used.

Commission Type

Commission types are used to categorize **commissions** according to their intended usage. For example, there are administration fee type commissions, front-end fee type commissions, payment holiday fee type commissions, return fee type commissions, and so on.

To manage commission types:

- 1. Log into Innovation Studio.
- 2. Click the main menu icon at the top left corner.
- 3. In the main menu, expand **Product Factory > Banking Product Dictionaries** menu.
- 4. Click the **Commission Type** menu item to open the **Commission Types List** page.

+ Insert

- Delete

Export

Advanced find

Commission Types list

Name	Periodicity Type
Administration Fee	Monthly
Administration Fee	1DAY
Commission Undrawn Amount (overdraft) Monthly	Monthly
Commission Undrawn Amount (overdraft) Once	Once
Commission Unusage Monthly	Monthly
Commission Unusage Once	Once
Commission Usage Monthly	Monthly
Commission Usage Once	Once
Front-end Fee	Once
Management Fee	

5

10

20

1

2

On the **Commission Types List** page, you can:

- Add a new commission type by clicking the **Insert** button at the top right corner of the page.
- Edit an existing commission type by double-clicking it.
- Delete a commission type by selecting it and clicking the **Delete** button at the top right corner of the page.

- Search for a specific record by filling in any of the column headers of the displayed records list.

The **Edit Commission Type** page allows you to configure commission type settings.

NOTE

Users with the associated role of **Banking Product Admin** can insert, update, or delete commission type records.

Creating Commission Types

Follow these steps to create new commission type records:

1. In the FintechOS Portal, click the **Insert** button on the top right side of the **Commission Types List** page. The **Add Commission Type** page is displayed.

2. Fill in the following fields from the **Commission Type** section:

Field	Mandatory	Data Type	Details
Commission Schema	Yes	Lookup	Select the schema to which this commission type belongs, if any.
Name	Yes	Text	Enter the name of the commission type.

Field	Mandatory	Data Type	Details
Periodicity type	No	Option set	Automatically filled-in when you choose the commission type.
Operation Item	No	Lookup	Select the operation item to which this commission type should be applied.

- Click the **Save and Close** button at the top right corner of the page. The new commission type is created and ready to be used.

Covenant

Covenants are conventions that applicants must abide by after getting the loan. This is usually applicable for corporate clients that must meet certain requirements in order to continue to receive disbursements. The **Covenant** dictionary is used to manage the covenant records further used in Banking Product Factory and in Core Banking.

To manage covenant records:

- Log into Innovation Studio.
- Click the main menu icon at the top left corner.
- In the main menu, expand **Product Factory > Banking Product Dictionaries** menu.
- Click the **Covenant** menu item to open the **Covenants List** page.

← + Insert - Delete Export Q Advanced find

Covenants list

Name	Type	Description
Borrowers should perform tax obligations	Affirmative	The lenders expect the borrowers to perform their tax obligations to both the...
Lender can monitor borrower's current ratio	Financial	The lender may continuously monitor the borrower's current ratio to ensure it ...
Lender possesses the right to prevent mergers or acquisitions	Negative	A clear stipulation that the lenders possess the right to prevent mergers or ac...

On the **Covenants List** page, you can:

- Add a new covenant record by clicking the **Insert** button at the top right corner of the page.
- Edit an existing covenant record by double-clicking it.
- Delete a covenant record by selecting it and clicking the **Delete** button at the top right corner of the page.
- Search for a specific record by filling in any of the column headers of the displayed records list.

NOTE

Users with the associated role of [Banking Product Admin](#) can insert, update, or delete covenant records.

Creating Covenants

If you want to create other records than the predefined covenant records that come out-of-the-box with the Banking Product Factory package, follow these steps:

1. In the FintechOS Portal, click the **Insert** button on the top right side of the **Covenants List** page. The **Add Covenant** page is displayed.

← Save and close Save and reload Save and new

Add Covenant

Main Information

Name Type Description

Borrowers should perform tax obligations Affirmative The lenders expect the borrowers to perform their tax obligations to both the business and towards their employees.

2. Fill in the following fields:

Field	Mandatory	Data Type	Details
Name	No	Text	Enter the name of the covenant.

Field	Mandatory	Data Type	Details
Type	No	Option Set	Select the type of the covenant from the drop-down. Possible values: Affirmative, Negative, and Financial.
Description	No	Text Area	Enter the description of the covenant.

- Click the **Save and Reload** button at the top right corner of the page. The new covenant is created and ready to be used.

Loan Periodicity

Loan periodicity is the dictionary used to define the regularity of payments. For example, payments related to loan contracts, commissions, or installments can be performed once, daily, monthly, yearly, and so on.

To manage loan periodicity records:

- Log into Innovation Studio.
- Click the main menu icon at the top left corner.
- In the main menu, expand **Product Factory** > **Banking Product Dictionaries** menu.

4. Click the **Loan Periodicity** menu item to open the **Loan Periodicity** page.

The screenshot shows the 'Loan Periodicity' page. At the top, there are three buttons: '+ Insert' (blue), 'Delete' (orange), and 'Export' (grey). To the right is a search bar labeled 'Q. Advanced find'. Below these is a table with three columns: 'Name', 'Periodicity', and 'Measurement Unit'. The table contains 11 rows of data. At the bottom left of the table is a pagination control showing '5', '10', and '20'. At the bottom right is a page indicator showing '1' and '2'.

Name	Periodicity	Measurement Unit
Once	0	Once
1DAY	1	Days
Weekly	1	Weeks
Monthly	1	Months
Bimonthly	2	Weeks
Trimestrial	3	Months
4 Weeks	4	Weeks
Semestrial	6	Months
Annual	12	Months
15Days	15	Days

On the **Loan Periodicity** page, you can:

- Add a new loan periodicity record by clicking the **Insert** button at the top right corner of the page.
- Edit an existing loan periodicity record by double-clicking it.
- Delete a loan periodicity record by selecting it and clicking the **Delete** button at the top right corner of the page.
- Search for a specific record by filling in any of the column headers of the displayed records list.

NOTE

Users with the associated role of [Banking Product Admin](#) can insert, update, or delete loan periodicity records.

Creating Loan Periodicity Records

Follow these steps to create new loan periodicity records:

1. In the FintechOS Portal, click the **Insert** button on the top right side of the **Loan Periodicity** page. The **Add Loan Periodicity** page is displayed.

← Add Loan Periodicity

Save and close Save and reload Save and new

Main Information

Name Trimestrial Periodicity 3 Measurement Unit Months

2. Fill in the following fields from the **Loan Periodicity** section:

Field	Mandatory	Data Type	Details
Name	No	Text	Enter the name of the periodicity.
Periodicity	Yes	Whole Number	Enter the number of measurement units for the periodicity.
Measurement Unit	Yes	Option Set	Select the measurement unit applicable for the periodicity from the drop-down. Possible values: Days, Weeks, Months, Years, and Once.

3. Click the **Save and Reload** button at the top right corner of the page. The new loan periodicity is created and ready to be used.

Operation Item

Operation items are those items that relate to a bank's core business, such as all types of fees, commissions, principals, interests, advances or penalty calculations. They can also be considered as balance types that add up to a certain deal or used in tracing what happened on a particular deal. For instance, on the first day of using a new loan,

there is only the Loan Principal (LP) on that deal, or it can also have an Advance (ADV) in some particular cases or even a Frond-end Fee (FEF). As the deal progresses, depending on the definition and costs, as well as on repayments, the loan principal can become Paid Principal (PP) or Overdue Principal (OVP) if due amounts are not paid.

After defining the operation items, they are used by Banking Product Factory in the calculation processes of payment and repayment notifications, due amounts, accounting entries, and others.

Example of using an operation item within a commission type definition:

Save and close

Save and reload

Edit Commission Type

Main Information

Commission Schema

Payment Holiday

Name

Payment Holiday Fee

Periodicity Type

Once

Operation Item

Payment Holiday Fee

Example of using an operation item within an interest definition:

Save and close

Save and reload

Edit Interest

Main Information

Code

testpenalty

Name

testpenalty

Interest Type Settings

Interest Type

Fixed

Interest Value

+ Insert

X Delete

Export

Refresh

Value	Status	Valid From	Valid To
7.00	Active	16/06/2021	16/06/2099

Interest Special Settings

Is For Overdraft

Is Credit Line Interest

Is Debit Order Interest

For Slight Deposit

Penalty Type Interest Settings

Is Penalty

Is General

Applied To Loan Item (If Overdue)

Loan Principal

Example of using an operation item within a repayment notification's details:

EDIT REPAYMENT NOTIFICATION

REPAYMENT NOTIFICATION

No.

198865

Contract

3481

Currency

EUR

Notification Date

17/06/2022

Maturity Date

17/06/2022

Total Amount

77.88

REPAYMENT NOTIFICATION DETAILS

Export

Refresh

<input type="checkbox"/>	Operation Item	Value	RemainingValue	Is Paid
<input type="checkbox"/>	Loan Principal	76.92	76.92	<input type="checkbox"/>
<input type="checkbox"/>	Loan Interest	0.96	0.96	<input type="checkbox"/>

PAYMENT ALLOCATIONS

<input type="checkbox"/>	Payment No.	Payment Date	Operation Item	Allocated Amount	DueDate	Delay (days)
--------------------------	-------------	--------------	----------------	------------------	---------	--------------

Banking Product Factory enables you to define the desired operation items by managing the records in the **Operation Item** menu. To manage operation item records:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory > Banking Product Dictionaries** menu.
4. Click the **Operation Item** menu item to open the **Operation Item** page.

←

+ Insert

Delete

Export

Advanced find

Operation Item

<input type="checkbox"/>	Code	Name	Include In Penalty Calculation
<input type="checkbox"/>	RPF	Repayment Fee	<input type="checkbox"/>
<input type="checkbox"/>	LP	Loan Principal	<input checked="" type="checkbox"/>
<input type="checkbox"/>	LLI	Life Insurance	<input type="checkbox"/>
<input type="checkbox"/>	LAF	Loan Admin Fee	<input type="checkbox"/>
<input type="checkbox"/>	LI	Loan Interest	<input checked="" type="checkbox"/>
<input type="checkbox"/>	FEF	Front-end Fee	<input checked="" type="checkbox"/>
<input type="checkbox"/>	MGT	Management Fee	<input type="checkbox"/>
<input type="checkbox"/>	OVP	Overdue Principal	<input type="checkbox"/>
<input checked="" type="checkbox"/>	OVI	Overdue Interest	<input type="checkbox"/>
<input type="checkbox"/>	PI	Paid Interest	<input type="checkbox"/>

5

10

20

1

2

On the **Operation Item** page, you can:

- Create a new operation item record by clicking the **Insert** button at the top right corner.
- Edit an existing record from the list by double-clicking it and editing the existing values in the fields.
- Delete a record by selecting it and clicking the **Delete** button at the top right corner
- Search for a specific record by filling in any or all the column headers of the displayed records list.

NOTE

Users with the associated role of [Banking Product Admin](#) can insert, update, or delete operation item records.

Creating Operation Item Records

Follow these steps to create new operation item records:

1. In the FintechOS Portal, click the **Insert** button on the top right side of the **Operation Item** page. The **Add Operation Item** page is displayed.

← Add Operation Item Save and close Save and reload Save and new

Main Information

Code	Name	Include In Penalty Calculation
LP	Loan Principal	<input type="checkbox"/>

2. Fill in the following fields:

Field	Mandatory	Data Type	Details
Code	No	Text	Enter the unique code of the operation item.
Name	No	Text	Enter the name of the operation item.

Field	Mandatory	Data Type	Details
Include In Penalty Calculation	Yes	Boolean	<p>Select the checkbox to mark this new item as an operation item used for penalty calculation.</p> <div><p>NOTE</p><p>If a banking product has in its attached interests list an interest with Is General = True, then at the contract level the penalty percent is applied to all operation items that are overdue and are marked with Include In Penalty Calculation = True. Read more information about interests</p></div>

Field	Mandatory	Data Type	Details
			and how to define them on the Interests page within the Banking Product User Guide .
Penalty Item (for Repayment Notification)	Yes	Lookup	This field is displayed and mandatory only if Include In Penalty Calculation = True. Select from the list an existing operation item in whose penalty calculation this new item must participate.

3. Click the **Save and Close** button at the top right corner of the page.

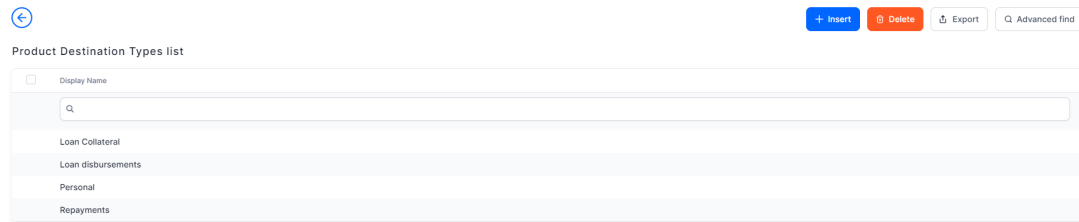
Product Destination Type

The **Product Destination Type** dictionary is used to define the destination types that help differentiate banking products.

To manage product destination type records:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.

3. In the main menu, expand **Product Factory** > **Banking Product Dictionaries** menu.
4. Click the **Product Destination Type** menu item to open the **Product Destination Types List** page.



On the **Product Destination Types List** page, you can:

- Add a new product destination type record by clicking the **Insert** button at the top right corner of the page.
- Edit an existing product destination type record by double-clicking it.
- Delete a product destination type record by selecting it and clicking the **Delete** button at the top right corner of the page.
- Search for a specific record by filling in any of the column headers of the displayed records list.

NOTE

Users with the associated role of [Banking Product Admin](#) can insert, update, or delete product destination type records.

Creating Product Destination Types

Follow these steps to create new product destination type records:

1. In the FintechOS Portal, click the **Insert** button on the top right side of the **Product Destination Types List** page. The **Add Product Destination Type** page is displayed.

← Save and close Save and reload Save and new

Add Product Destination Type

Main Information

Name Display Name Is Default

Personal Loan Personal Loan ☒

2. Fill in the following fields:

Field	Mandatory	Data Type	Details
Name	No	Text	Enter the name of the product destination type.
Display Name	No	Text	Enter the display name of the product destination type.
Is Default	No	Boolean	If selected, this is the default product destination type.

3. Click the **Save and Reload** button at the top right corner of the page. The new product destination type is created and ready to be used.

Reconciliation Accounts

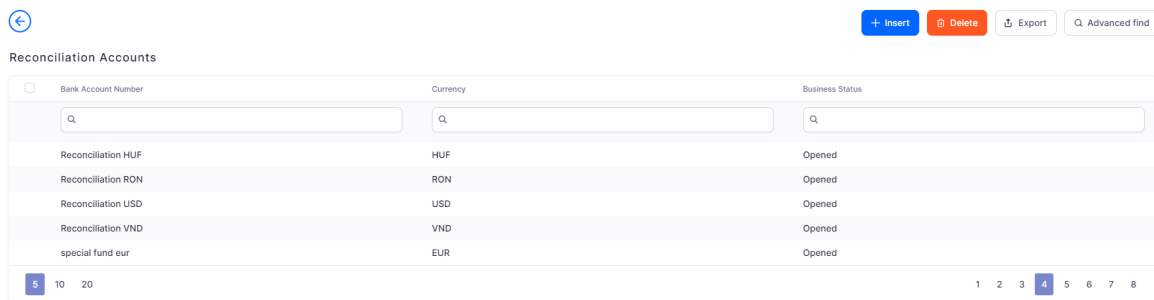
Reconciliation is an accounting process that compares two sets of records to check that figures are correct and in agreement. Reconciliation also confirms that accounts in the general ledger are consistent, accurate, and complete. Core Banking uses reconciliation accounts in its accounting processes, while Banking Product Factory uses such accounts in the product definition itself, as tools for monitoring the activity for a specific product or groups of products. Reconciliation accounts are also known as

self-bank accounts or internal bank accounts. When creating a banking product, you must choose such a reconciliation account within the **Associated Transactions** tab of the banking product. These accounts are later used by the contracts based on those banking products when performing debit or credit transactions.

Banking Product Factory enables you to manage the reconciliation accounts used within your bank in the **Reconciliation Accounts** menu.

To manage reconciliation accounts:

1. Log into Innovation Studio.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory > Banking Product Dictionaries** menu.
4. Click the **Reconciliation Accounts** menu item to open the **Reconciliation Accounts** page.



Reconciliation Accounts

Bank Account Number	Currency	Business Status
Reconciliation HUF	HUF	Opened
Reconciliation RON	RON	Opened
Reconciliation USD	USD	Opened
Reconciliation VND	VND	Opened
special fund eur	EUR	Opened

On the **Reconciliation Accounts** page, you can:

- Create a new reconciliation account by clicking the **Insert** button at the top right corner.
- Edit an account from the list by double-clicking it.
- Delete an account by selecting it and clicking the **Delete** button at the top right corner
- Search for a specific record by filling in any or all of the column headers of the displayed records list.
- View the debit and credit operations performed through each reconciliation account by double-clicking the desired account and observing the **Debit**

Operations and Credit Operations sections.

←

CURRENT STATUS:
OPENED

Save and reloadBusiness Transactions

Edit Bank Account

Main Information

Bank

FintechOS Bank

↓

✎

Internal Bank Account

☒

Currency

EUR

↓

✎

Bank Account Number

Reconciliation EUR test

Initial Balance

999,999,999.99

Debit Operations

ExportRefresh

Value date	Operation date	Currency	Amount	Detail text
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
No data				

Credit Operations

ExportRefresh

Value date	Operation date	Currency	Amount	Detail text
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
No data				

NOTE

Users with the associated role of [Banking Product Admin](#) can insert, update, or delete reconciliation account records.

Creating Reconciliation Accounts

Follow these steps to create reconciliation accounts:

1. In the FintechOS Portal, click the **Insert** button on the top right side of the **Reconciliation Accounts** page. The **Add Bank Account** page is displayed.

←

Save and closeSave and reloadSave and new

Self Bank Account

Add Bank Account

Main Information

Bank

FintechOS Bank

↓

✎

Internal Bank Account

☒

Currency

HUF

↓

✎

Bank Account Number

Reconciliation HUF

Initial Balance

999,999,999.99

Debit Operations

Credit Operations

2. Fill in the following fields:

Field	Mandatory	Data Type	Details
Bank	Yes	Lookup	Banking Product Factory automatically completes this field with the bank marked as Main Bank in the system.
Internal Bank Account	Yes	Boolean	This checkbox specifies that the account is an internal bank account, used for reconciliation. Automatically checked by the system as True. Not editable.
Currency	Yes	Lookup	Select from the list the currency of the reconciliation account.
Bank Account Number	Yes	Text	Enter the bank account number for the reconciliation account.
Initial Balance	Yes	Numeric	This field represents the reconciliation account's initial amount. It is automatically completed with the value of 999,999,999.00. You can edit the value. The initial balance is needed especially for those accounts that are used for debit purposes, representing the source for some transactions.

3. Click the **Save and Reload** button at the top right corner of the page. The reconciliation account is saved and its status becomes **Opened**, ready to be used.

The **Debit Operations** and **Credit Operations** sections are now displayed, still empty. New lines show up in these two sections when transactions are performed for contracts based on banking products that use this reconciliation account. The following information is displayed about each transaction:

Field	Details
Value date	The date when the transaction was requested in the system.
Operation date	The date when the transaction was operated by the system.
Currency	The currency of the transaction.
Amount	The amount of the transaction.
Detail text	The text representing information about the transaction, such as event type, repayment notification number, due date, and so on.

Reconciliation Accounts Usage in Core Banking

Let’s consider the product definition of the Current Account EURO banking product, where the value selected for the **Reconciliation Account** field = **Reconciliation EUR**:

1 Main Info2 Details3 Availability4 Dimensions5 Product Formula Engine6 Documents7 Lean Core Settings

Self Bank Account Associated With The Product

Reconciliation AccountNegative balance treatment

Reconciliation EURNoMessage

Payment Allocation Settings

Repayment Allocation MethodGrace D

CostOrder

Checking the balance of the Reconciliation EUR account in the **Reconciliation Accounts** menu, we see the **Initial Balance** = 10,000,139,541.26:

EDIT BANK ACCOUNT

BANK ACCOUNT

Bank

FintechOS Bank

Currency

EUR

Initial Balance

10,000,139,541.26

Internal Bank Account

☒

Bank Account Number

Reconciliation EUR

Using an approved contract based on the Current Account EURO banking product, we inserted and approved a **Top-Up Account** transaction type, with an **Event Value** = 300:

←

CURRENT STATUS:
APPROVED

TRANSACTION NUMBER
ECB 2040

✓

📄

Event

Contract

2941

Customer

DEMOPJ

Source Bank Account Balance

411

Transaction Type

Top Up Account

Currency

EUR

Event Date

30/09/2021

Event Value

300

Source Account

Reconciliation EUR

Checking back to the Reconciliation EUR account in the **Reconciliation Accounts** menu, the balance of the reconciliation account is updated to reflect the transaction just inserted above. The new balance value is 10,000,139,241.26, with a difference of -300 from the previous value. Observe that the same debit transaction is listed in the **Debit Operations** section:

EDIT BANK ACCOUNT

BANK ACCOUNT

Bank

FintechOS Bank

Currency

EUR

Initial Balance

10,000,139,241.26

Internal Bank Account

✓

Bank Account Number

Reconciliation EUR

DEBIT OPERATIONS

Export

Refresh

<input type="checkbox"/>	Value date	Operation date	Currency	Amount	Detail text
	🔍	📅 🔍	📅 🔍	🔍	🔍
	30/09/2021 16:38	30/09/2021 16:38	EUR	300.00	top up credit account

Transaction Type

The **Transaction Type** menu holds the accounting model and the item configuration. It is used for inserting the financial data transactions.

The transaction types are associated with banking products within the **Associated Transactions** tab during [product definition](#), either automatically or manually.

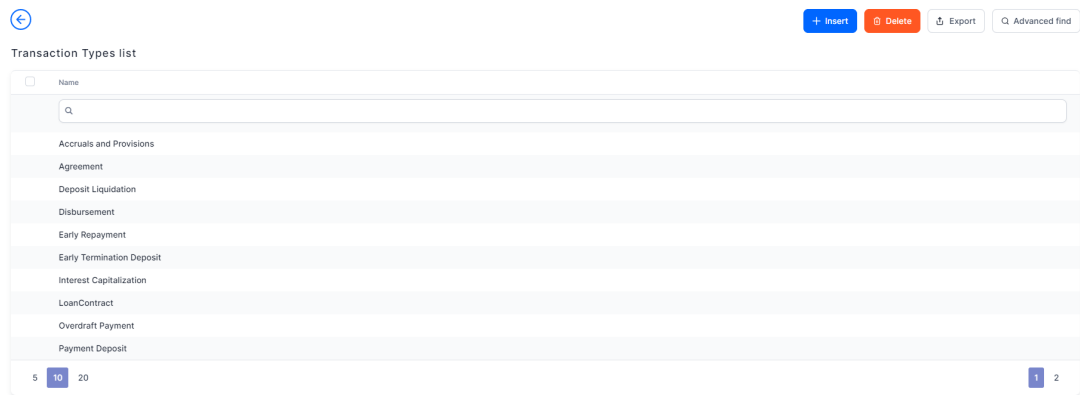
For using transaction types in conjunction with Core Banking, see [Transaction Types Used in Core Banking](#). Also take a look at the [predefined transaction types](#) used by Core Banking within its scripts.

NOTE

Users with the associated role of [Banking Product Admin](#) can insert, update, delete, or export **Transaction Types** records.

To manage transaction types, follow these steps:

- 1. Log into Innovation Studio.
- 2. Click the main menu icon at the top left corner.
- 3. In the main menu, expand **Product Factory** > **Banking Product Dictionaries** menu.
- 4. Click the **Transaction Type** menu item to open the **Transaction Types List** page.



On the **Transaction Types List** page, you can:

- Add a new transaction type record by clicking the **Insert** button at the top right corner.
- Edit an existing transaction type record from the list by double-clicking it.
- Delete a transaction type record by selecting it and clicking the **Delete** button at the top right corner.

Creating Transaction Types

1. To create a new transaction type, click the **Insert** button on the top right side of the **Transaction Types List** page.
2. On the newly displayed **Add Transaction Type** page, fill in the following fields:

←

Save and close
Save and reload
Save and new

Transaction Configuration

Add Transaction Type

Settings

Name *

Transaction Code *

Process Type * ↓

Is Automatic Transaction * ☐

Real Time Process ☐

Only One Draft ☒

Generate New Contract Version ☐

Edit Form * ↓

Transaction Operation Type * ↓

Is System Transaction ☐

Commission Type ↓

Return Commission Type ↓

Accounting Configurations

Generates Accounting Entry * ☒

OL Master Entity * ⚙️

Purge Configurations

To Be Purged * ☒

Purge Number of Days *

Master Purge Entity * ⚙️

Transaction Value Types

Transaction Accounting Models

Field	Required	Data Type	Details
Settings			
Name	Yes	Text	The name of the transaction type.
Transaction Code	Yes	Text	The code of the transaction type.

Field	Required	Data Type	Details
Is Automatic Transaction	Yes	Boolean	<p>This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations.</p> <div> IMPORTANT! If a transaction type is marked as an automatic transaction (<code>Is Automatic Transaction = True</code>), then that transaction type cannot be selected in the Events page when closing contract events. </div>
Is System Transactions	No	Boolean	<p>This checkbox marks the transaction as being neither a credit of the account, nor an allocation of funds, but a transaction that does not influence other transactions within the account. System transactions are meant to be used only for accounting. It is used when there's a need for a transaction for the sole purpose of generating accounting entries (accruals, provisions).</p>
Real Time Process		Boolean	<p>This checkbox marks the transaction as to be processed in real-time. If the value is <code>True</code>, then the transaction is processed right away. If the value is <code>False</code>, then the transaction is inserted as a bank account transaction queue record.</p>
Edit Form	No	Lookup	<p>The form used to edit this transaction type. The lookup only shows forms defined on the Contract Event entity.</p>
Only One Draft	No	Boolean	<p>If you select this checkbox, there can be only one record of this transaction type in Draft status created at the contract level.</p>
Generate New Contract Version	No	Boolean	<p>This checkbox allows you to specify if a new contract version should be generated by this transaction type.</p>

Field	Required	Data Type	Details
Commission Type	No	Lookup	The commission type applicable for this transaction type. Return fee commissions are filtered out and can't be selected.
Return Commission Type	No	Lookup	The return fee commission type applicable for this transaction type. Only return fee commissions can be selected.
Process Type	Yes	Option set	<p>This field associates the process type with the transaction operation type, which makes the connection with the transaction motor of bank accounts. Select one of the processes defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div>
Accounting Configurations			
Generates Accounting Entry	Yes	Boolean	This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity.
OL Master Entity	Yes	Lookup	The entity referenced by the accounting systems.
Purge Configurations			
To Be Purged	No	Boolean	This checkbox marks the transaction as purgeable. If selected, it allows you to purge or archive records in Draft status.
Purge Number of Days	Yes	Whole Number	The default number of calendar days that a record can be kept in Draft status before it is purged. For additional information, see the Core Banking System Parameters page. This field is displayed only when To Be Purged = True.
Master Purge Entity	Yes	Lookup	The master purge entity under which the draft records are. This field is displayed only when To Be Purged = True.

3. Click **Save and reload**.

IMPORTANT!

If a transaction type is marked to automatically generate accounting entries (Generates Accounting Entry = True), then the following sections are displayed: **Transaction Value Type**, **Transaction Item Accounting Configuration**, and **Transaction Accounting Models**.

Transaction Value Type

Transaction value types are defined as header items or detail items. Header items are the general details of a transaction (for example date, customer, currency, and so on). The detail items are grouped into numeric or text information.

In this section, you can create and determine the values calculated for each transaction. The additional data from here is used in the **Transaction Accounting Models** section.

1. To add a new transaction value type, click the **Insert** button under the **Transaction Value Type** section. The **Add Transaction Value Type** page opens.
2. Fill in the following fields:

←

✓

Save and close

Save and reload

Save and new

Add Transaction Value Type

Transaction Value Type

Value Type Name

DocTest

Transaction Type

Disbursement

Is Header

☒

Type

Numeric

Value Type Attribute

eventValue

Formula

eventValue * 2

Field	Required	Type	Description
Value Type Name	No	Text	The name of the value type.
Transaction Type	No	Lookup	The transaction value type.

Field	Required	Type	Description
Type	No	Option Set	The type of the transaction. The following options are available: <ul style="list-style-type: none"> • [none] • Numeric • Text
Value Type Attribute	No	Lookup	The value of a specific attribute from the source entity. It is a list of all the attributes defined in the SourceEntityId field from the FTOS_GL_TransactionType entity.
Is Header	No	Boolean	When selected, it defines the header items of the transaction.
Formula	No	Text	Supports only basic math operations: addition (+), subtraction (-), multiplication (*), and division (/). Input a specific formula based on the Value Type Attribute chosen.

3. Click **Save and close**.

When a transaction value type is marked as a header item, (Is Header = True), the transaction values are set into the attribute values of the FTOS_GL_OperationTransaction entity. If the **Value Type Name** field is not an attribute of that entity, then the following error is displayed:

Name should be an attribute name from header table FTOS_GL_OperationTransaction.

A JSON file with default values is sent when using the function for setting the operation transaction values. The JSON file has the following form:

```
[
  {
    attributeName: 'DescriptionText',
    value: 'Disburse 1500'
  },
  {
    attributeName: 'ProvisionAmount',
    value: '15.00'
  }
]
```

The JSON file checks if there is any default value for the `attributeName`, from the **Value Type Name** field. If no values are returned, the **Formula** field is checked. When neither field returned any values, the source entity of the attribute from the **Value Type Attribute** field is checked.

Transaction Item Accounting Configuration

The **Transaction Item Accounting Configuration** section holds the configuration of each transaction. It helps define an account from the Accounting Chart.

This section holds the configuration for an item with the respective chart account. It represents the listing of the names of the accounts for the company inserted in the **Legal Entity** menu.

1. To add a new transaction item accounting configuration, click the **Insert** button under the **Transaction Item Accounting Configuration** section. The **Add Transaction Item Accounting Config** page opens.
2. Fill in the following fields:

← Save and close Save and reload Save and new

Add Transaction Item Accounting Config

Transaction Item Accounting Config

Accounting System Accounting Scope Chart Account

0002 DocTest 10101 test

Operational Item Currency Take From Banking Product

Repayment Fee EUR ☒

Field	Required	Type	Description
Accounting System	Yes	Lookup	The accounting system.
Accounting Scope	Yes	Lookup	The accounting scope.
Chart Account	Yes	Lookup	The accounting chart.
Operational Item	No	Lookup	The item of operations.
Currency	No	Lookup	The currency of the accounting entry line.
Take From Product	No	Boolean	If true, then the configurations for each transaction are inherited from the banking product level.

3. Click **Save and close**.

Transaction Accounting Models

This section holds the accounting models, all the rules used in order to generate accounting entries for each transaction.

The details from the **Debit Account Rule** and the **Credit Account Rule** are defined by the information from the **Transaction Item Accounting Configuration** section. All other details are defined by the information from the **Transaction Value Type** section.

1. To add a new transaction accounting model, click the **Insert** button under the **Transaction Accounting Models** section. The **Add Transaction Accounting Model** page opens.
2. Fill in the following fields:



Save and close

Save and reload

Save and new

Add Transaction Accounting Model

Transaction Accounting Model

Transaction Type: Accounting System:

Line Condition:

Debit Account Rule: Credit Account Rule:

Debit Customer Rule: Credit Customer Rule:

Accounting Entry Value Rule: currencyRule:

Item Rule: DescriptionRule:

EntityId Rule: Transaction Id Rule:

Transaction Detail Rule: Transaction Value Type:

Field	Required	Type	Description
Transaction Type	No	Lookup	The transaction type. It is auto-filled.
Accounting System	No	Lookup	The accounting system.
Line Condition	No	Text	The condition applied in order to post the accounting entry line.
Debit Account Rule	No	Text	The accounting entry value of the debit account. It is auto-filled.
Debit Customer Rule	No	Text	The rule to save the partner transaction in the debit-credit relationship. It is auto-filled.
Accounting Entry Value Rule	No	Text	The posted accounting entry value.
Item Rule	No	Text	The transaction item of the accounting entry line. It is auto-filled.
EntityId Rule	No	Text	The internal status of the record.
Transaction Detail Rule	No	Text	The rule to identify and post the ID of the operational transaction detail.

Field	Required	Type	Description
Credit Account Rule	No	Text	The credit account of the accounting entry line. It is auto-filled.
Credit Customer Rule	No	Text	It is auto-filled by the destination partner ID.
currencyRule	No	Text	The accounting entry line currency. It is auto-filled.
DescriptionRule	No	Text	The description of the generated accounting entry. It is auto-filled.
Transaction Id Rule	No	Text	The related contract ID of the transaction.
Transaction Value Type	No	Lookup	The value type of the transaction. It is defined in the Transaction Value Type section.

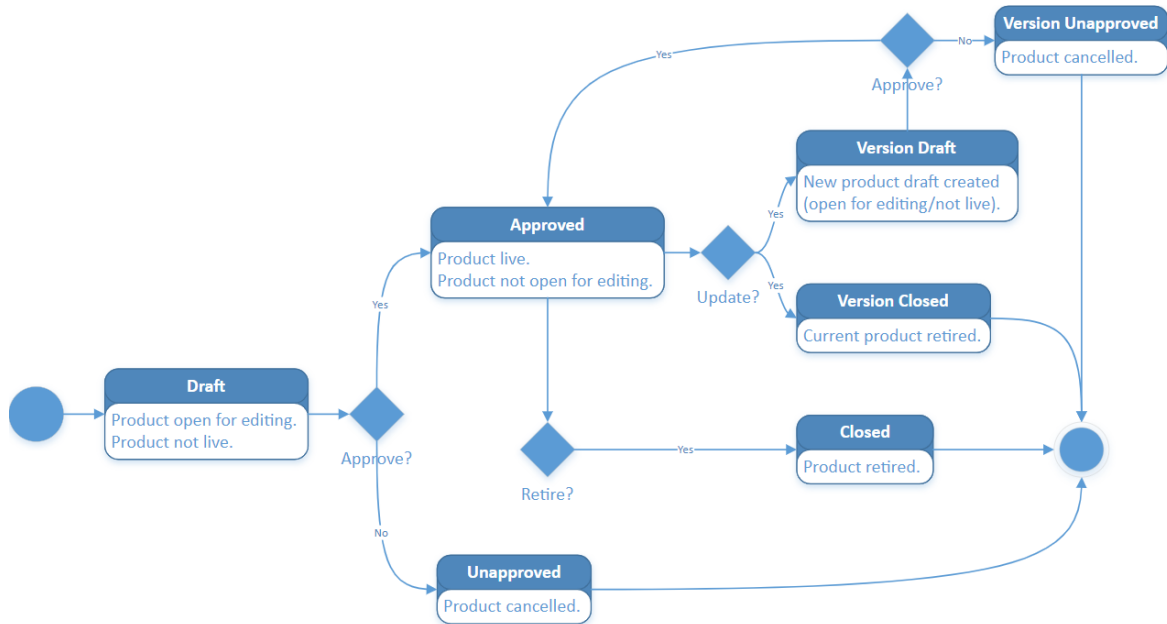
3. Click **Save and close**.

Banking Products' Life Cycle

You can manage a banking product's life cycle by changing its status from the top right corner of the screen.

CURRENT STATUS: **DRAFT** NEXT STATUS: **CHOOSE STATUS ▾**

The product status transitions are illustrated below:



Note that:

- Once a product is live, its settings can no longer be modified.
- If you want to update a live product, you must create a new product version.
- When you create a new product version, the current version is retired.
- Every product version starts in a draft state and must go through an approval process before going live.
- Only one version of a product can be live at one time.

Using Banking Products in Digital Journeys

IMPORTANT!

This page contains information about endpoints available for previous versions of the Banking Product Factory. For information about the updated endpoints available for versions **starting with v3.1**, please consult the [Banking Product Factory Developer Guide](#).

The new versions of the endpoints are backwards compatible, thus your existing integrations within digital journey are not affected.

To use a banking product built previously in a Form Driven Flow, a consultant or developer has to create an endpoint with a script. Later, in the **Advanced** tab of a digital journey, they must call the endpoint and add the product to the journey.

In the **Advanced** tab of a digital journey, apply the code example in FTOS_BP_GetBankingProductDetails, but changing the Banking product ID.

In this entity all information regarding a banking product is stored, therefore, all fields configured prior are available.

The endpoints are configured during the installation process. For more, details see [Creating Endpoints](#).

The following are the endpoints that call the information built in a banking product:

FTOS_BP_GetDiscountDetail

Returns the discount information.

Inputs:

- **productDiscountId** - from FTOS_BP_BankingProductDiscount;
- **bankingProductId** - from FTOS_BP_BankingProduct (attribute: FTOS_BP_BankingProductId); optional/ provided for formula association;
- **formulaInputId** - id of any entity used as master entity in data mapping input/ output at the formula setup; optional;
- **discountInput** - json for formula input if necessary when no mapping was done for formula. The form of this json should look like the one in test formula.

Outputs:

Object with details about the provided discount from FTOS_BP_BankingProductDiscount and associated FTOS_BP_Discount. If use Banking Formula is checked, then the value is equal to the formula result.

Call example:

```

1  //with formula
2  var data = {
3    "productDiscountId": "32d391e4-9f26-4315-9c1d-
   ebd54bfa4e1d",
4    "bankingProductId": "25b9efdf-6ca5-48c5-8507-
   5543a22377b2",
5    "discountInput": {
6      "Amount": 6000.00
7    }
8  };
9  ebs.callActionByName("FTOS_BP_GetDiscountDetail", data,
10 function(s){ if(s.UIResult){console.log
   (s.UIResult.Data.discountDetail)}});
11 /*
12 [
13   {
14     "id": "32d391e4-9f26-4315-9c1d-ebd54bfa4e1d",
15     "name": "discountAAAA",
16     "discountTypeId": "f0da4a04-a513-4394-8b60-
   96d0a9409d7c",
17     "value": 5.3,
18     "startDate": {
19       "invariantDate": "2021-03-01"
20     },

```

```

21         "endDate": {
22             "invariantDate": "2021-12-31"
23         },
24         "appliedToDimension": "a16d6728-76ac-4d72-8fa7-
a992e9a6a63f",
25         "interestTypeId": "3a5ffd12-bfc6-4826-bb81-
7e49d2f1c2c6",
26         "commissionTypeId": null,
27         "insuranceClassId": null,
28         "insuranceId": null,
29         "isOptionalDiscount": false,
30         "isPercentage": true,
31         "useFormula": true,
32         "formulaTypeId": "a0dd56a6-a0b9-446b-8e1d-
b2c052cafe0b"
33     }
34 ]
35 */
36 //without formula (value only)
37 var data = {
38     "productDiscountId": "32d391e4-9f26-4315-9c1d-
ebd54bfa4e1d"
39 };
40 ebs.callActionByName("FTOS_BP_GetDiscountDetail", data,
41 function(s){ if(s.UIResult){console.log
(s.UIResult.Data.discountDetail);}});
42
43 /*
44 [
45     {
46         "id": "32d391e4-9f26-4315-9c1d-ebd54bfa4e1d",
47         "name": "discountAAAA",
48         "discountTypeId": "f0da4a04-a513-4394-8b60-
96d0a9409d7c",
49         "value": 5,
50         "startDate": {
51             "invariantDate": "2021-03-01"
52         },
53         "endDate": {
54             "invariantDate": "2021-12-31"
55         },
56         "appliedToDimension": "a16d6728-76ac-4d72-8fa7-
a992e9a6a63f",
57         "interestTypeId": "3a5ffd12-bfc6-4826-bb81-
7e49d2f1c2c6",

```

```

58 |         "commissionTypeId": null,
59 |         "insuranceClassId": null,
60 |         "insuranceId": null,
61 |         "isOptionalDiscount": false,
62 |         "isPercentage": true,
63 |         "useFormula": false,
64 |         "formulaTypeId": null
65 |     }
66 | ]
67 | */

```

FTOS_BP_GetAvailableProductImage

Returns the product image.

Input:

- **bakingProductId** - from FTOS_BP_BankingProduct (attribute: FTOS_BP_BankingProductId)

Output:

- **productImage** - from FTOS_BP_BankingProduct (attribute: productImage)

Call example:

```

1 | ebs.callActionByNameAsync("FTOS_BP_
  | GetAvailableProductImage", { bankingProductId :
  | "f625e5e5-bc51-4bf8-8ff0-b8a295694a23" })
2 |     .then(function (e) {
3 |         var img = e.UIResult.Data;
4 |     }).catch(function (err) {
5 |         console.log(err);
6 |     });

```

FTOS_BP_GetBankingProductDetails

Returns the product details.

Input:

- **bakingProductId** - from FTOS_BP_BankingProduct (attribute: FTOS_BP_BankingProductid)

Output:

Section with the following fields:

- **product.Name** - from FTOS_BP_BankingProduct (attribute: Name)
- **product.ProductImage** - from FTOS_BP_BankingProduct (attribute: productImage)
- **product.Benefits** - from FTOS_BP_BankingProduct (attribute: Benefits)
- **product.DisplayConditions** - from FTOS_BP_BankingProduct (attribute: displayConditions)
- **product.NoOfDebtor** - from FTOS_BP_BankingProduct (attribute: NoOfDebtor)

Call example:

```

1 | ebs.callActionByNameAsync('FTOS_BP_
   | GetBankingProductDetails', { bankingProductId :
   | "f625e5e5-bc51-4bf8-8ff0-b8a295694a23"})
2 | .then(function (res) {
3 |     res = res.UIResult;
4 | }).catch(function (err) {
5 |     console.log(err);
6 | })

```

FTOS_BP_GetAvailabilityFiltersOnProduct

Returns the availability filters configured on a product.

Input:

- **BankingProductId** - from FTOS_BP_BankingProduct (attribute: FTOS_BP_BankingProductid)

Output:

- **filterName** - from FTOS_BP_ProductAvailabilityItemFilter (attribute: name)
- **FilterValue** - from FTOS_BP_ProductAvailabilityItemFilter (attribute: textValue)

Call example:

```

1 | ebs.callActionByNameAsync('FTOS_BP_
   | GetAvailabilityFiltersOnProduct', { bankingProductId :
   | "f625e5e5-bc51-4bf8-8ff0-b8a295694a23"})
2 | .then(function (res) {
3 |     res = res.UIResult;
4 | }).catch(function (err) {
5 |     console.log(err);
6 | })

```

FTOS_BP_GetProductType

Returns the types of banking product in which there are active banking products.

Input:

- **currentDate** - new Date();

Output:

- function **getProductType** from library BankingProductHelper.Utils - returns an object with product types.

Call example:

```

1 | var p = {};
2 | p.currentDate = new Date();
3 | ebs.callActionByNameAsync("FTOS_BP_GetProductType",
   | p).then(function (e) {
4 |     var type = e.UIResult.Data;
5 |     }).catch(function (err) {
6 |         console.log(err);
7 |     });

```

FTOS_BP_GetAvailableProductFeatures

Returns the product features.

Input:

- **BankingProductId** - from FTOS_BP_BankingProduct (attribute: FTOS_BP_BankingProductid)

Output:

- section with all features from FTOS_BP_Feature for the sent banking product.

Call example:

```
1 ebs.callActionByNameAsync("FTOS_BP_
  GetAvailableProductFeatures", { bankingProductId :
  "f625e5e5-bc51-4bf8-8ff0-b8a295694a23"})
2 .then(function (e) {
3     var features = e.UIResult.Data;
4     });
```

FTOS_BP_GetAvailableProductsExtra

Returns the product extras.

Input:

- **currentDate** - date
- **productTypeId** - ID of banking product Type - from FTOS_BP_BankingProduct (attribute: bpProductTypeId)

Output:

```
bankingProductCode: "HOUSE"
bankingProductId: "bd47d581-e67f-44f7-9be1-ff0b051a73cc"
bankingProductName: "1st House"
bankingProductType: "MG"
bankingProductTypeId: "e9f52e35-1faa-4cb7-b4bc-d685f326c907"
▼ features: Array(4)
  ► 0: {base_name: "3.50% Fixed Annual IR"}
  ► 1: {base_name: "Instant approval"}
  ► 2: {base_name: "No fees"}
  ► 3: {base_name: "Only 5% Downpayment"}
  length: 4
  __proto__: Array(0)
productIng: [{"Name": "m-2.png", "RealName": "m-2_43b8271f-a8a0-47b2-a0fb-28dd9dd2fe48.png"}]
  __proto__: Object
► 1: {bankingProductId: "5a326c60-7672-4e45-bafe-0e7cb02cf2dd", bankingProductName: "Construction Loan", bankingProductCode: "PERSONAL", bankingProductTypeId: "e9f52e35-1faa-4cb7-b4bc-d685f326c907"}
► 2: {bankingProductId: "51423eee-6202-48d7-997e-99ae55a7c3de", bankingProductName: "Mortgage", bankingProductCode: "MORTGAGE", bankingProductTypeId: "e9f52e35-1faa-4cb7-b4bc-d685f326c907"}
```

Call example:

```

1 | var p = {}
2 | p.currentDate = new Date();
3 | p.productId = "E9F52E35-1FAA-4CB7-B4BC-D685F326C907"
4 | p.filterList = [{ "name": "age", "value": 25 }];
5 | ebs.callActionByNameAsync("FTOS_BP_
  |   GetAvailableProductsExtra", p).then(function (e) {
6 |         var data = e.UIResult.Data.products;
7 |     });

```

FTOS_BP_GetPrimaryAttribute

Returns the primary attribute.

Input:

- **FromEntity** - entity ID

Output:

- the name of Primary attribute from current entity.

Call example:

```

1 | var p={};
2 | p.FromEntity = "9a9ec886-296b-487d-aff9-30b8e1eb43b8";
  |   //ID of FTOS_BP_BankingProduct entity
3 | ebs.callActionByNameAsync("FTOS_BP_GetPrimaryAttribute",
  |   p).then(function (s) {
4 |         if (s.UIResult.Data) {
5 |             var primaryattribute =
  |   s.UIResult.Data.Records[0].Name;
6 |         }
7 |     });
8 |
9 |   //Returns "Name"

```

FTOS_BP_GetProductDocuments

Returns the documents on a banking product.

Input:

- **bankingProductId** - from FTOS_BP_BankingProduct (attribute: FTOS_BP_BankingProductid)

Output:

- section with data from FTOS_BP_BankingProductDocument for the current banking product.

Call example:

```

1 | var p = {};
2 | p.bankingProductId = "f625e5e5-bc51-4bf8-8ff0-
  | b8a295694a23";
3 | ebs.callActionByNameAsync('FTOS_BP_GetProductDocuments',
  | p).then(function (res) {
4 |     res = res.UIResult;
5 | });

```

FTOS_BP_GetInterestDetail

Returns the interest details.

Input:

- **interestListId** - from FTOS_BP_InterestList (attribute: FTOS_BP_InterestListid);
- **interestId** - from FTOS_BP_Interest (attribute: FTOS_BP_Interestid);
- **bankingProductId** - from FTOS_BP_BankingProduct (attribute: FTOS_BP_BankingProductid) - optional/ provided for formula association;
- **formulaInputId** - id of any entity used as master entity in data mapping input/ output at the formula setup; optional;
- **interestInput** - json for formula input if necessary when no mapping was done for formula. The form of this json should look like the one in test formula.

The scope of the endpoint can be an **interestListId** returning all interests in that list or an **interestId** returning all the details for a specific interest.

Output:

- object with details about all the interests in the interest list from FTOS_BP_Interest and FTOS_BP_InterestValue. If interest type is BankingFormula, then interestRate is equal to the formula result.

Call example:

- **minimal:**

```

1 | var data = {};
2 | data.interestListId = "c7a1b28c-e3f4-4259-b8e5-
  | 638b21bb69a7";
3 | ebs.callActionByName("FTOS_BP_GetInterestDetail", data,
4 | function(s){ if(s.UIResult){console.log
  | (s.UIResult.Data);}}});

```

- **maximal:**

```

1 | var data = {
2 |   "interestListId": "a8d82639-82e3-464f-aa40-
  | e6592daf6bd1",
3 |   "bankingProductId": "3438f5a5-fd00-4745-bb77-
  | 820baeffe3f6",
4 |   "formulaInputId": "2872f33f-b757-48b2-a1d1-
  | 203bef75813d",
5 |   "interestInput": {
6 |     "Amount": 6000.00
7 |   }
8 | };
9 | ebs.callActionByName("FTOS_BP_GetInterestDetail", data,
10 | function(s){ if(s.UIResult){console.log
  | (s.UIResult.Data);}}});

```

FTOS_BP_GetCommisionDetail

Returns details from the commission.

Input:

- **commissionListId** - from FTOS_BP_CommissionList (attribute: FTOS_BP_CommissionListId);
- **commissionId** - from FTOS_BP_Commission (attribute: FTOS_BP_CommissionId);
- **bankingProductId** - from FTOS_BP_BankingProduct (attribute: FTOS_BP_BankingProductId); optional/ provided for formula association;
- **formulaInputId** - id of any entity used as master entity in data mapping input/ output at the formula setup; optional;
- **commissionInput** - json for formula input if necessary when no mapping was done for formula. The form of this json should look like the one in test formula.

The scope of the endpoint can be a commissionListId returning all interests in that list, or a commissionId returning all the details for a specific commission.

Output:

- object with details about all the commissions in the commission list from FTOS_BP_Commission and FTOS_BP_CommissionValue. If use Banking Formula is selected, then commission value or commission percent is equal to the formula result.

Call example:

```

1  var data = {
2      "commissionListId": "86309408-6bf6-4550-9bb8-
    6d49919175bd",
3      "bankingProductId": "25b9efdf-6ca5-48c5-8507-
    5543a22377b2",
4      "commissionInput": {
5          "Amount": 6000.00
6      }
7  };
8  ebs.callActionByName("FTOS_BP_GetCommissionDetail",
    data,
9  function(s){ if(s.UIResult){console.log
    (s.UIResult.Data.commissionList)}});
10

```

```

11  /*
12  [
13      {
14          "id": "01c0ad2e-21bd-4290-aba5-5230a6c184e8",
15          "name": "TC1",
16          "commissionTypeId": "6e2653aa-73ee-452a-b6d6-
17          8c0a8cdb89cb",
18          "periodicityTypeId": "1cc04a28-88e0-46df-a089-
19          31d04bbde6df",
20          "currencyId": "fc9c53a8-31c6-41ff-a979-
21          9c7788d32fb0",
22          "entityStatusId": "facc388-151a-4c83-8953-
23          cbac7d6c442a",
24          "isForUnusage": false,
25          "valueIsPercent": false,
26          "includedInRepaymentSchedule": true,
27          "percentAppliedTo": "f87376c8-15fc-45cc-b8c2-
28          7786b03593aa",
29          "automaticLoadOnContract": false,
30          "mandatoryForApplicant": true,
31          "useFormula": true,
32          "formulaTypeId": "a0dd56a6-a0b9-446b-8e1d-
33          b2c052cafe0b",
34          "commissionValue": 5.3,
35          "commissionPercent": null,
36          "rateValidFrom": null,
37          "rateValidTo": null
38      }
39  ]
40  */
41
42  var data = {
43      "commissionId": "01c0ad2e-21bd-4290-aba5-
44      5230a6c184e8",
45      "bankingProductId": "25b9efdf-6ca5-48c5-8507-
46      5543a22377b2",
47      "commissionInput": {
48          "Amount": 15000.00
49      }
50  };
51  ebs.callActionByName("FTOS_BP_GetCommissionDetail",
52  data,
53  function(s){ if(s.UIResult){console.log
54  (s.UIResult.Data.commissionList)}});

```

```

46
47  /*
48  [
49      {
50          "id": "01c0ad2e-21bd-4290-aba5-5230a6c184e8",
51          "name": "TC1",
52          "commissionTypeId": "6e2653aa-73ee-452a-b6d6-
53      8c0a8cdb89cb",
54          "periodicityTypeId": "1cc04a28-88e0-46df-a089-
55      31d04bbde6df",
56          "currencyId": "fc9c53a8-31c6-41ff-a979-
57      9c7788d32fb0",
58          "entityStatusId": "facc388-151a-4c83-8953-
59      cbac7d6c442a",
60          "isForUnusage": false,
61          "valueIsPercent": false,
62          "includedInRepaymentSchedule": true,
63          "percentAppliedTo": "f87376c8-15fc-45cc-b8c2-
64      7786b03593aa",
65          "automaticLoadOnContract": false,
66          "mandatoryForApplicant": true,
67          "useFormula": true,
68          "formulaTypeId": "a0dd56a6-a0b9-446b-8e1d-
69      b2c052cafe0b",
70          "commissionValue": 5.1,
71          "commissionPercent": null,
72          "rateValidFrom": null,
73          "rateValidTo": null
74      }
75  ]
76  */

```

FTOS_BP_CallFormula

Call a formula from banking product.

Input:

- **formulaType** - from FTOS_BP_Formula (attribute: formulaTypeId);
- **bankingProductId** - from FTOS_BP_BankingProduct (attribute: FTOS_BP_BankingProductid);
- **id** - input ID.

Call example:

```

1 | ebs.callActionByNameAsync("FTOS_BP_CallFormula",
2 | {
3 |     "formulaType": FORMULA_TYPE_ID,
4 |     "bankingProductId": BANKING_PRODUCT_ID,
5 |     "id": RECORD_ID
6 | })
7 | .then(function (result) { console.log(JSON.stringify
   | (result))})

```

FTOS_BP_Simulate

Get a simulation from PaymentSchedule with different parameters.

Input:

Mandatory inputs:

- **Amount**
- **LoanPeriod**
- **BankingProductId**
- **ScheduleType.**

Optional inputs:

- **InterestType** - Fixed, Variable, Collection, BankingFormula
- **Optional** - list of selected optional product discounts (ex: [{"Name":"Insurance","ProductDiscountId":"35b36b84-24e0-409c-9799-7426d4273c9e"}])
- **InterestCommission** - list of filtered interest list and commission list (ex: [{"interestListId":"0e096545-f9f2-4a24-8cf9-12b39e8af039","interestListName":"ListaPL2","commissionListId":"a2e435ed-4998-4750-ab0d-e89cb81d2ecb","commissionListName":"AdminFee"}])

- **Insurance** - list of the selected or filtered insurances: (ex: [{"insuranceListId":"dbfc46f3-9f5c-4f89-ba15-383210c4cd48"}])
- **interestCommissionFilterList** - interest/ commission filter list
- **insuranceFilterList** - insurance filter list
- **discountFilterList** - discount filter List
- **givenInterestRate** - a given interest rate that overwrites Interest Rate from product for Fixed interest type
- **givenInterestMargin** - a given interest margin that overwrites Interest Margin from product for interest type Variable
- **jsonMultipleInterestRates** - the list of interests to use for repayment plan Calculation (ex: [{"InterestRate":8.000000, "FromInstNo":1, "ToInstNo":5}, {"InterestRate":10.00000, "FromInstNo":6, "ToInstNo":300}])
 - "InterestRate": 8.000000 interest percent defined as interest type = Collection on the banking product/Dimensions/InterestList/Interes
 - from-to installment numbers defined as interest type = Collection on the banking product/Dimensions/InterestList/Interest
- **ProductField**
 - used currently only for CreditCard product
 - you can use it as bellow, multiple numeric attributes defined at the banking product level
 - "FieldName": "CapitalPercent" - percentage field defined at the banking product level / Details section, representing a percentage to be applied as formula for the schedule detail principal column
 - "FieldValue": 6 - if provided, its value is considered for calculation. If not provided the value is read from the banking product configuration.
- **jsonInputFormula** - it is usually provided when interest type is BankingFormula or Collection and represents the formula input json

(just like test formula). It can contain inputs for interest/commission/insurance/discount

```

1  "jsonInputFormula": {
2      "interestInput": {
3          "Amount": 6000.00
4      }
5  }

```

Call example:

- The reduced version:

```

ebs.callActionByNameAsync("FTOS_BP_Simulate",
{
  "Amount": 640000, "LoanPeriod": 240, "BankingProductId": "2c835f00-3afb-4ab6-ae7e-0ce0b8b4394b", "ScheduleType": "Loan Equal Installments"
})
.then(function (result) { console.table(result)})

```

- The full version:

```

1  ebs.callActionByNameAsync("FTOS_BP_Simulate", {
2      "bankingProductId": "3783c622-c15a-476a-8834-
d0850d5e8ca2",
3      "amount": 712000,
4      "downPayment": 356000,
5      "loanPeriod": 240,
6      "interestType": "f37646db-739c-477c-91df-
f294737b59bd",
7      "recordId": "bcd1358c-ae7-4e13-bc91-c3f6e56885f3",
8      "scheduleType": "Loan Equal Installments",
9      "optional": [
10         {
11             "Name": "Income Receiving",
12             "ProductDiscountId": "8c1cf49e-9aff-4353-8341-
9daed8e9fa88"
13         }
14     ],
15     "discount": [
16         {
17             "Name": "Interest Discount",
18             "ProductDiscountId": "de770415-9bfe-4a7f-8425-
02c0ebd1a5e7"
19         }
20     ],

```

```

21     "jsonFilterCommission": [
22     {
23         "name": "FinancedAmount",
24         "value": 356000
25     }
26 ],
27     "jsonInsuranceFilter": [
28     {
29         "name": "FinancedAmount",
30         "value": 356000
31     }
32 ],
33     "jsonDiscountFilter": [
34     {
35         "name": "FinancedAmount",
36         "value": 356000
37     }
38 ]
39 })
40 .then(function (result) {
41     console.log(result.UIResult.Data.Records[0]);
42 });

```

- Another example for Interest Type = Banking Formula:

```

1  ebs.callActionByNameAsync("FTOS_BP_Simulate", {
2      "bankingProductId": "3783c622-c15a-476a-8834-
d0850d5e8ca2",
3      "amount": 712000,
4      "downPayment": 356000,
5      "loanPeriod": 240,
6      "interestType": "f37646db-739c-477c-91df-
f294737b59bd",
7      "scheduleType": "Loan Equal Installments",
8      "optional": [{
9          "Name": "Income Receiving",
10         "ProductDiscountId": "8c1cf49e-9aff-4353-8341-
9daed8e9fa88",
11     }],
12     "jsonFilterCommission": [],
13     "jsonInsuranceFilter": [],
14     "jsonDiscountFilter": [],
15     "jsonInputFormula": {
16         "interestInput": {

```

```

17         "Amount": 6000.00
18     }
19 }
20 })
21 .then(function (result) {
22     console.table(result.UIResult.Data.Records[0]);
23 });

```

VM1073:22

(index)	Value
InterestPercent	'7.00%'
IRR	'7.23%'
FirstInstallment	2760.06
FirstInsurance	0
TotalInsurance	0
FirstFee	0
TotalFee	0
Total	662416.57
ScheduleJson	'{"paymentSchedule":[{"InstallmentNo":1,...
InterestId	'c6f87d91-c625-4acb-9ec0-31f5864ca609'
InterestListId	'0e096545-f9f2-4a24-8cf9-12b39e8af039'
cntInterestId	2
InterestCommissionItemId	'edbe876f-06e6-499d-b9a5-33939962a067'
cntInterestCommissionItemId	2
CommissionListId	'a2e435ed-4998-4750-ab0d-e89cb81d2ecb'
OutputInterestJson	'{"BaseInterestPercent":8.0000, "Interes...
OutputCommissionJson	null
OutputInsuranceJson	null

- Another example for Interest Type = Collection and child interest as formula:

```

1 ebs.callActionByNameAsync("FTOS_BP_Simulate", {
2     "bankingProductId": "3783c622-c15a-476a-8834-
  d0850d5e8ca2",
3     "amount": 700000.00,
4     "downPayment": 350000,
5     "loanPeriod": 240,
6     "interestType": "f37646db-739c-477c-91df-
  f294737b59bd",
7     "scheduleType": "Loan Equal Installments",
8     "optional": [{

```

```

9         "Name": "Income Receiving",
10        "ProductDiscountId": "8c1cf49e-9aff-4353-8341-
    9daed8e9fa880",
11    }],
12    "jsonFilterCommission": [],
13    "jsonInsuranceFilter": [],
14    "jsonDiscountFilter": [],
15    "jsonInputFormula": {
16        "interestInput": {
17            "Amount": 700000.00
18        }
19    }
20 })
21 .then(function (result) {
22     console.table(result.UIResult.Data.Records[0]);
23 });

```

VM1078:22

(index)	Value
InterestPercent	'7.00%'
IRR	'7.23%'
FirstInstallment	2713.55
FirstInsurance	0
TotalInsurance	0
FirstFee	0
TotalFee	0
Total	651250.27
ScheduleJson	'{"paymentSchedule":[{"InstallmentNo":1,"...
InterestId	'c6f87d91-c625-4acb-9ec0-31f5864ca609'
InterestListId	'0e096545-f9f2-4a24-8cf9-12b39e8af039'
cntInterestId	2
InterestCommissionItemId	'edbe876f-06e6-499d-b9a5-33939962a067'
cntInterestCommissionItemId	2
CommissionListId	'a2e435ed-4998-4750-ab0d-e89cb81d2ecb'
OutputInterestJson	'{"BaseInterestPercent":8.0000, "Interest...
OutputCommissionJson	null
OutputInsuranceJson	null

► Object

> |

FTOS_BP_GetInsuranceDetail

Returns details from an insurance.

Input:

- **insuranceListId** - from FTOS_BP_InsuranceList (attribute: FTOS_BP_InsuranceListId);
- **insuranceId** - from FTOS_BP_Insurance (attribute: FTOS_BP_InsuranceId);
- **bankingProductId** - from FTOS_BP_BankingProduct (attribute: FTOS_BP_BankingProductId) - optional/ provided for formula association;
- **formulaInputId** - id of any entity used as master entity in data mapping input/ output at the formula setup; optional;
- **insuranceInput** - json for formula input if necessary when no mapping was done for formula. The form of this json should look like the one in test formula.

The scope of the endpoint can be an interestListId returning all interests in that list or an interestId returning all the details for a specific interest.

Output:

Object with details about all the insurances in the insurance list from FTOS_BP_Insurance and FTOS_BP_InsuranceValue. If use Banking Formula is selected, then insurance value or insurance percent is equal to the formula result.

Call example:

```

1  var data = {
2    "insuranceListId": "bf2c45ba-3ea4-4447-9c96-
   45a708fc94c8",
3    "bankingProductId": "25b9efdf-6ca5-48c5-8507-
   5543a22377b2",
4    "insuranceInput": {
5      "Amount": 6000.00
6    }
7  };
8  ebs.callActionByName("FTOS_BP_GetInsuranceDetail", data,
9  function(s){ if(s.UIResult){console.log
   (s.UIResult.Data.insuranceList)}});
10

```

```

11  /*
12  [
13      {
14          "id": "f93416a9-c3f9-4824-9d72-05160c3666bc",
15          "name": "Test Insurance Formula1",
16          "code": "testI_F1",
17          "description": null,
18          "insurer": "ASIROM",
19          "isMandatoryForApplicant": true,
20          "isMandatoryForDebtor": false,
21          "valueIsPercent": false,
22          "periodicityTypeId": "1cc04a28-88e0-46df-a089-
31d04bbde6df",
23          "currencyId": "fc9c53a8-31c6-41ff-a979-
9c7788d32fb0",
24          "useOnPaymentSchedule": true,
25          "scheduleElementClassId": "d74c21fe-bb12-413f-
83d7-26ab40f34226",
26          "operationItemId": null,
27          "useFormula": true,
28          "formulaTypeId": "a0dd56a6-a0b9-446b-8e1d-
b2c052cafe0b",
29          "insuranceValue": 5.3,
30          "insurancePercent": null,
31          "interestDiscount": null,
32          "rateValidFrom": null,
33          "rateValidTo": null
34      },
35      {
36          "id": "24284701-7d60-4a80-8589-5ab867f9db81",
37          "name": "TestInsurance_Values2_Percentage",
38          "code": "testI_V2P",
39          "description": null,
40          "insurer": "Generali",
41          "isMandatoryForApplicant": true,
42          "isMandatoryForDebtor": false,
43          "valueIsPercent": false,
44          "periodicityTypeId": "1cc04a28-88e0-46df-a089-
31d04bbde6df",
45          "currencyId": "fc9c53a8-31c6-41ff-a979-
9c7788d32fb0",
46          "useOnPaymentSchedule": true,
47          "scheduleElementClassId": "d74c21fe-bb12-413f-
83d7-26ab40f34226",
48          "operationItemId": null,

```

```

49         "useFormula": false,
50         "formulaTypeId": null,
51         "insuranceValue": 146,
52         "insurancePercent": null,
53         "interestDiscount": null,
54         "rateValidFrom": "2021-03-07T22:00:00Z",
55         "rateValidTo": "2021-12-30T22:00:00Z"
56     }
57 ]
58 */
59
60 var data = {
61     "insuranceId": "f93416a9-c3f9-4824-9d72-
62     05160c3666bc",
63     "bankingProductId": "25b9efdf-6ca5-48c5-8507-
64     5543a22377b2",
65     "insuranceInput": {
66         "Amount": 6000.00
67     }
68 };
69 ebs.callActionByName("FTOS_BP_GetInsuranceDetail", data,
70 function(s){ if(s.UIResult){console.log
71 (s.UIResult.Data.insuranceList);}});
72
73 /*
74 [
75     {
76         "id": "f93416a9-c3f9-4824-9d72-05160c3666bc",
77         "name": "Test Insurance Formula1",
78         "code": "testI_F1",
79         "description": null,
80         "insurer": "ASIROM",
81         "isMandatoryForApplicant": true,
82         "isMandatoryForDebtor": false,
83         "valueIsPercent": false,
84         "periodicityTypeId": "1cc04a28-88e0-46df-a089-
85         31d04bbde6df",
86         "currencyId": "fc9c53a8-31c6-41ff-a979-
87         9c7788d32fb0",
88         "useOnPaymentSchedule": true,
89         "scheduleElementClassId": "d74c21fe-bb12-413f-
90         83d7-26ab40f34226",
91         "operationItemId": null,
92         "useFormula": true,

```

```

87     "formulaTypeId": "a0dd56a6-a0b9-446b-8e1d-
    b2c052cafe0b",
88     "insuranceValue": 5.3,
89     "insurancePercent": null,
90     "interestDiscount": null,
91     "rateValidFrom": null,
92     "rateValidTo": null
93   }
94 ]
95 */

```

FTOS_BP_CalculatePMT

Returns the value for the calculated PMT, or payment terms for a loan or investment.

Input:

Mandatory input parameters:

- **InstallmentsNo** - The number of installments
- **PeriodicityType** - The type of periodicity for PMT calculation. The possible values are the names of the records from the [FTOS_CB_PeriodicityType](#) entity.
- **InterestCalculationMethod** - The method to be used for interest calculation. The possible values are the names of the records from the [FTOS_BP_InterestCalculationType](#) option set.

Optional input parameters:

- **FinancedAmount** - The loan's financed amount
- **InterestPercent** - The annual interest percentage
- **GracePeriodPrincipal** - If the value is 1, then the installment is skipped at the beginning. If the parameter is not present, its value is considered 0.
- **FutureValue** - The balloon value. If the parameter is not present, its value is considered 0.

- **InterestType** - The type of calculation for the interest, with 0 for InArrears and 1 for InAdvance.

Output:

- **PMTValue** - the calculated value of the PMT
- **PrincipalValue** - the principal value.

Call example:

```
1  ebs.callActionByNameAsync('FTOS_BP_CalculatePMT', {
2    "jsonParam": {
3      "FinancedAmount": 10000,
4      "InterestPercent": 5,
5      "InstallmentsNo": 12,
6      "GracePeriodPrincipal": 1,
7      "PeriodicityType": "Monthly",
8      "FutureValue": 1000,
9      "InterestCalculationMethod": "30/360",
10     "InterestType": 0
11   }
12 }).then(function (o) {
13   console.table(o.UIResult.Data)
14 });
```

```

> ebs.callActionByNameAsync('FTOS_CB_CalculatePMT', {
  "jsonParam": {
    "FinancedAmount": 10000,
    /* Loan Financed Amount*/
    "InterestPercent": 5,
    /* Annual interest percentage*/
    "InstallmentsNo": 12,
    /* Mandatory, Number of installments */
    "GracePeriodPrincipal": 1,
    /* Installment skipped at the
begining, if not present it is considered 0 */
    "PeriodicityType": "Monthly",
    /* Mandatory, Posible Values: 30Days, 4
Weeks, Annual, Bimonthly, Monthly, Once,
Semestrial, Trimestrial, Weekly*/
    "FutureValue": 1000,
    /* advance amount - if not present it
is considered to be 0 */
    "InterestCalculationMethod": "30/360",
    /* Mandatory, Posible Values: 30Days,
30/365, 30/360, 52 weeks, Actual/365(366),
30/Actual, 52 weeks/2 */
  }
}).then(function (o) {
  console.table(o.UIResult.Data)
});
< ▶ Promise {<pending>}

```

VM1214:19

(index)	PMTValue	PrincipalValue
0	842.95	1000

▶ Array(1)

>

FTOS_BP_CalculateRepaymentSchedule

Returns an array of json records representing the installments of a repayment schedule, that must be stored and presented as in the picture bellow, customized for every project:

CONTRACT REPAYMENT SCHEDULE DETAILS

	No.	Due Date	Remaining	Interest	Principal	ResidualValue	Total
1	1	15-08-2020	10,000.00	50.00	746.42		796.42
2	2	15-09-2020	9,253.58	46.27	750.15		796.42
3	3	15-10-2020	8,503.43	42.52	753.90		796.42
4	4	15-11-2020	7,749.53	38.75	757.67		796.42
5	5	15-12-2020	6,991.86	34.96	761.46		796.42
6	6	15-01-2021	6,230.40	31.15	765.27		796.42
7	7	15-02-2021	5,465.13	27.33	769.09		796.42
8	8	15-03-2021	4,696.04	23.48	772.94		796.42

Input:

Mandatory input parameters:

- **ScheduleType** - the name of the Payment Schedule found in the [FTOS_BP_PaymentScheduleType](#) entity
- **InterestPercent** - the interest rate for the calculation, defined at the banking product level. The interest rate must be annual, so if you are using a monthly interest rate, you must transform it into an annual rate, multiplying it with 12.
- **Amount** - the financed amount, usually also containing the residual value if present, but not the advance value
- **InstallmentsNo** - the number of installments
- **PeriodicityType** - the periodicity of the schedule. The possible values are the names of the records from the [FTOS_CB_PeriodicityType](#) entity.
- **InstallmentDay** - the day of month for each installment

Optional input parameters:

- **AdvanceAmount** - the advance value, where
 $\text{AdvanceAmount} + \text{Amount} = \text{CreditValue}$
- **GracePeriodInterest** - the number of installments having grace period applied on the Interest column
- **GracePeriodPrincipal** - the number of installments having grace period applied on the Principal column
- **LastDueDate** - the
date of the last installment unmodified for recalculation
- **BlockInstallmentNo** -
the installment number that is blocked for recalculation
- **BlockAmount** - the value of the capital that is blocked for recalculation
- **ActivationDate** - the activation date of the contract. This is considered at the adjustment of the first installment for the columns that have Effective Rate as calculation method.
- **FirstDueDate** - the due date of the first installment
- **BlockInterestAmount** -
the value of the interest for the grace period if recalculation includes the grace period
- **HolidayShift** - the system takes into account not working days/national holidays, according to the sent value. If true and Sunday or Saturday are defined as nonworking days, then the DueDate excepts these dates.
- **CalculateDAE** - specifies whether to show the effective annual interest rate: for 0 or null, the DAE is not displayed; for 1, only the DAE percent is displayed, and for 2, the original schedule containing a column with DAE percent is displayed.
- **installmentValue** -
if there is a locked value for installments, this value should be provided here (equal installments)

- **principalValue** -
if there is a locked value for principal, this value should be provided here (equal principal)
- **InstallmentMethod** - the method for calculating the installment (Actual Month or Next Month)
- **MaturityDate** - the date for the end of the contract
- **InterestCapitalization** - specifies if the interest is capitalized for deposit calculation
- **UpFrontValue** -
the amount for upfront commissions, taxes, insurances paid once at the beginning of the contract
- **ResidualValue** - the residual value amount for insurance business
- **ResidualInInstallment** - the method of display for the residual value: for 0, it is displayed in a new schedule line, for 1, it is displayed in the last schedule line
- **Commission** - an array [] of commissions with periodicity different than Once.

[

- **SourceValue** -
the value of the commission when the commission is defined as value. Mandatory if the line is present.
- **SourcePercent** -
the percent of the commission when the commission is defined as a percentage. Mandatory if the line is present.
- **FeePeriodicityType** - the periodicity of the commission. Mandatory if the line is present.
- **GracePeriodFee** - it can have its own grace period for a number of installments
- **BlockFeeAmount** - the blocked amount in case of recalculation

- **FeeDate** - the date of the fee being applied to the contract. Mandatory if the line is present.
- **FeeId** - the fee from the FTOS_BP_Commission entity selected from the banking product level. Mandatory if the line is present.
- **IsUpfront** - for commissions that are included into the payment schedule and the first commission value is paid at the activation date. Possible values: 0,1. The parameter is optional and if it is not included into the JSON request, the value comes from payment schedule detail column setting.

]

- **Insurance** - an array [] of insurances with periodicity different than Once.

[

- **SourceValue** - the value of the insurance when the insurance is defined as value. Mandatory if the line is present, and mutually exclusive if the SourcePercent is present.
- **SourcePercent** - the percent of the insurance when the insurance is defined as a percentage. Mandatory if the line is present, and mutually exclusive if the SourceValue is present.
- **InsurancePeriodicityType** - the periodicity of the insurance. Mandatory if the line is present.
- **GracePeriodInsurance** - it can have its own grace period for a number of installments
- **BlockInsuranceAmount** - the blocked amount is case of recalculation
- **InsuranceDate** - the date of the insurance applied to the contract. Mandatory if the line is present.
- **InsuranceId** - the insurance from the FTOS_BP_Insurance entity selected from the banking product. Optional if InsuranceClassId is present.

- **InsuranceClassId** - the insurance class from the FTOS_BP_ScheduleElementClass entity selected on the FTOS_BP_Insurance entity when defining the insurance. Optional if InsuranceId is present.
- **IsUpfront** - for insurances that are included into the payment schedule and the first commission value is paid at the activation date. Possible values: 0,1. The parameter is optional and if it is not included into the JSON request, the value comes from payment schedule detail column setting.

]

- **MultipleInterestRates** - an array [] of interest rates

[

- **InterestRate** - the interest percent defined as interest type = Collection on the banking product **Dimensions > Interest List > Interest** level
- **FromInstNo** - the From installment number defined as interest type = Collection on the banking product **Dimensions > Interest List > Interest** level
- **ToInstNo** - the To installment number defined as interest type = Collection on the banking product **Dimensions > Interest List > Interest** level

]

- **CapitalPercent** - the percentage field defined at the banking product level (Credit Card) in the **Details** tab, representing a percentage to be applied as a formula to the schedule detail principal column.

Input variables example:

```

1  {
2    "ScheduleType":
3    "Loan Equal Principal Actual with ResidualValue",
4    "InterestPercent": 6,
5    "Amount": 10000,
   "InstallmentsNo": 13,

```

```

6      "AdvanceAmount": 400,
7      "GracePeriodInterest": null,
8      "GracePeriodPrincipal": 0,
9      "PeriodicityType": "Monthly",
10     "LastDueDate": "2020-8-12",
11     "BlockInstallmentNo": 0,
12     "BlockAmount": 0,
13     "ActivationDate": "2020-8-12",
14     "FirstDueDate": "2020-8-12",
15     "BlockInterestAmount": 0,
16     "HolidayShift": true,
17     "HolidayCountry": "Country:Thailand",
18     "CalculateDAE": 2,
19     "installmentValue": 796.42,
20     "principalValue": null,
21     "InstallmentDay": 15,
22     "InstallmentMethod": "ActualMonth",
23     "MaturityDate": "2021-8-12",
24     "InterestCapitalization": 0,
25     "UpFrontValue": 400.00,
26     "ResidualValue": 200,
27     "ResidualInInstallment": 0,
28     "Commission": [
29         {
30             "SourceValue": 1,
31             "SourcePercent": 0.01,
32             "FeePeriodicityType": "Trimestrial",
33             "GracePeriodFee": 0,
34             "BlockFeeAmount": 0,
35             "FeeDate": "2020-8-12",
36             "FeeId": "c86d68e5-2b48-439f-9bc6-
38df317bff2a",
37             "IsUpfront": 0
38         }
39     ],
40     "Insurance": [
41         {
42             "SourceValue": 10,
43             "SourcePercent": null,
44             "InsurancePeriodicityType": "Trimestrial",
45             "GracePeriodInsurance": 0,
46             "BlockInsuranceAmount": 0,
47             "InsuranceDate": "2020-8-12",
48             "InsuranceId": "66128D6D-C2AA-4B5C-932B-
7502C2E18288",

```

```
49         "InsuranceClassId": "61D36493-3DF9-44F0-
B372-BAC569346E80",
50         "IsUpfront": 0
51     },
52     },
53 ],
54     "MultipleInterestRates": [{
55         "InterestRate": 8.000000,
56         "FromInstNo": 1,
57         "ToInstNo": 3
58     }],
59     "CapitalPercent": 6
60 }
```

Output:

An array of json records representing the installments of a repayment schedule.

Case Studies

Loan Equal Installment - Minimal Call

←

PAYMENT SCHEDULE TYPE

Tooltips On

✓

🔍

⌵

Name

Loan Equal Installments

Payment schedule code

CLEQS

Product Type

Term Loan

Schedule Interest Calculation Type

30/360

Is With Equal Installments

☒

Adjust First Installment

☐

Installment Value Custom

☐

Use Fix Maturity Date

☒

PAYMENT SCHEDULE TYPE DETAILS

🔍

+ Insert

✕ Delete

📄 Export

🔄 Refresh

<input type="checkbox"/> Column Repayment Schedule	Calculation Method	Fee	Source	Display	Calculation
<input checked="" type="checkbox"/> RemainingValue	RemainingFormula			<input type="checkbox"/> (All)	<input checked="" type="checkbox"/> 13
<input checked="" type="checkbox"/> PMT	FixedValue			<input type="checkbox"/>	<input checked="" type="checkbox"/> 18
<input checked="" type="checkbox"/> Interest	Effective Rate			<input type="checkbox"/>	<input checked="" type="checkbox"/> 19
<input checked="" type="checkbox"/> Principal	ColumnFormula			<input type="checkbox"/>	<input checked="" type="checkbox"/> 24
<input checked="" type="checkbox"/> TotalInstallment	ColumnFormula			<input type="checkbox"/>	<input checked="" type="checkbox"/> 26

Call example:

```

1  var jp = {
2      "ScheduleType": "Loan Equal Installments",
3      "InterestPercent": 6,
4      "Amount": 10000,
5      "InstallmentsNo": 13,
6      "PeriodicityType": "Monthly",
7      "ActivationDate": "2020-8-12",
8      "InstallmentDay": 15
9  };
10 ebs.callActionByName("FTOS_BP_
    CalculateRepaymentSchedule", {jsonParam:jp},
11 function(s){ if(s.UIResult){console.log
    (s.UIResult.Data);}}});

```

Returned data:

```

},
{
  "InstallmentNo": 12,
  "DueDate": "2021-07-15T00:00:00",
  "NoDays": 30,
  "InstallmentTypeId": "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d",
  "remainingValue": 1581.02,
  "pMT": 796.42,
  "interest": 7.91,
  "principal": 788.51,
  "totalInstallment": 796.42,
  "ScheduleTypeId": "af636c50-9c0b-4e74-8a7a-a8cc91c258a5",
  "isEarlyRepayment": "false"
},
{
  "InstallmentNo": 13,
  "DueDate": "2021-08-15T00:00:00",
  "NoDays": 30,
  "InstallmentTypeId": "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d",
  "remainingValue": 792.51,
  "pMT": 796.42,
  "interest": 3.96,
  "principal": 747.51,
  "totalInstallment": 751.47,
  "ScheduleTypeId": "af636c50-9c0b-4e74-8a7a-a8cc91c258a5",
  "isEarlyRepayment": "false"
}
],
"ReturnValue": 0
}
=== end message ===

▼ (13) [{"-"}, {"-"}, {"-"}, {"-"}, {"-"}, {"-"}, {"-"}, {"-"}, {"-"}, {"-"}, {"-"}, {"-"}, {"-"}]
▶ 0: {InstallmentNo: 1, DueDate: "2020-08-15T00:00:00", NoDays: 30, InstallmentTypeId: "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d", remainingValue: 10000, -}
▶ 1: {InstallmentNo: 2, DueDate: "2020-09-15T00:00:00", NoDays: 30, InstallmentTypeId: "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d", remainingValue: 9253.58, -}
▶ 2: {InstallmentNo: 3, DueDate: "2020-10-15T00:00:00", NoDays: 30, InstallmentTypeId: "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d", remainingValue: 8503.43, -}
▶ 3: {InstallmentNo: 4, DueDate: "2020-11-15T00:00:00", NoDays: 30, InstallmentTypeId: "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d", remainingValue: 7749.53, -}
▶ 4: {InstallmentNo: 5, DueDate: "2020-12-15T00:00:00", NoDays: 30, InstallmentTypeId: "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d", remainingValue: 6991.86, -}
▶ 5: {InstallmentNo: 6, DueDate: "2021-01-15T00:00:00", NoDays: 30, InstallmentTypeId: "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d", remainingValue: 6230.4, -}
▶ 6: {InstallmentNo: 7, DueDate: "2021-02-15T00:00:00", NoDays: 30, InstallmentTypeId: "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d", remainingValue: 5465.13, -}
▶ 7: {InstallmentNo: 8, DueDate: "2021-03-15T00:00:00", NoDays: 30, InstallmentTypeId: "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d", remainingValue: 4696.04, -}
▶ 8: {InstallmentNo: 9, DueDate: "2021-04-15T00:00:00", NoDays: 30, InstallmentTypeId: "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d", remainingValue: 3923.1, -}
▶ 9: {InstallmentNo: 10, DueDate: "2021-05-15T00:00:00", NoDays: 30, InstallmentTypeId: "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d", remainingValue: 3146.3, -}
▶ 10: {InstallmentNo: 11, DueDate: "2021-06-15T00:00:00", NoDays: 30, InstallmentTypeId: "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d", remainingValue: 2365.61, -}
▶ 11: {InstallmentNo: 12, DueDate: "2021-07-15T00:00:00", NoDays: 30, InstallmentTypeId: "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d", remainingValue: 1581.02, -}
▶ 12: {InstallmentNo: 13, DueDate: "2021-08-15T00:00:00", NoDays: 30, InstallmentTypeId: "8bcd977d-5b3c-46a9-8e3e-c343ed2a956d", remainingValue: 792.51, -}

```

Loan Equal Principal Actual with Fees and Insurances

PAYMENT SCHEDULE TYPE

Loan Equal Principal Actual

CLEQPA

Product Type

[none]

Schedule Interest Calculation Type

Actual/365(366)

Is With Equal Installments

Adjust First Installment

Installment Value Custom

Use Fix Maturity Date

PAYMENT SCHEDULE TYPE DETAILS

+ Insert

✕ Delete

📄 Export

🔄 Refresh

<input type="checkbox"/>	Column Repayment Schedule	Calculation Method	Fee	Source	Display	Calculation
<input type="checkbox"/>	Q	Q	Q	Q	(All)	Q
	RemainingValue	RemainingFormula			<input checked="" type="checkbox"/>	1
	Interest	Effective Rate			<input checked="" type="checkbox"/>	2
	Principal	Liniar			<input checked="" type="checkbox"/>	3
	LifeInsurance	Effective Rate		SourcePercent	<input checked="" type="checkbox"/>	4
	HomeInsurance	Liniar		SourceValue	<input checked="" type="checkbox"/>	5
	ManagementFee	Effective Rate	Annual Admin Fee	SourcePercent	<input checked="" type="checkbox"/>	6
	TotalInstallment	ColumnFormula			<input checked="" type="checkbox"/>	7

The actual Annual Admin Fee must be defined within the FTOS_BP_Commission entity, and also the Insurances within the FTOS_BP_Insurance entity, Make sure you have at least one insurance with class Life Insurance, Monthly, defined as percentage, and one with class HomeInsurance, Monthly, defined as value. These Commissions and Insurances are called by Id within the request of the FTOS_BP_CalculateRepaymentSchedule endpoint.

Call example:

```

1  var jp = {
2    "ScheduleType": "Loan Equal Principal Actual",
3    "InterestPercent": 6,
4    "Amount": 10000,
5    "InstallmentsNo": 13,
6    "PeriodicityType": "Monthly",
7    "ActivationDate": "2020-8-12",
8    "InstallmentDay": 15,
9    "InstallmentMethod": "ActualMonth",
10   "Commission": [
11     {

```

```

12         "SourceValue": null,
13         "SourcePercent": 2,
14         "FeePeriodicityType": "Monthly",
15         "GracePeriodFee": 0,
16         "BlockFeeAmount": 0,
17         "FeeDate": "2020-8-12",
18         "FeeId": "6ab39765-f535-4560-be0b-
24c92755946c"
19     }
20 ],
21     "Insurance": [
22     {
23         "SourceValue": 5,
24         "SourcePercent": null,
25         "InsurancePeriodicityType": "Monthly",
26         "GracePeriodInsurance": 0,
27         "BlockInsuranceAmount": 0,
28         "InsuranceDate": "2020-8-12",
29         "InsuranceId": "a2f2230e-ec59-44ad-bf73-
39556b2ed15d" ,
30         "InsuranceClassId": null
31     },
32     {
33         "SourceValue": null,
34         "SourcePercent": 1.5,
35         "InsurancePeriodicityType": "Monthly",
36         "GracePeriodInsurance": 0,
37         "BlockInsuranceAmount": 0,
38         "InsuranceDate": "2020-8-12",
39         "InsuranceId": "1c67cf62-032d-49d1-bfa1-
e36299ace050" ,
40         "InsuranceClassId": null
41     }
42 ]
43 };
44 ebs.callActionByName("FTOS_BP_
CalculateRepaymentSchedule", {jsonParam:jp},
45 function(s){ if(s.UIResult){console.log
(s.UIResult.Data);}}});

```

Part of the returned data:

```

    "DueDate": "2021-08-15T00:00:00",
    "NoDays": 31,
    "InstallmentTypeId": "de9ebf4e-d541-4742-8979-55182a4ff3ef",
    "remainingValue": 769.24,
    "interest": 3.91,
    "principal": 769.24,
    "lifeInsurance": 0.98,
    "homeInsurance": 0.38,
    "managementFee": 1.30,
    "totalInstallment": 775.81,
    "ScheduleTypeId": "627e27ba-7d07-4e0c-b043-770b86a05cde",
    "isEarlyRepayment": "false"
  }
},
"ReturnValue": 0
}
=== end message ===


```

```

▼ (13) [{...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}] ⓘ
  ▼ 0:
    DueDate: "2020-08-15T00:00:00Z"
    InstallmentNo: 1
    InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef"
    NoDays: 3
    ScheduleTypeId: "627e27ba-7d07-4e0c-b043-770b86a05cde"
    homeInsurance: 0.38
    interest: 4.92
    isEarlyRepayment: "false"
    lifeInsurance: 1.23
    managementFee: 1.64
    principal: 769.23
    remainingValue: 10000
    totalInstallment: 777.4
    ▶ __proto__: Object
  ▼ 1:
    DueDate: "2020-09-15T00:00:00Z"
    InstallmentNo: 2
    InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef"
    NoDays: 31
    ScheduleTypeId: "627e27ba-7d07-4e0c-b043-770b86a05cde"
    homeInsurance: 0.38
    interest: 46.91
    isEarlyRepayment: "false"
    lifeInsurance: 11.73
    managementFee: 15.64
    principal: 769.23
    remainingValue: 9230.77

```

Loan Equal Installments with Residual Value

PAYMENT SCHEDULE TYPE Tooltips On 

Name: Payment schedule code:

Product Type: Schedule Interest Calculation Type:

Is With Equal Installments: ☒ Adjust First Installment: ☐ Installment Value Custom: ☐ Use Fix Maturity Date: ☒

PAYMENT SCHEDULE TYPE DETAILS

+ Insert ✕ Delete 📄 Export 🔄 Refresh

<input type="checkbox"/>	Column Repayment Schedule	Calculation Method	Fee	Source	Display	Calculation
<input type="checkbox"/>	Q	Q	Q	Q	(All) ▼	Q
	RemainingValue	RemainingFormula			<input checked="" type="checkbox"/>	2
	PMT	FixedValue			<input type="checkbox"/>	3
	Interest	Effective Rate			<input checked="" type="checkbox"/>	4
	Principal	ColumnFormula			<input checked="" type="checkbox"/>	5
	ResidualValue	FixedValue			<input checked="" type="checkbox"/>	9
	TotalInstallment	ColumnFormula			<input checked="" type="checkbox"/>	10

Call example:

```

1  var jp = {
2    "ScheduleType": "Loan Equal Installments with
3      ResidualValue",
4    "InterestPercent": 6,
5    "Amount": 10000,
6    "InstallmentsNo": 13,
7    "AdvanceAmount": 400,
8    "GracePeriodInterest": null,
9    "GracePeriodPrincipal": 0,
10   "PeriodicityType": "Monthly",
11   "LastDueDate": "2020-8-12",
12   "BlockInstallmentNo": 0,
13   "BlockAmount": 0,
14   "ActivationDate": "2020-8-12",
15   "FirstDueDate": "2020-8-12",
16   "BlockInterestAmount": 0,
17   "HolidayShift": true,
18   "HolidayCountry": "Country:Thailand",
19   "CalculateDAE": 2,
20   "installmentValue": 796.42,
21   "principalValue": null,
22   "InstallmentDay": 15,

```

```

22     "InstallmentMethod": "ActualMonth",
23     "MaturityDate": "2021-8-12",
24     "InterestCapitalization": 0,
25     "UpFrontValue": 0.00,
26     "ResidualValue": 200,
27     "ResidualInInstallment": 0,
28     "Commission": [],
29     "Insurance": []
30 };
31 ebs.callActionByName("FTOS_BP_
CalculateRepaymentSchedule", {jsonParam:jp},
32 function(s){ if(s.UIResult){console.log
(s.UIResult.Data);}}});

```

Part of the returned data:

```

    "interest": 4.88,
    "principal": 731.66,
    "residualValue": 0.00,
    "totalInstallment": 736.54,
    "dae": 11.2416973,
    "ScheduleTypeId": "b4c75678-6c12-494e-b257-6aba21f1ac46",
    "isEarlyRepayment": "false"
  },
  {
    "InstallmentNo": 14,
    "DueDate": "2021-08-12T00:00:00",
    "NoDays": 30,
    "InstallmentTypeId": "02fa5f7e-ad27-4672-9a23-a7849c77953b",
    "remainingValue": 0.00,
    "pmt": 0.00,
    "interest": 0.00,
    "principal": 0.00,
    "residualValue": 200.00,
    "totalInstallment": 200.00,
    "dae": 11.2416973,
    "ScheduleTypeId": "b4c75678-6c12-494e-b257-6aba21f1ac46",
    "isEarlyRepayment": "false"
  },
  "ReturnValue": 0
}
=== end message ===

(15) [(-), (-), (-), (-), (-), (-), (-), (-), (-), (-), (-), (-), (-), (-)]
> 0: {InstallmentNo: 0, DueDate: "2020-08-12T00:00:00", NoDays: 30, InstallmentTypeId: "0e1bac06-b521-44ac-8a29-803d4683182d", remainingValue: 0, ...}
> 1: {InstallmentNo: 1, DueDate: "2020-08-15T00:00:00", NoDays: 30, InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef", remainingValue: 10000, ...}
> 2: {InstallmentNo: 2, DueDate: "2020-09-15T00:00:00", NoDays: 30, InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef", remainingValue: 9268.51, ...}
> 3: {InstallmentNo: 3, DueDate: "2020-10-15T00:00:00", NoDays: 30, InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef", remainingValue: 8533.36, ...}
> 4: {InstallmentNo: 4, DueDate: "2020-11-15T00:00:00", NoDays: 30, InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef", remainingValue: 7794.54, ...}
> 5: {InstallmentNo: 5, DueDate: "2020-12-15T00:00:00", NoDays: 30, InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef", remainingValue: 7052.02, ...}
> 6: {InstallmentNo: 6, DueDate: "2021-01-15T00:00:00", NoDays: 30, InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef", remainingValue: 6305.79, ...}
> 7: {InstallmentNo: 7, DueDate: "2021-02-15T00:00:00", NoDays: 30, InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef", remainingValue: 5555.83, ...}
> 8: {InstallmentNo: 8, DueDate: "2021-03-15T00:00:00", NoDays: 30, InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef", remainingValue: 4802.12, ...}
> 9: {InstallmentNo: 9, DueDate: "2021-04-15T00:00:00", NoDays: 30, InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef", remainingValue: 4044.64, ...}
> 10: {InstallmentNo: 10, DueDate: "2021-05-15T00:00:00", NoDays: 30, InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef", remainingValue: 3283.37, ...}
> 11: {InstallmentNo: 11, DueDate: "2021-06-15T00:00:00", NoDays: 30, InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef", remainingValue: 2518.3, ...}
> 12: {InstallmentNo: 12, DueDate: "2021-07-15T00:00:00", NoDays: 30, InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef", remainingValue: 1749.4, ...}
> 13: {InstallmentNo: 13, DueDate: "2021-08-12T00:00:00", NoDays: 30, InstallmentTypeId: "de9ebf4e-d541-4742-8979-55182a4ff3ef", remainingValue: 976.66, ...}
> 14: {InstallmentNo: 14, DueDate: "2021-08-12T00:00:00", NoDays: 30, InstallmentTypeId: "02fa5f7e-ad27-4672-9a23-a7849c77953b", remainingValue: 0, ...}
length: 15
  __proto__: Array(0)

```

Data Visualization Example

No.	Due Date	Remaining	Interest	Principal	ResidualValue	Total	
1	15-08-2020	10,000.00	50.00	746.42		796.42	
2	15-09-2020	9,253.58	46.27	750.15		796.42	\$
3	15-10-2020	8,503.43	42.52	753.90		796.42	\$
4	15-11-2020	7,749.53	38.75	757.67		796.42	\$
5	15-12-2020	6,991.86	34.96	761.46		796.42	\$
6	15-01-2021	6,230.40	31.15	765.27		796.42	\$
7	15-02-2021	5,465.13	27.33	769.09		796.42	\$
8	15-03-2021	4,696.04	23.48	772.94		796.42	\$
9	15-04-2021	3,923.10	19.62	776.80		796.42	\$
10	15-05-2021	3,146.30	15.73	780.69		796.42	\$
11	15-06-2021	2,365.61	11.83	784.59		796.42	\$

Code:

```
<div class="row" data-template-id="row_11">
  <div class="col-xs-12">
    <div id="payment-details">&nbsp;</div>
  </div>
</div>
```

Call example:

```
1 var stId = ebs.getCurrentEntityData
  ().scheduleTypeId; // stId = Schedule Type Id
2 function unCapitalize(string) {
3   return string[0].toLowerCase() + string.slice(1);
4 }
5 var status = '';
6 function compareValues(key, order = 'asc') {
7   return function innerSort(a, b) {
8     if (!a.hasOwnProperty(key) || !b.hasOwnProperty
9       (key)) {
10       return 0;
11     }
12     const varA = (typeof a[key] === 'string')
13       ? a[key].toUpperCase() : a[key];
14     const varB = (typeof b[key] === 'string')
15       ? b[key].toUpperCase() : b[key];
```

```

16
17     let comparison = 0;
18     if (varA > varB) {
19         comparison = 1;
20     } else if (varA < varB) {
21         comparison = -1;
22     }
23     return (
24         (order === 'desc') ? (comparison * -1) :
comparison
25     );
26 };
27 }
28 showRepaymentSchedule ();
29 function showRepaymentSchedule () {
30     //here we have used other entities contract,
ContractRepaymentSchedule,
ContractRepaymentScheduleDetail (basically this last
entity contain the schedule details)
31     //so this endpoint bellow is arbitrary and usually
get replaced by something else
32     ebs.callActionByName('FTOS_CB_
PaymentScheduleFields', { scheduleId:
ebs.getCurrentEntityId(), scheduleTypeId: stId },
function (rsp) {
33         var columnsFields = [];
34         rsp.UIResult.Data.fields.map(function (o) {
35             columnsFields.push(o);
36         });
37         columnsFields.sort(compareValues('order'));
38         var values = rsp.UIResult.Data.values;
39
40         columnsFields.unshift({ name: 'DueDate',
display: 'Due Date', cap: false });
41         columnsFields.unshift({ name: 'InstallmentNo',
display: 'No.', cap: false, decimal: false });
42
43         paymentDetail(columnsFields, values,
hasButton);
44     }
45     function paymentDetail(fields, values, hasButton) {
46         var dataSource = [];
47
48         values.forEach(function (v) {
49             var obj = JSON.parse(v.json);

```

```

50     var dateToFormat = new Date
    (obj.DueDate.invariantDate);
51     obj.DueDate = (dateToFormat.getDate() < 10 ?
    '0' + dateToFormat.getDate() : dateToFormat.getDate())
    + '-' + ((dateToFormat.getMonth() + 1) < 10 ? '0' +
    (dateToFormat.getMonth() + 1) : (dateToFormat.getMonth
    () + 1)) + '-' + dateToFormat.getFullYear()
52     obj.InstallmentTypeId = v.sd_installmentTypeId_
    displayname;
53     obj.id = v.id;
54     obj.payed = v.payed;
55     obj.notification = v.notificationId;
56     dataSource.push(obj);
57     });
58
59     var columns = [];
60
61     fields.forEach(function (o) {
62         var object = {
63             dataField: typeof o.cap === 'undefined' ?
    unCapitalize(o.name) : o.name,
64             caption: o.display,
65             format: typeof o.decimal !== 'undefined' ?
    {} : { type: "fixedPoint", precision: 2 }
66         };
67         columns.push(object);
68     });
69
70     if (hasButton) {
71         columns.push({
72             type: "buttons",
73             width: 110,
74             buttons: [{
75                 hint: "Pay Installssment",
76                 icon: "money",
77                 visible: function (e) {
78                     return e.row.data.notification ===
    null;
79                 },
80                 onClick: function (e) {
81                     //custom code on pay installment
82                 });
83             }
84         }]
85     });

```

```

86     }
87     $("#payment-details").dxDataGrid({
88         rowAlternationEnabled: true,
89         showColumnHeaders: true,
90         alignment: "left",
91         repaintChangesOnly: true,
92         paging: {
93             pageSize: 10000
94         },
95         onCellPrepared: function (e) {
96             //console.log(e)
97             if (e.rowType === 'data' &&
e.row.data.payed === true) {
98                 //console.log(e.row.data.payed)
99                 e.cellElement[0].className += " payed";
100             }
101         },
102         columnAutoWidth: false,
103         columns: columns,
104         dataSource: {
105             store: dataSource,
106             reshapeOnPush: true
107         }
108     });
109 }

```

Credit Card Schedule

Name:
 Payment schedule code:

Product Type:
 Schedule Interest Calculation Type:

☐ Is With Equal Installments
 ☐ Adjust First Installment
 ☐ Installment Value Custom
 ☐ Use Fix Maturity Date

PAYMENT SCHEDULE TYPE DETAILS

<input type="checkbox"/>	Column Repayment Schedule	Calculation Method	Fee	Insurance class	Source	Display	Calculator
<input type="checkbox"/>	CapitalPercent	ProductLevelFixedValue				(All)	1
<input type="checkbox"/>	ManagementFee	FixedValue	Management Fee Fix 5		SourceValue	<input type="checkbox"/>	2
<input type="checkbox"/>	RemainingValue	RemainingFormula				<input checked="" type="checkbox"/>	3
<input type="checkbox"/>	Interest	Effective Rate				<input checked="" type="checkbox"/>	4
<input type="checkbox"/>	Principal	ColumnFormula				<input checked="" type="checkbox"/>	5
<input type="checkbox"/>	TotalInstallment	ColumnFormula				<input checked="" type="checkbox"/>	6

Call example:

```

1 var jp = {
2   "ScheduleType": "Credit Card Installments",
3   "InterestPercent": 32.000000,
4   "Amount": 3770.00,
5   "HolidayShift": true,
6   "InstallmentsNo": 60,
7   "PeriodicityType": "Monthly",
8   "LastDueDate": "2021-02-01",
9   "ActivationDate": "2021-02-01",
10  "InstallmentDay": 1,
11  "InstallmentMethod": "ActualMonth",
12  "MaturityDate": "2026-02-01",
13  "Commission": [
14    {
15      "SourceValue": 5.00,
16      "SourcePercent": null,
17      "FeePeriodicityType": "Monthly",
18      "FeeDate": "2021-02-01",
19      "FeeId": "365221CE-9F6D-4B4C-A8CE-2A2D62A38353",
20      "IsUpfront": null
21    },
22    {
23      "CalculateDAE": 2,
24      "CapitalPercent": 5.000000
25    }
26  ];
27  ebs.callActionByName("FTOS_BP_CalculateRepaymentSchedule", {jsonParam: jp},
28  function(s){ if(s.UIResult){console.log
29    (s.UIResult.Data);}}});

```

Part of the returned data:

[illegible]

FTOS_BP_GetBankingProductByCode

Returns the banking product information based on its product code. If more versions are available, only the approved one is taken into consideration.

Input:

Mandatory input parameters:

- **BankingProductCode** - string, from FTOS_BP_BankingProduct (attribute: BankingProductCode).

Optional input parameters:

- **displayBPDDetails** - boolean, specifies whether to show the details of the banking product, such as general data, calendars, associated products or payment schedule types, product guarantees or destination types. Possible values: true, false. The **Details** section of the output is only displayed for true value. To display only the desired information from all the details, the following flags can be set to true or false within the **Details** section:
 - **displayCountryCalendars** - boolean, specifies whether to show the country calendars of the banking product. Possible values: true, false, default value true. The **CountryCalendar** section of the output is only displayed for true value.
 - **displayPaymentScheduleTypes** - boolean, specifies whether to show the associated payment schedule types of the banking product. Possible values: true, false, default value true. The **AssociatedPaymentScheduleTypes** section of the output is only displayed for true value.
 - **displayProductGuarantees** - boolean, specifies whether to show the product guarantees of the banking product. Possible values: true, false, default value true. The **ProductGuarantees** section of the output is only displayed for true value.
 - **displayProductDestinationTypes** - boolean, specifies whether to show the product destination types of the banking product. Possible values: true, false, default value true. The

ProductDestinationTypes section of the output is only displayed for true value.

- **displayDisbursementMatrix** - boolean, specifies whether to show the disbursement matrix of the banking product. Possible values: true, false, default value true. The **DisbursementMatrix** section of the output is only displayed for true value.
- **displayAssociatedProducts** - boolean, specifies whether to show the associated products of the banking product. Possible values: true, false, default value true. The **AssociatedProducts** section of the output is only displayed for true value.
- **displayBPAvailability** - boolean, specifies whether to show the availability information of the banking product, such as currency, period, minimum and maximum amounts and advances, item filters, or covenants. Possible values: true, false. The **Availability** section of the output is only displayed for true value. To display only the desired information from all the details, the following flags can be set to true or false within the **Availability** section:
 - **displayAvailabilityItemFilters** - boolean, specifies whether to show the availability item filters of the banking product. Possible values: true, false, default value true. The **AvailabilityItemFilters** section of the output is only displayed for true value.
 - **displayProductCovenants** - boolean, specifies whether to show the product covenants of the banking product. Possible values: true, false, default value true. The **ProductCovenants** section of the output is only displayed for true value.
- **displayBPDimensions** - boolean, specifies whether to show the dimensions information of the banking product, such as interests and commissions, insurances, discounts or questions. Possible values: true, false. The **Dimensions** section of the output is only displayed for true value. Only the active values for interests and for commissions are returned within the response. Filters for Interests&Commissions, Insurance, and Discounts are not included in the response. To display only the desired information from all the

details, the following flags can be set to true or false within the **Dimensions** section:

- **displayInterestsAndCommissions** - boolean, specifies whether to show the interests and commissions of the banking product. Only the active values for interests and for commissions are returned within the response. Possible values: true, false, default value true. The **InterestsAndCommissions** section of the output is only displayed for true value.
- **displayInsurance** - boolean, specifies whether to show the insurances of the banking product. Possible values: true, false, default value true. The **Insurance** section of the output is only displayed for true value.
- **displayDiscounts** - boolean, specifies whether to show the discounts of the banking product. Possible values: true, false, default value true. The **Discounts** section of the output is only displayed for true value.
- **displayQuestions** - boolean, specifies whether to show the questions of the banking product. Possible values: true, false, default value true. The **Questions** section of the output is only displayed for true value.

Output:

Object with details about a specific banking product from the FTOS_BP_BankingProduct entity. The data enclosed in Banking Product is returned by default. The data within Details, Availability and Dimensions is returned only if their corresponding flags are set to true.

Call example:

```
1 var data = {
2   "BankingProductCode": "APICodeTst",
3   "displayBPDDetails": true,
4   "displayBPAvailability": true,
5   "displayBPDDimensions": true
6 };
7
8 ebs.callActionByName("FTOS_BP_GetBankingProductByCode",
  data, function(response) {
```

```

9      if (response.UIResult) {
10         console.log(response.UIResult.Data);
11     }
12 });

```

Returned data:

```

1  // API Response example below:
2  {
3      "BankingProduct": {
4          "BankingProductCode": "APICodeTst",
5          "Name": "APIName",
6          "StartDate": "Fri Oct 08 2021 00:00:00 GMT+03:00",
7          "EndDate": "Thu Mar 31 2022 00:00:00 GMT+03:00"
8      },
9      "Details": {
10         "GeneralData": {
11             "BankAccountType": "LoanTermAccount",
12             "IsRevolving": true,
13             "AutoDisbursement": false,
14             "MaxNoDisbursements": 12,
15             "ActivationTranchesOnDocumentSubmission": false,
16             "IsGuaranteed": true,
17             "AllowCollateralPartialRelease": true,
18             "AllowCoDebtor": false,
19             "AllowRefinancing": true,
20             "MaxNoOfCodebtors": 5,
21             "PeriodicityType": "Monthly",
22             "RepaymentAllocationMethod": "CostOrder",
23             "HolidayShiftForRepaymentInstallments": true,
24             "HolidayShiftMethod": "Forward",
25             "DeferDueDate": true,
26             "GraceType": "Interest",
27             "ProductGrace": "FiveDaysGrace",
28             "GraceDaysForRepayment": 123,
29             "PenaltyForGracePeriod": false
30         },
31         "CountryCalendars": [
32             {
33                 "CountryName": "Belgium"
34             },
35             {
36                 "CountryName": "Thailand"
37             }

```

```

38     ],
39     "AssociatedPaymentScheduleTypes": [
40     {
41         "PaymentScheduleTypeId": "99b65307-8e55-46d0-
8114-859cda40c21d",
42         "PaymentScheduleTypeName": "Credit Card
Installments",
43         "PaymentScheduleCode": "CC",
44         "ProductType": null,
45         "ScheduleInterestCalculationType": "30/360",
46         "IsWithEqualInstallments": false,
47         "InstallmentValueCustom": false,
48         "UseMaturityDate": false,
49         "MeasurementUnit": "Months",
50         "PaymentScheduleTypeDetails": [
51         {
52             "PaymentScheduleTypeDetailId": "78c80e1a-
36ec-4132-8aa5-2030709789cb",
53             "ColumnRepaymentSchedule":
"TotalInstallment",
54             "CalculationMethod": "ColumnFormula",
55             "Fee": null,
56             "InsuranceClass": null,
57             "Source": null,
58             "Display": true
59         },
60         {
61             "PaymentScheduleTypeDetailId": "30cd5e82-
a80e-4db1-afda-39164ed56ed8",
62             "ColumnRepaymentSchedule":
"CapitalPercent",
63             "CalculationMethod":
"ProductLevelFixedValue",
64             "Fee": null,
65             "InsuranceClass": null,
66             "Source": null,
67             "Display": false
68         },
69         {
70             "PaymentScheduleTypeDetailId": "8230780c-
7c93-441a-9993-4a178a3fa1b3",
71             "ColumnRepaymentSchedule": "MgtFee",
72             "CalculationMethod": "FixedValue",
73             "Fee": "Management Fee Fix 5",
74             "InsuranceClass": null,

```

```

75         "Source": "SourceValue",
76         "Display": true
77     },
78     {
79         "PaymentScheduleTypeDetailId": "e05b4a1d-
b365-42ce-9d5a-4d86753610a2",
80         "ColumnRepaymentSchedule":
"RemainingValue",
81         "CalculationMethod": "RemainingFormula",
82         "Fee": null,
83         "InsuranceClass": null,
84         "Source": null,
85         "Display": true
86     },
87     {
88         "PaymentScheduleTypeDetailId": "55c5c8ee-
9b41-47e9-8eee-9a56561245bc",
89         "ColumnRepaymentSchedule": "Principal",
90         "CalculationMethod": "ColumnFormula",
91         "Fee": null,
92         "InsuranceClass": null,
93         "Source": null,
94         "Display": true
95     },
96     {
97         "PaymentScheduleTypeDetailId": "76835b60-
9fee-4152-a393-aa40829413a7",
98         "ColumnRepaymentSchedule": "Dobanda",
99         "CalculationMethod": "EffectiveRate",
100        "Fee": null,
101        "InsuranceClass": null,
102        "Source": null,
103        "Display": true
104    }
105 ]
106 }
107 ],
108 "ProductGuarantees": [
109     {
110         "ProductGuaranteeName": "APICodeTst-CA",
111         "GuaranteeType": "Cash",
112         "MaxAcceptedCoveringPercent": 50
113     }
114 ],
115 "ProductDestinationTypes": [],

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116     "DisbursementMatrix": [
117     {
118         "Name": "DisbMatrixAPITest",
119         "TranchePercent": 100,
120         "InterestPercent": 13,
121         "StartMonthFromActivation": 8,
122         "UnusageCommissionPercent": 14
123     }
124 ],
125     "AssociatedProducts": [
126     {
127         "AssociatedProductName": "TLVlad",
128         "AssociatedProductCode": "TLVlad"
129     },
130     {
131         "AssociatedProductName": "TLVladAutoCommLoad",
132         "AssociatedProductCode": "TLVladAC"
133     }
134 ]
135 },
136     "Availability": {
137         "Currency": "RON",
138         "PeriodType": "Months",
139         "MaxPeriodForDisbursement": 1,
140         "MinimumPeriod": 2,
141         "MaximumPeriod": 3,
142         "MinimumEarlyRepaymentValue": 4,
143         "MinimumAmount": 500,
144         "MaximumAmount": 50000,
145         "UnusageStartPeriod": 5,
146         "MinimumAdvance": 10,
147         "MaximumAdvance": 90,
148         "AvailabilityItemFilters": [
149         {
150             "Filter": "Account",
151             "FilterScope": "All",
152             "FilterType": "LookUp",
153             "Description": "Account Filter API TEST"
154         }
155     ],
156     "ProductCovenants": [
157     {
158         "Name": "Lender can monitor borrower's current
159         ratio",
159         "Type": "Financial",

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160         "Value": 12345,
161         "ValidFrom": {
162             "invariantDate": "2021-10-08"
163         },
164         "ValidTo": {
165             "invariantDate": "2022-02-28"
166         },
167         "ReviewFrequencyMonths": 12
168     }
169 ]
170 },
171 "Dimensions": {
172     "InterestsAndCommissions": [
173         {
174             "InterestCommissionItemName": "TestAPIIntCom",
175             "CommissionListName": null,
176             "InterestListName": "Corporate Interest 10",
177             "Commissions": [],
178             "Interests": [
179                 {
180                     "Name": "Corporate Overdue Principal",
181                     "Code": "CoOvP",
182                     "AppliedToLoanItemIfOverdue": "Loan
Principal",
183                     "Description": null,
184                     "IsDefault": false,
185                     "UseBankingFormula": false,
186                     "Type": "Fixed",
187                     "IsPenalty": true,
188                     "IsGeneral": null,
189                     "IsForSightDeposit": false,
190                     "IsForOverdraft": null,
191                     "IsCreditLine": false,
192                     "IsDebitOrder": false,
193                     "Values": [
194                         {
195                             "Value": 12,
196                             "ValueStatus": "Active",
197                             "ValueValidFrom": {
198                                 "invariantDate": "2021-01-01"
199                             },
200                             "ValueValidTo": {
201                                 "invariantDate": "2031-12-31"
202                             }
203                         }

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204         ],
205         "CollectionInterests": []
206     },
207     {
208         "Name": "Corporate Overdue Interest",
209         "Code": "CoOvI",
210         "AppliedToLoanItemIfOverdue": "Loan
Interest",
211         "Description": null,
212         "IsDefault": false,
213         "UseBankingFormula": false,
214         "Type": "Fixed",
215         "IsPenalty": true,
216         "IsGeneral": null,
217         "IsForSightDeposit": false,
218         "IsForOverdraft": null,
219         "IsCreditLine": false,
220         "IsDebitOrder": false,
221         "Values": [
222             {
223                 "Value": 10,
224                 "ValueStatus": "Active",
225                 "ValueValidFrom": {
226                     "invariantDate": "2021-01-01"
227                 },
228                 "ValueValidTo": {
229                     "invariantDate": "2031-12-31"
230                 }
231             }
232         ],
233         "CollectionInterests": []
234     },
235     {
236         "Name": "Corporate Fix 10",
237         "Code": "FI10",
238         "AppliedToLoanItemIfOverdue": null,
239         "Description": null,
240         "IsDefault": false,
241         "UseBankingFormula": false,
242         "Type": "Fixed",
243         "IsPenalty": false,
244         "IsGeneral": null,
245         "IsForSightDeposit": false,
246         "IsForOverdraft": null,
247         "IsCreditLine": false,

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248         "IsDebitOrder": false,
249         "Values": [
250             {
251                 "Value": 10,
252                 "ValueStatus": "Active",
253                 "ValueValidFrom": {
254                     "invariantDate": "2020-01-01"
255                 },
256                 "ValueValidTo": {
257                     "invariantDate": "2050-12-31"
258                 }
259             }
260         ],
261         "CollectionInterests": []
262     },
263     {
264         "Name": "Corporate Floating BIBOR 3M",
265         "Code": "FB3M",
266         "AppliedToLoanItemIfOverdue": null,
267         "Description": null,
268         "IsDefault": false,
269         "UseBankingFormula": false,
270         "Type": "Variable",
271         "IsPenalty": false,
272         "IsGeneral": null,
273         "IsForSightDeposit": false,
274         "IsForOverdraft": null,
275         "IsCreditLine": false,
276         "IsDebitOrder": false,
277         "Values": [
278             {
279                 "Value": 2.5,
280                 "ValueStatus": "Active",
281                 "ValueValidFrom": {
282                     "invariantDate": "2021-01-01"
283                 },
284                 "ValueValidTo": {
285                     "invariantDate": "2050-01-31"
286                 }
287             }
288         ],
289         "CollectionInterests": [],
290         "BaseInterestName": "BIBOR 3 Month",
291         "BaseInterestValue": 4.5
292     },

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293         {
294             "Name": "Corporate Floating BIBOR 1M",
295             "Code": "FB1M",
296             "AppliedToLoanItemIfOverdue": null,
297             "Description": null,
298             "IsDefault": false,
299             "UseBankingFormula": false,
300             "Type": "Variable",
301             "IsPenalty": false,
302             "IsGeneral": null,
303             "IsForSightDeposit": false,
304             "IsForOverdraft": null,
305             "IsCreditLine": false,
306             "IsDebitOrder": false,
307             "Values": [
308                 {
309                     "Value": 2,
310                     "ValueStatus": "Active",
311                     "ValueValidFrom": {
312                         "invariantDate": "2020-01-01"
313                     },
314                     "ValueValidTo": {
315                         "invariantDate": "2022-01-01"
316                     }
317                 }
318             ],
319             "CollectionInterests": []
320         }
321     ],
322 },
323 ],
324 "Insurance": [
325     {
326         "Name": "InsuranceAPITest",
327         "Code": null,
328         "StartDate": {
329             "invariantDate": "2021-10-08"
330         },
331         "EndDate": {
332             "invariantDate": "2022-02-28"
333         },
334         "InsuranceListName": "RON",
335         "Insurances": [
336             {
337                 "InsuranceCode": "IFP",

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338         "InsuranceName":
339         "InsuranceFormulaPercentage",
340         "PeriodicityType": "Trimestrial",
341         "Currency": "USD",
342         "Insurer": "INSURERAPI",
343         "OperationItem": "Repayment Fee",
344         "IsMandatoryForApplicant": true,
345         "IsMandatoryForDebtor": false,
346         "IncludedIntoRepaymentScheduleInstallment":
true,
347         "Class": "Credit Insurance",
348         "UseBankingFormula": true,
349         "ValueIsPercentage": true,
350         "Description": "test",
351         "BankingFormulaType": "com&ins ByAmount"
352     },
353     {
354         "InsuranceCode": "LI",
355         "InsuranceName": "Life Insurance",
356         "PeriodicityType": "Monthly",
357         "Currency": "USD",
358         "Insurer": null,
359         "OperationItem": "Life Insurance",
360         "IsMandatoryForApplicant": true,
361         "IsMandatoryForDebtor": null,
362         "IncludedIntoRepaymentScheduleInstallment":
true,
363         "Class": "Life Insurance",
364         "UseBankingFormula": null,
365         "ValueIsPercentage": true,
366         "Description": "description",
367         "BankingFormulaType": null
368     }
369 ]
370 ],
371 "Discounts": [
372     {
373         "Name": "DiscountAPIFull",
374         "Discount": "ManagementFeeDiscount",
375         "DiscountValue": null,
376         "StartDate": {
377             "invariantDate": "2021-09-01"
378         },
379         "EndDate": {
380             "invariantDate": "2022-05-31"

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381     },
382     "AppliedToDimension": "Commission",
383     "CommissionType": "Management Fee",
384     "Commission": "ComFormulaPercentage",
385     "InterestType": null,
386     "InsuranceClass": null,
387     "Insurance": null,
388     "UseBankingFormula": true,
389     "BankingFormulaType": "formula type 1",
390     "IsOptionalDiscount": true,
391     "DestinationEntity": "Account",
392     "DestinationEntityAttribute": "NrOfChildren",
393     "IsPercentage": true
394 },
395 {
396     "Name": "LifeInsurance",
397     "Discount": "Discount Life Insurance",
398     "DiscountValue": 12,
399     "StartDate": {
400         "invariantDate": "2021-09-01"
401     },
402     "EndDate": {
403         "invariantDate": "2022-04-30"
404     },
405     "AppliedToDimension": "Insurance",
406     "CommissionType": null,
407     "Commission": null,
408     "InterestType": null,
409     "InsuranceClass": "Life Insurance",
410     "Insurance": "Life Insurance",
411     "UseBankingFormula": false,
412     "BankingFormulaType": null,
413     "IsOptionalDiscount": true,
414     "DestinationEntity": "AccountRelBusiness",
415     "DestinationEntityAttribute": "modifiedOn",
416     "IsPercentage": false
417 },
418 {
419     "Name": "interestdiscount",
420     "Discount": "Interest Discount",
421     "DiscountValue": 14,
422     "StartDate": {
423         "invariantDate": "2021-08-02"
424     },
425     "EndDate": {

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426         "invariantDate": "2022-04-30"
427     },
428     "AppliedToDimension": "Interest",
429     "CommissionType": null,
430     "Commission": null,
431     "InterestType": "Fixed",
432     "InsuranceClass": null,
433     "Insurance": null,
434     "UseBankingFormula": false,
435     "BankingFormulaType": null,
436     "IsOptionalDiscount": false,
437     "DestinationEntity": null,
438     "DestinationEntityAttribute": null,
439     "IsPercentage": false
440 },
441 {
442     "Name": "DiscountAPITest",
443     "Discount": "Commission discount",
444     "DiscountValue": 100,
445     "StartDate": {
446         "invariantDate": "2021-10-08"
447     },
448     "EndDate": {
449         "invariantDate": "2022-01-31"
450     },
451     "AppliedToDimension": "Commission",
452     "CommissionType": "Front-end Fee",
453     "Commission": null,
454     "InterestType": "Variable",
455     "InsuranceClass": null,
456     "Insurance": null,
457     "UseBankingFormula": false,
458     "BankingFormulaType": null,
459     "IsOptionalDiscount": false,
460     "DestinationEntity": null,
461     "DestinationEntityAttribute": null,
462     "IsPercentage": false
463     }
464 ],
465 "Questions": [
466     {
467         "Name": "Question2",
468         "QuestionType": null,
469         "IsForSolicitant": null,
470         "IsForCoborrower": null,

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471         "AnswerEntity": "AccountRelEmployer",
472         "AnswerField": "Details"
473     },
474     {
475         "Name": "Question1",
476         "QuestionType": "Test",
477         "IsForSolicitant": false,
478         "IsForCoborrower": false,
479         "AnswerEntity": "Account",
480         "AnswerField": "Phone"
481     }
482 ]
483 }
484 }
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