

fintech

OS

Banking Product Factory for Enterprise 3.0

User Guide

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Overview

The Banking Product Factory for Enterprise 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 for Enterprise 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 for Enterprise 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 for Enterprise 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.

Integration with Formula Engine

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

Applications

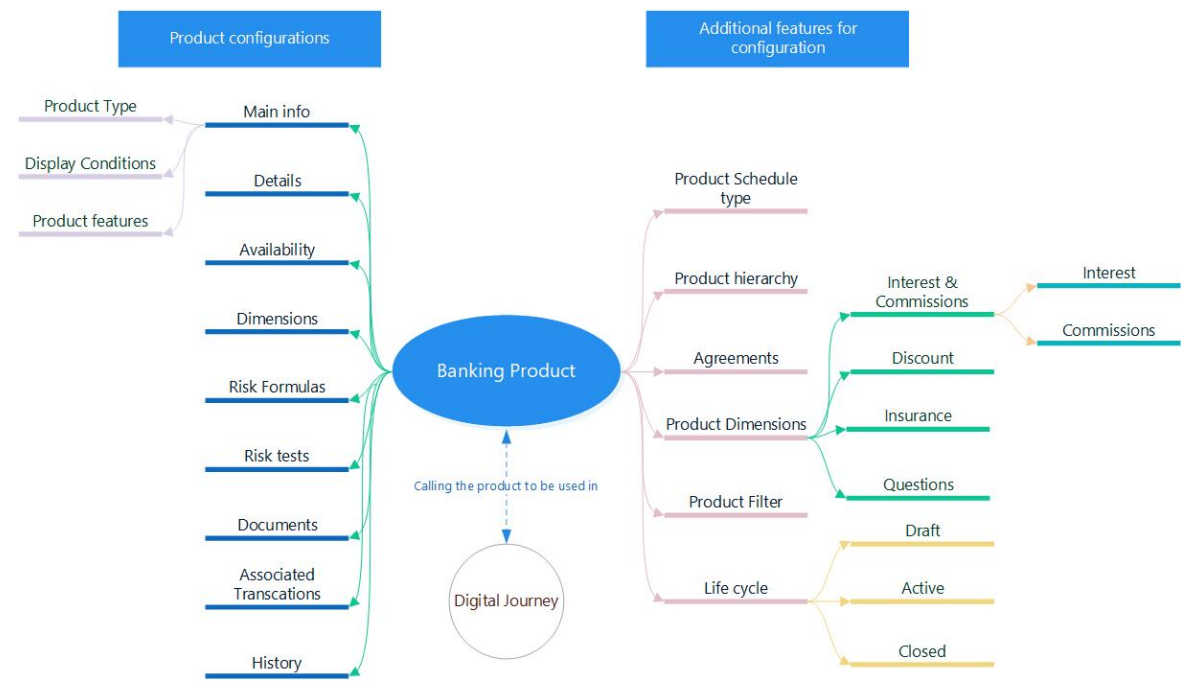
The Banking Product Factory for Enterprise can facilitate business processes, such as:

- 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.

BANKING PRODUCT FACTORY FOR ENTERPRISE USER GUIDE



Installing Banking Product Factory 3.0

HINT

This page contains the installation steps for Banking Product Factory for Enterprise v3.0.

If you need to install the Banking Product Factory for Enterprise **v3.0.1**, follow the instructions on [this page](#).

If you need to install the Banking Product Factory for Enterprise **v3.0.2**, follow the instructions on [this page](#).

Follow the steps described below to perform an automatic installation of the Banking Product Factory for Enterprise. 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 v3.0** 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 v3.0**, first you need to install the following:

- **Innovation Studio** minimum version **v21.2.1**
- **Standard SysPack** minimum version **v21.1.6002**.

IMPORTANT!

If you are installing **Banking Product Factory v3.0** 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 v3.0** 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.

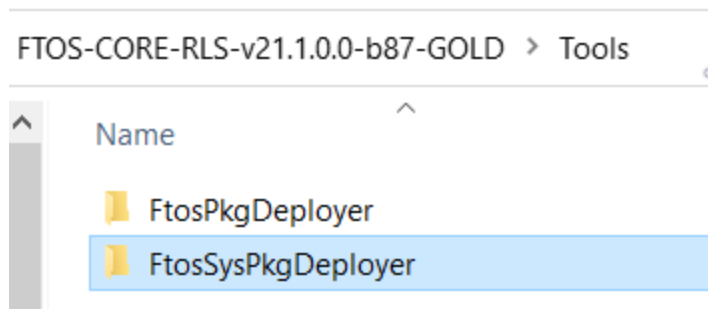
If you have already moved data using the **Configuration Data Deployment Package** menu, then you probably have already configured some unique constraints.

Before running the script, make sure you:

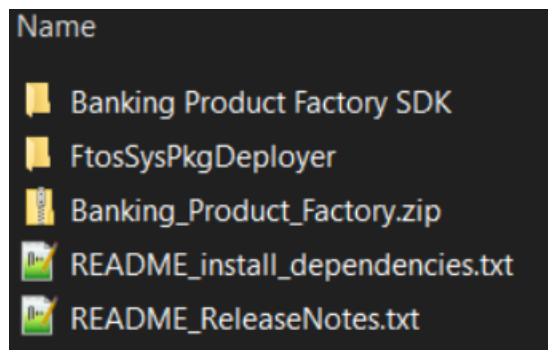
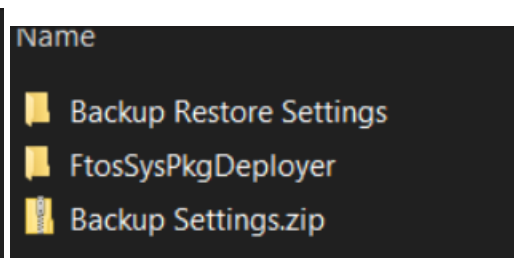
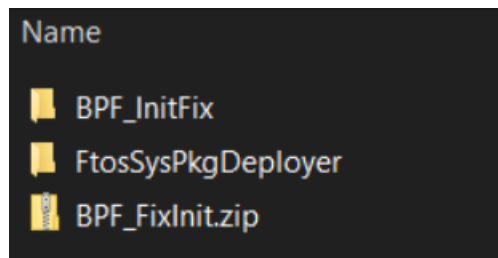
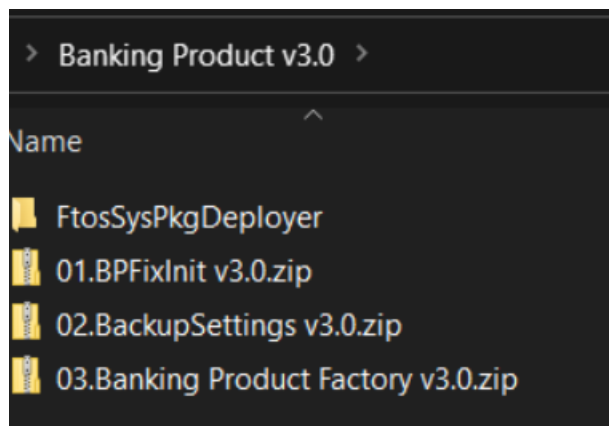
1. Disable the constraints that you have created on your environment, allowing the system to create the new ones after the Banking Product Factory v3.0 is imported.
2. Use the new **Configuration Data Definitions** imported with the Banking Product Factory v3.0 file when you export the data.

Installation Steps

1. Unzip your `Banking_Product_factory - v3.0.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 v3.0.



3. Select and copy the *FtosSysPkgDeployer* folder.
4. Navigate to the location where you have unzipped the Banking_Product_factory - v3.0.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.

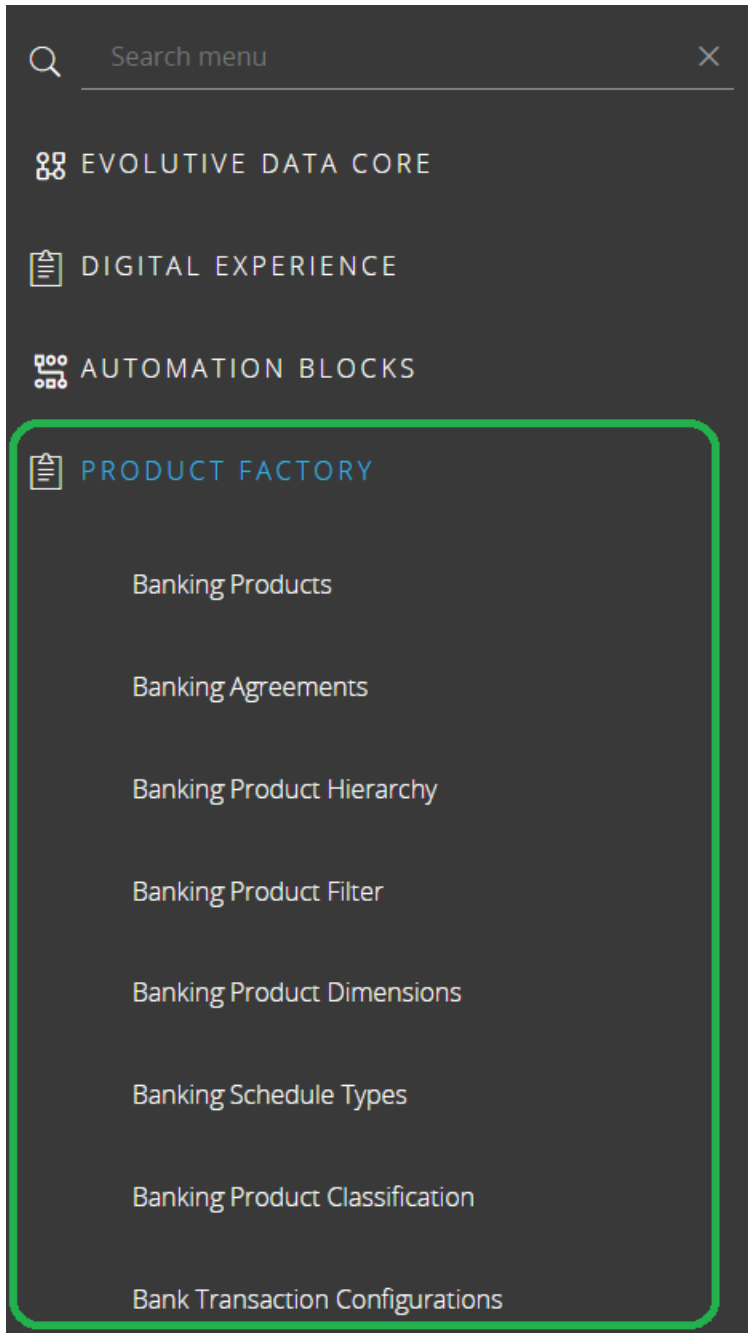


IMPORTANT!

Each zip file within the **Banking_Product_factory - v3.0.zip** must be extracted and installed separately, in the given order!

5. Edit the `install_Syspack.bat` file. Replace the parameters described in the ["install_SysPack.bat Parameters Explanation" on page 16](#) 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 Factory v3.0 is deployed.

- `<syspack_path>` - The physical path to the unzipped Banking Product Factory v3.0 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 3.0.1

HINT

This page contains the installation steps for Banking Product Factory for Enterprise v3.0.1. If you need to install the Banking Product Factory for Enterprise v3.0, follow the instructions on [this page](#).

Follow the steps described below to perform an automatic installation of the Banking Product Factory for Enterprise. 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 v3.0.1** 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 v3.0.1**, first you need to install the following:

- **Innovation Studio** minimum version **v21.2.1**
- **Standard SysPack** minimum version **v21.1.6002**.

IMPORTANT!

If you are installing **Banking Product Factory v3.0.1** 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 v3.0.1** 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.

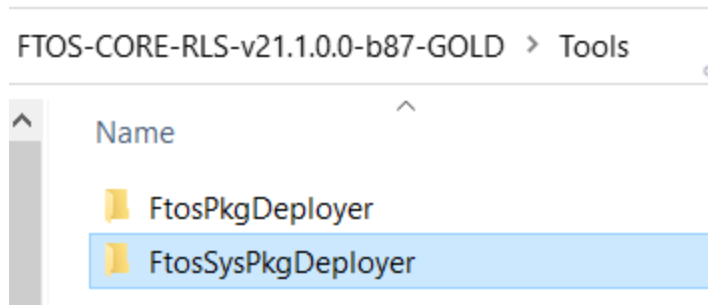
If you have already moved data using the **Configuration Data Deployment Package** menu, then you probably have already configured some unique constraints.

Before running the script, make sure you:

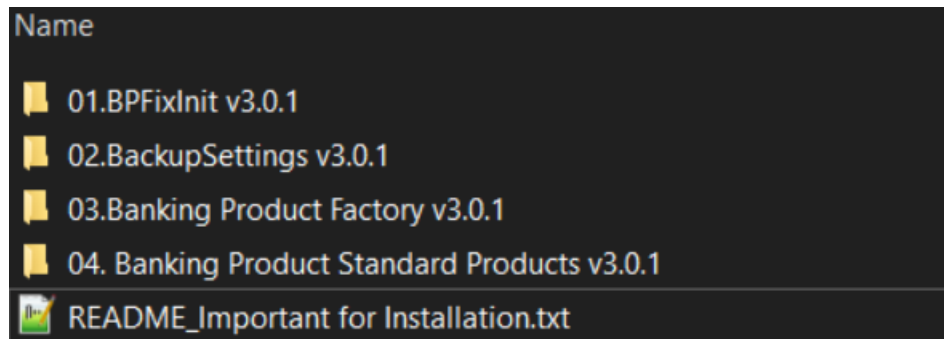
1. Disable the constraints that you have created on your environment, allowing the system to create the new ones after the Banking Product Factory v3.0.1 is imported.
2. Use the new **Configuration Data Definitions** imported with the Banking Product Factory v3.0.1 file when you export the data.

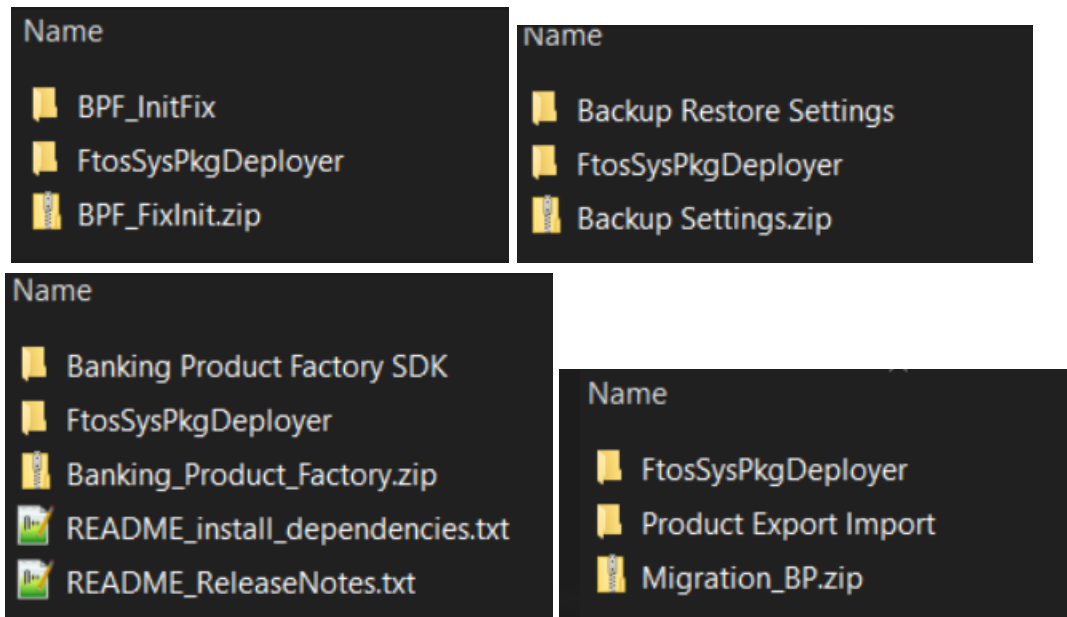
Installation Steps

1. Unzip your Banking_Product_factory - v3.0.1.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 v3.0.1.



3. Select and copy the *FtosSysPkgDeployer* folder.
4. Navigate to the location where you have unzipped the Banking_Product_factory - v3.0.1.zip (let's call this location <pckg_deployer_dir>), then paste the *FtosSysPkgDeployer* folder there, within each and every zip file that comes with the package.

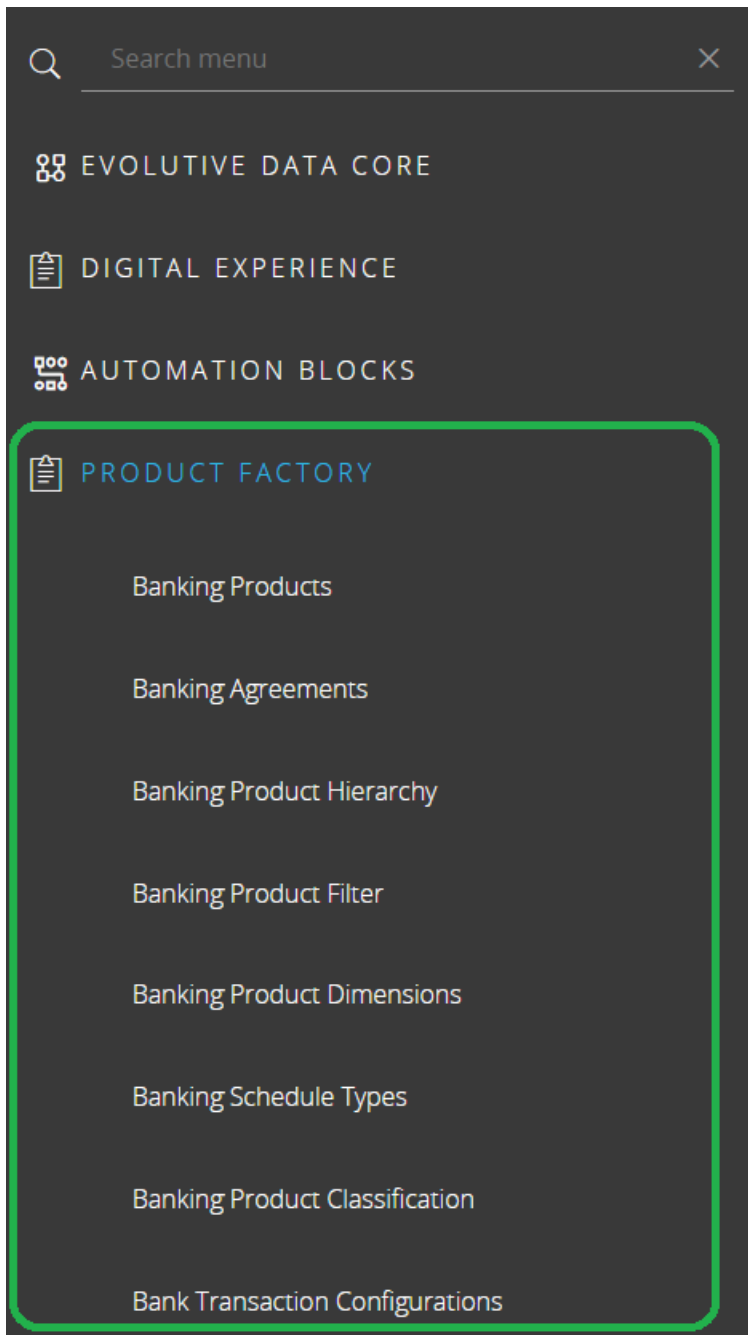


**IMPORTANT!**

Each zip file within the **Banking_Product_factory - v3.0.1.zip** must be extracted and installed separately, in the given order!

5. Edit the `install_Syspack.bat` file. Replace the parameters described in the "[install_SysPack.bat Parameters Explanation](#)" on page 22 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 Factory v3.0.1 is deployed.

- `<syspack_path>` - The physical path to the unzipped Banking Product Factory v3.0.1 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.

Installing Banking Product Factory 3.0.2

HINT

This page contains the installation steps for Banking Product Factory for Enterprise **v3.0.2**. If you need to install the Banking Product Factory for Enterprise **v3.0**, follow the instructions on [this page](#).

Follow the steps described below to perform an automatic installation of the Banking Product Factory for Enterprise. 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 v3.0.2** 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 v3.0.2**, first you need to install the following:

- **Innovation Studio** minimum version **v21.2.2**
- **SySDigitalSolutionPackages v21.2.2000**.

IMPORTANT!

If you are installing **Banking Product Factory v3.0.2** 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 v3.0.2** 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.

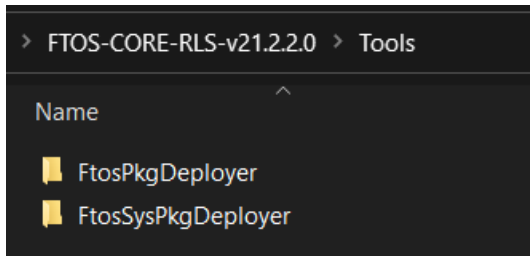
If you have already moved data using the **Configuration Data Deployment Package** menu, then you probably have already configured some unique constraints.

Before running the script, make sure you:

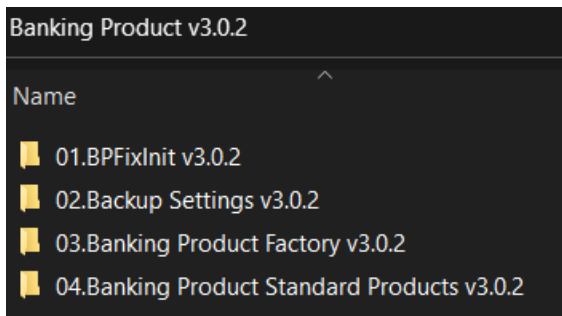
1. Disable the constraints that you have created on your environment, allowing the system to create the new ones after the Banking Product Factory v3.0.2 is imported.
2. Use the new **Configuration Data Definitions** imported with the Banking Product Factory v3.0.2 file when you export the data.

Installation Steps

1. Unzip your Banking_Product_factory - v3.0.2.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 v3.0.2.



3. Select and copy the *FtosSysPkgDeployer* folder.
4. Navigate to the location where you have unzipped the Banking_Product_factory - v3.0.2.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.



| 01.BPFixInit v3.0.2 | |
|---------------------|------|
| Name | Size |
| BPF_InitFix | |
| FtosSysPkgDeployer | |
| BPF_FixInit.zip | 2 KB |

| 02.Backup Settings v3.0.2 | |
|---------------------------|------|
| Name | Size |
| Backup Restore Settings | |
| FtosSysPkgDeployer | |
| Backup Settings.zip | 4 KB |

| 03.Banking Product Factory v3.0.2 | |
|-----------------------------------|--------|
| Name | Size |
| Banking Product Factory SDK | |
| FtosSysPkgDeployer | |
| Banking_Product_Factory.zip | 339 KB |

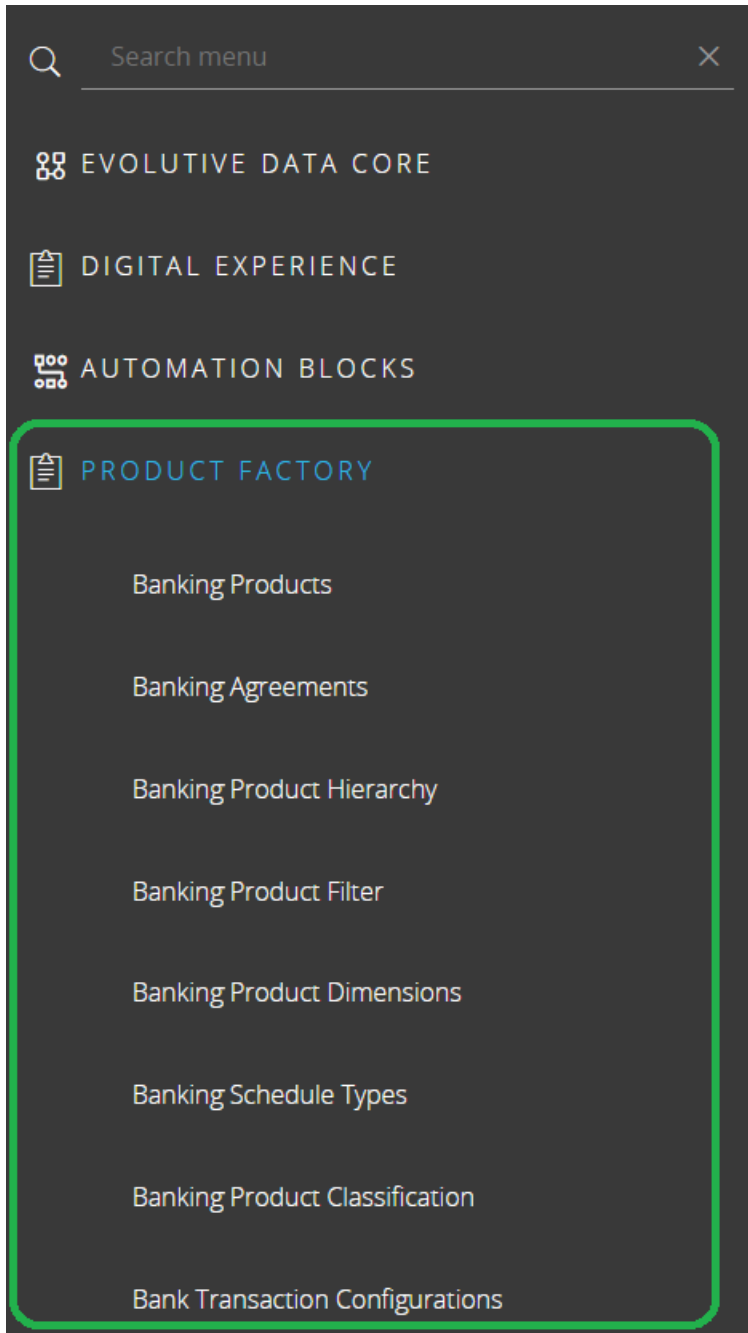
| 04.Banking Product Standard Products v3.0.2 | |
|---|-------|
| Name | Size |
| FtosSysPkgDeployer | |
| Product Export Import | |
| Migration_BP.zip | 65 KB |

IMPORTANT!

Each zip file within the **Banking_Product_factory - v3.0.2.zip** must be extracted and installed separately, in the given order!

5. Edit the `install_Syspack.bat` file. Replace the parameters described in the ["install_SysPack.bat Parameters Explanation" on page 28](#) 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 Factory v3.0.2 is deployed.

- <syspack_path> - The physical path to the unzipped Banking Product Factory v3.0.2 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.

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 Core DPA Platform, 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 in Developer mode.
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="checkbox"/> | AG_OD | Overdraft BankAccoun... | | | | | Approved | 1 |
| <input type="checkbox"/> | SCADENTAR | TEST_SCADENTAR_SIM... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | TLHFW | TL_EUR Holiday Shift F... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | th | th | | | | | Approved | 1 |
| <input type="checkbox"/> | TEST Laura | DD Current Account V... | Corporate | Bank Account | Current Account | | Approved | 1 |
| <input type="checkbox"/> | TestA | Duplicate - 4 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | 3456 | Card_And | Corporate | Bank Account | Deposit | Fix Deposit Collateral | Unapproved | 1 |
| <input type="checkbox"/> | testcancel | Duplicate - 5 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | OL VND | Corporate Term Loan ... | Corporate | Loan Term | Loan Term Secured | | Approved | 1 |
| <input type="checkbox"/> | LoanEURPHF | LoanEURPHfee | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |

In 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.

Actions

Due to the overwhelming number of possible products that can be created, the Core DPA Platform 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 Info' tab of the Banking Product Factory interface. The top navigation bar includes the following fields: CURRENT STATUS: APPROVED, NEXT STATUS: CHOOSE STATUS-, CODE: EMERGENCY1, PRODUCT: Emergency for corporate, START DATE: 26/02/2021, END DATE: 27/02/2021, VERSION: 1, and VERSION DATE: 26/02/2021 02:00. Below the navigation bar, there are nine tabs: 1 Main Info, 2 Details, 3 Availability, 4 Dimensions, 5 Risk Formulas, 6 Test Risk Formulas, 7 Documents, 8 Associated Transactions, and 9 History. The 'Main Information' section contains the following fields: Product Type (Term Loan), Banking Product Code (EMERGENCY1), Name (Emergency for corporate), Class (Corporate), SubClass (Loan Term), Category (Loan Term Secured), SubCategory, Start Date (26/02/2021), and End Date (27/02/2021). In the top right corner, there are five green buttons labeled 1 through 5.

- 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 is the **Save and close** button.
- Button 3 is the **Save and reload** button.
- Button 4 opens the **Banking Product Business Workflow Transitions List**.
- Button 5 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.

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 in Developer mode.
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.

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BANKING PRODUCTS LIST

| <input type="checkbox"/> | Code | Name | Class | SubClass | Category | SubCategory | Status | |
|--------------------------|------------|---------------------------|-----------|--------------|---------------------|------------------------|------------|---|
| | 🔍 | 🔍 | 🔍 | 🔍 | 🔍 | 🔍 | 🔍 | |
| | AG_OD | Overdraft BankAccount... | | | | | Approved | 1 |
| | SCADENTAR | TEST_SCADENTAR_SIM... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | TLEHFW | TL_EUR Holiday Shift F... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | th | th | | | | | Approved | 1 |
| | TEST Laura | DD Current Account V... | Corporate | Bank Account | Current Account | | Approved | 1 |
| | TestA | Duplicate - 4 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | 3456 | Card_And | Corporate | Bank Account | Deposit | Fix Deposit Collateral | Unapproved | 1 |
| | testcancel | Duplicate - 5 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | OL VND | Corporate Term Loan ... | Corporate | Loan Term | Loan Term Secured | | Approved | 1 |
| | LoanEURPHF | LoanEURPHfee | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |

51020

123456789

In 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.

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. [Risk Formulas](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Test Risk Formulas](#) - Use this tab to test the formula attached above before displaying it in a digital journey.
7. [Documents](#) - This tab contains all the attached documents available for a product.
8. [Associated Transactions](#) - Transactions that are done to and from a banking product are found in this tab.
9. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
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, image and features.

The following fields are available:

| Field | Required | Data Type | Details |
|---------------|----------|------------|--|
| Product Type | Yes | Option Set | <p>Choose one for the following:</p> <ul style="list-style-type: none"> • Bank Account • Term Loan • Card • Overdraft • Leasing • Mortgage • Credit Card • Deposit <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> |
| 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 |
|----------------------|----------|------------|--|
| Banking Product Code | Yes | Text | 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. |
| Name | Yes | Text | The name of the product. |
| Class | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subclass | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Category | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subcategory | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Start Date | Yes | Date | The date when the product becomes available. |
| End Date | Yes | Date | The last date from when the product is available. From that date forward, the product is no longer available. |
| Benefits | No | Text area | Insert the advantages of owning the banking product. You can format the text in the text editor window. |
| Description | No | Text area | Write any description or additional text here. |
| Product Image | No | File | Insert an image representative for the product. |
| Document | No | File | Insert the document representative for the product. |
| 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.

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

The screenshot shows the 'Main Information' section of the Banking Product Factory interface. The form includes the following fields and sections:

- Product Type:** Bank Account
- Banking Product Code:** FDC VND
- Class:** Corporate
- Category:** Deposit
- Start Date:** 01/01/2020
- End Date:** 25/02/2020
- Name:** Fixed Deposit Account VND
- SubClass:** Bank Account
- SubCategory:** FD Deposit Corporate
- Description:** A large text area for describing the product.
- Product Image:** A section for uploading a product image.
- Display Conditions:** A section for defining display conditions.
- Product Features:** A section for managing product features, including an 'Insert' button and a table for feature details.

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 |
|-----------------|----------|------------|---|
| Banking Product | No | Option set | Choose the name of the product. |
| Is main feature | No | Bool | Select the checkbox if it is the major feature. |
| Feature | No | Text | The name of the feature. |

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

In the **Product Classifications** 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, or create a new one by clicking **Insert** and filling in the following fields:

| 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. |

| Field | Required | Data Type | Details |
|------------|----------|----------------|--|
| 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. |

The **Contract Classifications Section** is displayed after saving the classification item record and allows you to insert existing contracts. The following information is displayed here:

| Field | Details |
|---------------------|--|
| Contract | The number of the contract using this classification. |
| Code | The code of the classification item. |
| Name | The name of the classification item. |
| Classification Type | The type of the classification. |
| Valid From | The date from which the classification item is valid. |
| Valid To | The date until which the classification item is valid. |

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:

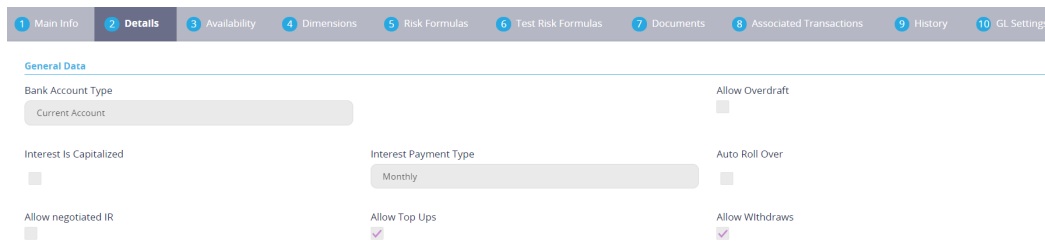
| Field | Required | Data Type | Details |
|-------------------------|----------|------------|--|
| Bank Account Type | Yes | Option set | <p>Choose one from the following:</p> <ul style="list-style-type: none"> • Current Account • Savings Account • Fixed Deposit Account • Term Deposit Account • Loan Term Account. |
| Allow Overdraft | No | Bool | <p>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.</p> |
| Interest is capitalized | Yes | Bool | <p>Only applicable if there is an interest rate. Select the checkbox if true.</p> |

| Field | Required | Data Type | Details |
|-----------------------|----------|------------|---|
| Interest payment type | Yes | Option set | Choose one from the following: <ul style="list-style-type: none"> • Monthly • Maturity • Yearly • Daily • Quarterly. |
| Auto Rollover | Yes | Bool | 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 negotiated IR | No | Bool | Select the checkbox if the interest rate is negotiable for this product. |
| Allow Top Ups | No | Bool | Select the checkbox if sum you can top up the sum of money. |
| Allow Withdrawals | No | Bool | Select the checkbox if the customer can withdraw money for this product. |

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.



1 Main Info **2** Details **3** Availability **4** Dimensions **5** Risk Formulas **6** Test Risk Formulas **7** Documents **8** Associated Transactions **9** History **10** GL Settings

General Data

Bank Account Type
Current Account

Allow Overdraft ☐

Interest Is Capitalized ☐

Interest Payment Type
Monthly

Auto Roll Over ☐

Allow negotiated IR ☐

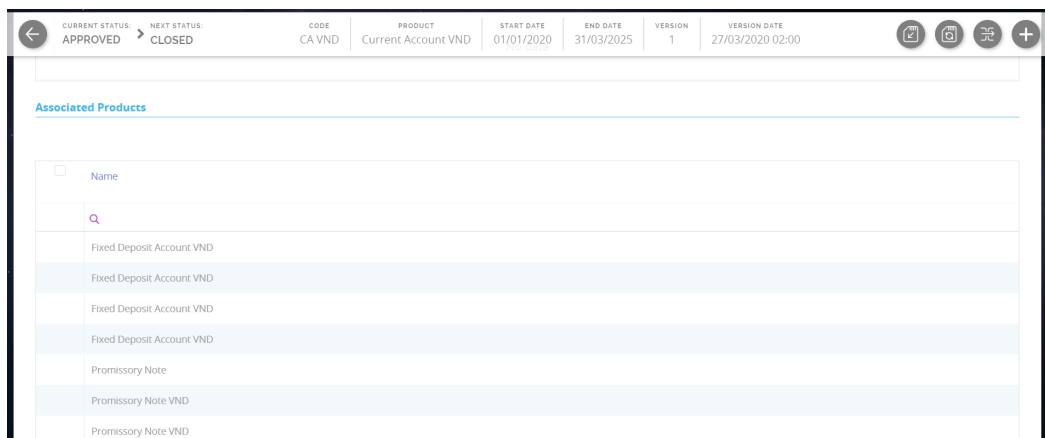
Allow Top Ups ☒

Allow Withdraws ☒

The **Product Destination Types** section allows for insertion or removal of existing destinations. 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.

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.



← CURRENT STATUS: APPROVED NEXT STATUS: CLOSED

CODE CA VND PRODUCT Current Account VND START DATE 01/01/2020 END DATE 31/03/2025 VERSION 1 VERSION DATE 27/03/2020 02:00

Associated Products

| Name |
|---------------------------|
| Fixed Deposit Account VND |
| Fixed Deposit Account VND |
| Fixed Deposit Account VND |
| Fixed Deposit Account VND |
| Promissory Note |
| Promissory Note VND |
| Promissory Note VND |

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

Currency: ↓

Period Type: ↓

Minimum Period: Maximum Period:

Minimum Amount: Maximum Amount:

[Self Bank Account Associated With The Product](#)

The following fields are available:

| Field | Required | Data Type | Details |
|----------------|----------|--------------|---|
| Currency | Yes | Option set | Choose the currency for this banking product. |
| Period Type | No | Option set | Choose one: <ul style="list-style-type: none"> • Days • Weeks • Months • Years • Once. |
| 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. |

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see "[Product Filter](#)" on page 386.

The screenshot shows the 'Availability Rules' section with a sub-header 'PRODUCT AVAILABILITY ITEM FILTERS'. Below this are four buttons: 'Insert', 'Delete', 'Export', and 'Refresh'. A table with the following content is displayed:

| Description |
|--|
| Account is in Persona = Customers with age between 25-35 |
| Age >= 25 < 35 |
| DateValue = 2020-08-17 |

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.

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 > Banking Product Factory for Enterprise > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions

Click **Insert**. 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. |

| Field | Required | Data Type | Details |
|---------------------------|----------|------------|---|
| 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 | Bool | 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** 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 386 . |
| 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 386 . |
| 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 bool for the values you wish to include in the filter. |

EDIT INTEREST & COMMISSION ITEM FILTER

INTEREST & COMMISSION ITEM FILTER

Filter:

OptionSet:

Description:

| Name | Display Name |
|--|--------------------------------|
| <input checked="" type="checkbox"/> highschool | Bacalaureat |
| <input checked="" type="checkbox"/> No studies / Primary school | Fara studii sau scoala primara |
| <input checked="" type="checkbox"/> Gymnasium studies | Gymnasium studies |
| <input checked="" type="checkbox"/> High school | High school |
| <input checked="" type="checkbox"/> Higher education | Licenta |
| <input type="checkbox"/> higher education | Licenta universitara |
| <input type="checkbox"/> postgraduate | Master/MBA/EMBA/Dr. |
| <input type="checkbox"/> Postgraduate studies (MBA, MA, ACCA, CPA, etc.) | Master/MBA/EMBA/Dr. |

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

Insurance

For any banking product, you can select a pre-existing insurance or create a new one. To add a new one, 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

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. 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 | Bool | If you select this checkbox, the discount is calculated using the Banking Formula engine. |
| Is optional discount? | No | Bool | Selecting this checkbox results in the discount being applied only if the customer agrees to the discount. |
| Is percentage | No | Bool | 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

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:

Risk Formulas

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

In the **Banking Product Formula** 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 | No | Text | Enter an appropriate name. |
| Banking Product | No | Option set | The name of the banking product is inserted automatically. |
| Formula Type | Yes | Option set | Select the type of formula configured before, e.g. scoring /eligibility. |
| Formula | Yes | Option set | Select the previously configured formula. <div> IMPORTANT! The formula must be activated before attaching it to a product. </div> |

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

1 Definition **2 Input** **3 Output**

FORMULA PARAMETER MAPPING

Data Mapping Type: Formula

Master Entity: FTOS_BNKAP_RetailApplicantData

Operation Name: EligibilityForApplicant

Name: EligibilityForApplicant_EligibilityForApplicant_1602250301662_RetailMortgage

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

1 Definition **2 Input** **3 Output**

FTOS_BNKAP_RetailApplicantData - Input

- Age: Age
- Citizenship: Citizenship Id
- IsInAMLRiskList: false
- IsRetail: true
- MonthsActualJob: Employ Monts
- NetIncome: netIncome

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

1 Definition **2 Input** **3 Output**

FTOS_BNKAP_RetailApplicantData - Output

- KOAge: click to map
- KOIncome: click to map
- KOIsInAMLRiskList: click to map
- KOIsRetail: click to map
- KOMonthsActualJob: click to map
- KOCitizenship: click to map
- FinalResult: 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? €

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: [none]

OTHER SPENDINGS: €

HOW MANY FINANCIAL DEPENDANTS: 0

YOUR RESIDENCE IS: [none]

LIFE, HEALTH INSURANCE AND PRIVATE PENSIONS: [none]

MAINTENANCE FOR DEPENDANTS: [none]

YOUR RENT IS: [none]

Test Risk Formulas

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

Insert **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

TEST SCENARIO

Test Scenario Type

| Key | Value |
|-----|------------|
| 0 | 0 |
| 0 | Test value |
| 0 | Test value |
| 0 | Test value |
| 0 | 100 |
| 0 | 100 |
| 0 | 22.02 |

Save Output Data **Calculate**

TEST SCENARIO OUTPUTS

Save Output Data **Calculate**

No data

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**.

EDIT TEST SCENARIO

TEST SCENARIO

Test Scenario Type

| Key | Value |
|-----|------------|
| 0 | 0 |
| 0 | Test value |
| 0 | Test value |
| 0 | Test value |
| 0 | 100 |
| 0 | 100 |
| 0 | 22.02 |

Save Output Data **Calculate**

TEST SCENARIO OUTPUTS

Save Output Data **Calculate**

| Key | Value |
|-----|------------|
| 0 | 0 |
| 0 | Test value |
| 0 | Test value |
| 0 | Test value |
| 0 | 100 |
| 0 | 100 |
| 0 | 22.02 |

Documents

The **Documents** tab contains all the attached documents available for a product. The previously associated documents are displayed in the **Banking Product Documents** section.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Risk Formulas 6 Test Risk Formulas 7 **Documents** 8 Associated Transactions 9 History

Banking Product Document

+ Insert X Delete Export Refresh

| ReportId | Banking Copies No | Operation Code |
|--------------|-------------------|----------------|
| ACContractLG | 1 | |
| LoanContract | 2 | |

Banking Product Agreement

+ Insert X Delete Export Refresh

| Code |
|------|
| |

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 | Bool | Select if the document is mandatory. |
| Includes Debtor | Bool | Select if the document includes the debtor. |
| Includes Coborrower | Bool | Select if the document includes the co-borrower. |
| Requires Signature | Bool | Select if the document requires to be signed. |
| Is accord | Bool | Select if the document represents the accord. |

ADD BANKING PRODUCT DOCUMENT

Banking Product Document

Operation Code: 113559 Banking Copies No: 2 Report: Document Type: Credit Application

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.

The agreements that a customer needs to go through are displayed in the **Banking Products Agreement** 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 | Bool | Select if the agreement is mandatory for the product. |

ADD BANKING PRODUCT AGREEMENT

BANKING PRODUCT AGREEMENT

Agreement Banking Product

Code 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](#).

Associated Transactions

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.

Transactions types that are performed to and from a banking product are displayed in the **Associated Transactions** tab.

For each banking product, you must select a bank account to be used for transactions. Next to the **Self Bank Account For Transactions** 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.

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

| Field | Required | Data Type | Details |
|------------------------------|----------|------------|--|
| Transactions Operations Type | Yes | Option set | <p>This field makes the connection with the transaction motor of bank accounts. Select one of the methods defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div> |
| Is Automatic Transaction | Yes | Bool | This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations. |
| Is System Transactions | No | Bool | 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. |
| Name | Yes | Text | Name of the transaction type. |
| Transaction Code | Yes | Text | The code of the transaction type. |

| Field | Required | Data Type | Details |
|-------------------------------|----------|------------|---|
| Generates Accounting Entry | Yes | Bool | This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity. |
| Source Entity ID | Yes | Option set | The ID of the entity referenced by the accounting systems. |
| Generate New Contract Version | No | Bool | This checkbox allows you to specify if a new contract version should be generated by this transaction type. |
| Commission Type | No | Lookup | The transaction type for which this transaction type is applicable. |

The screenshot shows the 'Associated Transactions' tab in the Banking Product Factory. The breadcrumb trail at the top indicates the path: 1 Main Info, 2 Details, 3 Availability, 4 Dimensions, 5 Risk Formulas, 6 Test Risk Formulas, 7 Documents, 8 Associated Transactions, 9 History, 10 GL Settings. Below the breadcrumb, the title 'Self Bank Account Associated With The Product' is displayed. A search bar contains the text 'Self Bank Account For Transactions' and a dropdown menu shows 'NOTEXISTING-01'. Under the 'TRANSACTION TYPES' section, there are buttons for '+ Insert existing' and 'X Remove existing'. A table lists various transaction types with a search icon in the first row:

| Name |
|-------------------------|
| Accruals and Provisions |
| Disbursement |
| Early Repayment |
| Payment Holiday |
| Repayment |
| Repayment Notification |
| Reschedule Overdues |

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 415](#)).

GL Settings

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.

BANKING PRODUCT GL ACCOUNTS

| <div> <div>+ Insert</div> <div>✕ Delete</div> <div>📄 Export</div> <div>🔄 Refresh</div> </div> | | | | |
|---|-------------------|------------------|----------------|------------------------|
| Product | Accounting System | Accounting Scope | Item | GL Account |
| TestPack | 0001 | RxDeposit | 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:

| 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 in Developer mode.
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 | |
|--------------------------|------------|---------------------------|-----------|--------------|---------------------|------------------------|------------|---|
| | AG_OD | Overdraft BankAccoun... | | | | | Approved | 1 |
| | SCADENTAR | TEST_SCADENTAR_SIM... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | TLEHFW | TL_EUR Holiday Shift F... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | th | th | | | | | Approved | 1 |
| | TEST Laura | DD Current Account V... | Corporate | Bank Account | Current Account | | Approved | 1 |
| | TestA | Duplicate - 4 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | 3456 | Card_And | Corporate | Bank Account | Deposit | Fix Deposit Collateral | Unapproved | 1 |
| | testcancel | Duplicate - 5 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | OL VND | Corporate Term Loan ... | Corporate | Loan Term | Loan Term Secured | | Approved | 1 |
| | LoanEURPHF | LoanEURPHfee | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |

In 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.

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. [Risk Formulas](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Test Risk Formulas](#) - Use this tab to test the formula attached above before displaying it in a digital journey.
7. [Documents](#) - This tab contains all the attached documents available for a product.
8. [Associated Transactions](#) - Transactions that are done to and from a banking product are found in this tab.
9. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
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, image and features.

The following fields are available:

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

| Field | Required | Data Type | Details |
|--------------------|----------|------------|---|
| Class | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subclass | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Category | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subcategory | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Start Date | Yes | Date | The date when the product becomes available. |
| End Date | Yes | Date | The last date from when the product is available. From that date forward, the product is no longer available. |
| Benefits | No | Text area | Insert the advantages of owning the banking product. You can format the text in the text editor window. |
| Description | No | Text area | Write any description or additional text here. |
| Product Image | No | File | Insert an image representative for the product. |
| Document | No | File | Insert the document representative for the product. |
| 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.

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

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 |
|-----------------|----------|------------|---|
| Banking Product | No | Option set | Choose the name of the product. |
| Is main feature | No | Bool | Select the checkbox if it is the major feature. |
| Feature | No | Text | The name of the feature. |

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

In the **Product Classifications** 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, or create a new one by clicking **Insert** and filling in the following fields:

| 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. |

The **Contract Classifications Section** is displayed after saving the classification item record and allows you to insert existing contracts. The following information is displayed here:

| Field | Details |
|---------------------|--|
| Contract | The number of the contract using this classification. |
| Code | The code of the classification item. |
| Name | The name of the classification item. |
| Classification Type | The type of the classification. |
| Valid From | The date from which the classification item is valid. |
| Valid To | The date until which the classification item is valid. |

Details

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

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

| Field | Required | Data Type | Details |
|-------------------|----------|------------|--|
| Bank Account Type | Yes | Option set | From the list of possible values, choose Current Account , otherwise you can't attach the overdraft functionality to the account. |

| Field | Required | Data Type | Details |
|-------------------------|----------|-----------|---|
| Allow Overdraft | No | Bool | 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. |
| Interest is capitalized | Yes | Bool | <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 | Yes | Option set | <p>Choose one from the following:</p> <ul style="list-style-type: none"> • Monthly • Maturity • Yearly • Daily • Quarterly. |
| Auto Rollover | Yes | Bool | <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 negotiated IR | No | Bool | <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 configured on the banking product, but the value is read-only and cannot be changed. |

| Field | Required | Data Type | Details |
|-------|----------|-----------|---------|
| | | | |

| Field | Required | Data Type | Details |
|---------------|----------|-----------|--|
| Allow Top Ups | No | Bool | <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 interest is calculated for the initial amount up until the top up date, plus the interest for the full amount (initial amount + top up |

| Field | Required | Data Type | Details |
|-------|----------|-----------|---|
| | | | <p>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 | Bool | <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 accounts transactions are not loaded, thus these transaction types |

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

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 displays the 'Details' tab of the Banking Product Factory interface. It is divided into two main sections: 'General Data' and 'Payment Schedule Types'.

General Data:

- Bank Account Type:** A dropdown menu showing 'Current Account'.
- Interest Is Capitalized:** A checkbox that is checked.
- Allow negotiated IR:** A checkbox that is checked.
- Interest Payment Type:** A dropdown menu showing 'Monthly'.
- Allow Top Ups:** A checkbox that is checked.
- Allow Overdraft:** A checkbox that is checked.
- Auto Roll Over:** A checkbox that is checked.
- Allow Withdrawals:** A checkbox that is checked.

Payment Schedule Types:

- Periodicity Type:** A dropdown menu with a downward arrow and a pencil icon.
- Repayment Allocation Method:** A dropdown menu with a downward arrow and a pencil icon.
- Holiday Shift For Repayment Installments:** A checkbox that is unchecked.
- Holiday Shift Method:** A dropdown menu showing 'Forward'.
- Defer Due Date:** A checkbox that is checked.

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

| 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 |
|--|----------|------------|---|
| Repayment Allocation Method | Yes | Option set | The repayment allocation method represents the recovery order of amounts from repayment notifications. You can specify if charges should be recovered with priority or maybe interest or principal. You can also split order by number of days overdue. Select a repayment allocation method from the list. |
| Holiday Shift For Repayment Installments | Yes | Bool | <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 appears if you select this checkbox.</p> </div> |

| 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 last working day before the initially calculated due date. • Backward - the due date is shifted to the next working day after the initially calculated due date. <p>Default value: Forward.</p> |
| Defer Due Date | Yes | Bool | <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> |
| Grace Days for Repayment | No | Whole number | Insert the number of days for which the grace period applies. |

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

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.

In the **Payment Schedule Types** section, you can insert or delete associated payment schedule types. To insert a new associated payment schedule type, click **Insert Existing** and select one of the existing types. For example, for current accounts with overdraft functionality, select `OverdraftCurrentAccount`.

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

The **Product Destination Types** section allows for insertion or removal of existing destinations. 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.

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.

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 |
|----------|----------|------------|---|
| Currency | Yes | Option set | Choose the currency for this banking product. |

| Field | Required | Data Type | Details |
|--|----------|--------------|---|
| Period Type | No | Option set | <p>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 selected in the Details tab. </div> |
| 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. |

| Field | Required | Data Type | Details |
|--------------------------------------|----------|--------------|--|
| 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. |

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see ["Product Filter" on page 386](#).

The screenshot shows the 'Availability Rules' section with a sub-header 'PRODUCT AVAILABILITY ITEM FILTERS'. Below this are four buttons: 'Insert', 'Delete', 'Export', and 'Refresh'. A table with a 'Description' column contains three entries: 'Account is in Persona = Customers with age between 25-35', 'Age >= 25 - 35', and 'DateValue = 2020-08-17'.

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

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. Click the **Insert** button to add a covenant to the product. You can select from 3 possible covenants:

- *Borrowers should perform tax obligations*: the lenders expect the borrowers to perform their tax obligations to both the business and towards their employees. This covenant is of type affirmative.
- *Lender can monitor borrower's current ratio*: the lender may continuously monitor the borrower's current ratio to ensure it stays relatively attractive and promising. This covenant is of type financial.
- *Lender posses the right to prevent merges or acquisitions*: a clear stipulation that the lender possesses the right to prevent merges of acquisitions without proper notification or full knowledge of the process. This covenant is of type negative.

Each covenant can be attributed a value, an availability period, and a review frequency in months.

After all configurations are done, click the **Save and Reload** button.

Dimensions

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

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 > Banking Product Factory for Enterprise > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions

Click **Insert**. 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 | Bool | 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** 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 386 . |
| 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 386 . |
| 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 bool for the values you wish to include in the filter. |

EDIT INTEREST & COMMISSION ITEM FILTER

INTEREST & COMMISSION ITEM FILTER

Filter:

OptionSet:

Description:

| Name | Display Name |
|--|--------------------------------|
| <input checked="" type="checkbox"/> High school | Baccalaureat |
| <input checked="" type="checkbox"/> No studies / Primary school | Fără studii sau școală primară |
| <input checked="" type="checkbox"/> Gymnasium studies | Gymnasium studies |
| <input checked="" type="checkbox"/> High school | High school |
| <input checked="" type="checkbox"/> Higher education | Licența |
| <input type="checkbox"/> postgraduate | Licența universitară |
| <input type="checkbox"/> Postgraduate studies (MBA, MA, ACCA, CFA, etc.) | Master/MBA/EMBA/Dr. |

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

Insurance

For any banking product, you can select a pre-existing insurance or create a new one. To add a new one, 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

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. 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 | Bool | If you select this checkbox, the discount is calculated using the Banking Formula engine. |
| Is optional discount? | No | Bool | Selecting this checkbox results in the discount being applied only if the customer agrees to the discount. |
| Is percentage | No | Bool | 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

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:

Risk Formulas

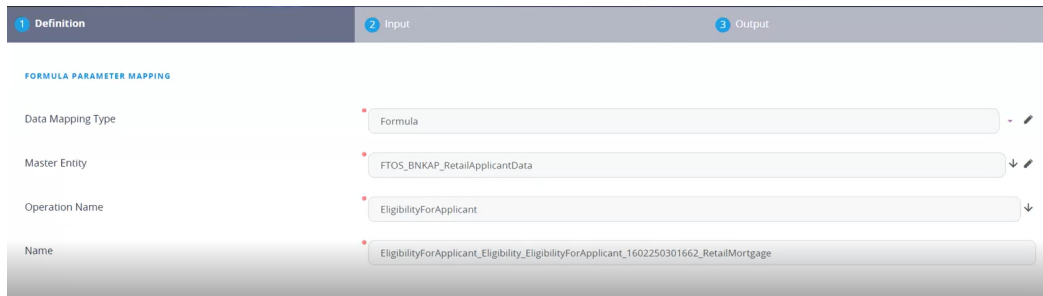
The **Risk Formulas** tab keeps formulas built with [Formula Engine](#) for the banking product. Such formulas can be used to determine the eligibility of a customer.

In the **Banking Product Formula** 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 | No | Text | Enter an appropriate name. |
| Banking Product | No | Option set | The name of the banking product is inserted automatically. |
| Formula Type | Yes | Option set | Select the type of formula configured before, e.g. scoring /eligibility. |
| Formula | Yes | Option set | Select the previously configured formula. <div> IMPORTANT! The formula must be activated before attaching it to a product. </div> |

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



1 Definition **2 Input** **3 Output**

FORMULA PARAMETER MAPPING

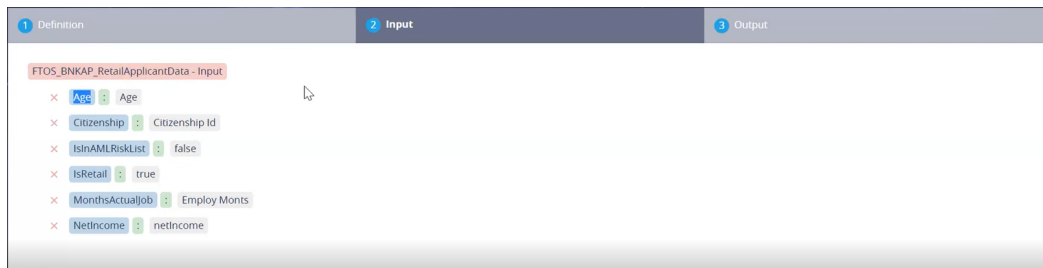
Data Mapping Type: Formula

Master Entity: FTOS_BNKAP_RetailApplicantData

Operation Name: EligibilityForApplicant

Name: EligibilityForApplicant_EligibilityForApplicant_1602250301662_RetailMortgage

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

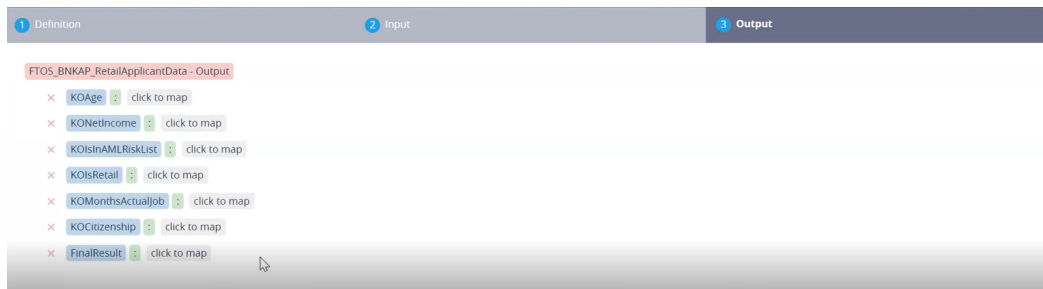


1 Definition **2 Input** **3 Output**

FTOS_BNKAP_RetailApplicantData - Input

- Age: Age
- Citizenship: Citizenship Id
- IsInAMLRiskList: false
- IsRetail: true
- MonthsActualJob: Employ Monts
- NetIncome: netIncome

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



1 Definition **2 Input** **3 Output**

FTOS_BNKAP_RetailApplicantData - Output

- KOAge: click to map
- KOIncome: click to map
- KOIsInAMLRiskList: click to map
- KOIsRetail: click to map
- KOMonthsActualJob: click to map
- KOCitizenship: click to map
- FinalResult: 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? €

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 Risk Formulas

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

Insert **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

TEST SCENARIO

Test Scenario Type

| Key | Value |
|-----|------------|
| 0 | 0 |
| 0 | Test value |
| 0 | Test value |
| 0 | Test value |
| 0 | 100 |
| 0 | 100 |
| 0 | 22.02 |

☐ Save Output Data **Calculate**

TEST SCENARIO OUTPUTS

| Name |
|------|
| 0 |

No data

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**.

EDIT TEST SCENARIO

TEST SCENARIO

| Name |
|--|
| 0 |
| Corporate Loan For IT Corporation / 19/10/2020, 10/10/21 |
| Corporate Loan For IT Corporation / 19/10/2020, 10/10/21 |
| Corporate Loan For IT Corporation / 19/10/2020, 10/10/21 |

Documents

The **Documents** tab contains all the attached documents available for a product. The previously associated documents are displayed in the **Banking Product Documents** section.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Risk Formulas 6 Test Risk Formulas 7 **Documents** 8 Associated Transactions 9 History

Banking Product Document

+ Insert X Delete Export Refresh

| ReportId | Banking Copies No | Operation Code |
|--------------|-------------------|----------------|
| ACContractLG | 1 | |
| LoanContract | 2 | |

Banking Product Agreement

+ Insert X Delete Export Refresh

| Code |
|------|
| |

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 | Bool | Select if the document is mandatory. |
| Includes Debtor | Bool | Select if the document includes the debtor. |
| Includes Coborrower | Bool | Select if the document includes the co-borrower. |
| Requires Signature | Bool | Select if the document requires to be signed. |
| Is accord | Bool | Select if the document represents the accord. |

ADD BANKING PRODUCT DOCUMENT

Banking Product Document

Operation Code: 113559 Banking Copies No: 2 Report: Document Type: Credit Application

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.

The agreements that a customer needs to go through are displayed in the **Banking Products Agreement** 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 | Bool | Select if the agreement is mandatory for the product. |

ADD BANKING PRODUCT AGREEMENT

BANKING PRODUCT AGREEMENT

Agreement Banking Product

Code 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](#).

Associated Transactions

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.

Transactions types that are performed to and from a banking product are displayed in the **Associated Transactions** tab.

For each banking product, you must select a bank account to be used for transactions. Next to the **Self Bank Account For Transactions** 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.

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

| Field | Required | Data Type | Details |
|-------------------------------|----------|------------|--|
| Transactions Operations Type | Yes | Option set | <p>This field makes the connection with the transaction motor of bank accounts. Select one of the methods defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div> |
| Is Automatic Transaction | Yes | Bool | This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations. |
| Is System Transactions | No | Bool | 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. |
| Name | Yes | Text | Name of the transaction type. |
| Transaction Code | Yes | Text | The code of the transaction type. |
| Generates Accounting Entry | Yes | Bool | This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity. |
| Source Entity ID | Yes | Option set | The ID of the entity referenced by the accounting systems. |
| Generate New Contract Version | No | Bool | This checkbox allows you to specify if a new contract version should be generated by this transaction type. |

| Field | Required | Data Type | Details |
|-----------------|----------|-----------|---|
| Commission Type | No | Lookup | The transaction type for which this transaction type is applicable. |

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 415](#)).

GL Settings

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.

BANKING PRODUCT GL ACCOUNTS

| <input type="button" value="+ Insert"/> <input type="button" value="X Delete"/> <input type="button" value="Export"/> <input type="button" value="Refresh"/> | | | | |
|--|-------------------|------------------|----------------|------------------------|
| Product | Accounting System | Accounting Scope | Item | GL Account |
| TestPack | 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:

| 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 in Developer mode.
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 | |
|--------------------------|------------|---------------------------|-----------|--------------|---------------------|------------------------|------------|---|
| | AG_OD | Overdraft BankAccoun... | | | | | Approved | 1 |
| | SCADENTAR | TEST_SCADENTAR_SIM... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | TLEHFW | TL_EUR Holiday Shift F... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | th | th | | | | | Approved | 1 |
| | TEST Laura | DD Current Account V... | Corporate | Bank Account | Current Account | | Approved | 1 |
| | TestA | Duplicate - 4 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | 3456 | Card_And | Corporate | Bank Account | Deposit | Fix Deposit Collateral | Unapproved | 1 |
| | testcancel | Duplicate - 5 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | OL VND | Corporate Term Loan ... | Corporate | Loan Term | Loan Term Secured | | Approved | 1 |
| | LoanEURPHF | LoanEURPHfee | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |

5 10 20 1 2 3 4 5 6 7 8 9

In 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.

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. [Risk Formulas](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Test Risk Formulas](#) - Use this tab to test the formula attached above before displaying it in a digital journey.
7. [Documents](#) - This tab contains all the attached documents available for a product.
8. [Associated Transactions](#) - Transactions that are done to and from a banking product are found in this tab.
9. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
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, image and features.

The following fields are available:

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

| Field | Required | Data Type | Details |
|--------------------|----------|------------|---|
| Class | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subclass | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Category | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subcategory | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Start Date | Yes | Date | The date when the product becomes available. |
| End Date | Yes | Date | The last date from when the product is available. From that date forward, the product is no longer available. |
| Benefits | No | Text area | Insert the advantages of owning the banking product. You can format the text in the text editor window. |
| Description | No | Text area | Write any description or additional text here. |
| Product Image | No | File | Insert an image representative for the product. |
| Document | No | File | Insert the document representative for the product. |
| 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.

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

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 |
|-----------------|----------|------------|---|
| Banking Product | No | Option set | Choose the name of the product. |
| Is main feature | No | Bool | Select the checkbox if it is the major feature. |
| Feature | No | Text | The name of the feature. |

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

In the **Product Classifications** 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, or create a new one by clicking **Insert** and filling in the following fields:

| 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. |

| Field | Details |
|-------------|---|
| 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. |

The **Contract Classifications Section** is displayed after saving the classification item record and allows you to insert existing contracts. The following information is displayed here:

| Field | Details |
|---------------------|--|
| Contract | The number of the contract using this classification. |
| Code | The code of the classification item. |
| Name | The name of the classification item. |
| Classification Type | The type of the classification. |
| Valid From | The date from which the classification item is valid. |
| Valid To | The date until which the classification item is valid. |

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 |
|-------------------|----------|------------|---|
| Bank Account Type | Yes | Option set | <p>Choose one from the following:</p> <ul style="list-style-type: none"> • Current Account • Savings Account • Fix Deposit Account • Term Deposit Account • Loan Term Account. |

| Field | Required | Data Type | Details |
|--|----------|--------------|---|
| Is Revolving | No | Bool | Allows a business to borrow money as needed for funding working capital needs and continuing operations such as meeting payroll and payables. |
| Auto Disbursement | Yes | Bool | Specifies if the disbursement is automatically performed when the contract is approved. |
| Max No Disbursements | No | Whole number | The maximum number of disbursements that can be configured for this product. |
| Is Guaranteed | Yes | Bool | <p>This checkbox marks the product as secured or unsecured.</p> <div> <p>NOTE</p> <p>The Collateral Cover Percent field appears when you select this checkbox.</p> </div> |
| Activation Tranches On Document Submission | No | Bool | Tranches to be granted after certain documents are submitted. |
| Allow Collateral Partial Release | No | Bool | 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. |
| Collateral Cover Percent | No | Whole number | The percent that the collateral person on the contract pays. It usually is over 100%. |
| Allow CoDebtor | No | Bool | Select if another debtor exists for this product. |

| Field | Required | Data Type | Details |
|-----------------------------|----------|------------|--|
| Allow Refinancing | No | Bool | Select if the account can be refinanced for this product. |
| Maximum Number of CoDebtors | No | Text | Set the maximum number of debtors possible for this product. |
| Interest Is Capitalized | No | Bool | 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. |
| Auto Rollover | No | Bool | <p>If the checkbox is selected, the contract is renewed at maturity date in exactly the same conditions.</p> <p>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.</p> |
| Allow Negotiated IR | No | Bool | Select if for this product the interest rate is negotiable. |
| Allow Top Ups | No | Bool | Select if the amount can be topped up with a sum of money. |
| Allow Withdrawals | No | Bool | Select if the customer can take out money for this product. |

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

1 Main Info2 Details3 Availability4 Dimensions5 Risk Formulas6 Test Risk Formulas7 Documents8 Associated Transactions9 History10 GL Settings

General Data

Bank Account Type

Current Account

Is Revolving

☐

Allow Overdraft

☐

Auto Disbursement

☐

Max No Disbursements

Is Guaranteed

☐

Allow Collateral Partial Release

☒

Allow CoDebtor

☐

Allow Refinancing

☐

Max No. Of CoDebtors

Interest Is Capitalized

☐

Interest Payment Type

Monthly

Auto Roll Over

☒

Allow negotiated IR

☐

Allow Top Ups

☒

Allow Withdraws

☒

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

| 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 |
|--|----------|------------|---|
| Repayment Allocation Method | Yes | Option set | The repayment allocation method represents the recovery order of amounts from repayment notifications. You can specify if charges should be recovered with priority or maybe interest or principal. You can also split order by number of days overdue. Select a repayment allocation method from the list. |
| Holiday Shift For Repayment Installments | Yes | Bool | <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 appears if you select this checkbox.</p> </div> |

| 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 last working day before the initially calculated due date. • Backward - the due date is shifted to the next working day after the initially calculated due date. <p>Default value: Forward.</p> |
| Defer Due Date | Yes | Bool | <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> |
| Grace Type | No | Option set | <p>Select one from the list:</p> <ul style="list-style-type: none"> • Both • Principle • Interest. |

| Field | Required | Data Type | Details |
|--------------------------|----------|--------------|--|
| Product Grace | No | Option set | Select one from the list. |
| Grace Days for Repayment | No | Whole number | Select one from the list. Insert the number of days for which the grace applies. |

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.

In the **Payment Schedule Types** section, you can insert or delete associated payment schedule types. To insert a new associated payment schedule type, click **Insert Existing** and select one of the existing types.

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

In the **Disbursement Matrix** section, create or insert existing disbursement tranches, 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. 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.

The **Product Destination Types** section allows for insertion or removal of existing destinations. 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.

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.

| NAME | SEARCH | PRODUCTS |
|--------------------------|----------------------|---------------------------|
| <input type="checkbox"/> | | |
| | <input type="text"/> | |
| | | Fixed Deposit Account VND |
| | | Fixed Deposit Account VND |
| | | Fixed Deposit Account VND |
| | | Fixed Deposit Account VND |
| | | Promissory Note |
| | | Promissory Note VND |
| | | Promissory Note VND |

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 Risk Formulas 6 Test Risk Formulas 7 Documents 8 Associated Transactions 9 History

Product Availability

Currency: EUR ↓

Period Type: Months ↓

Minimum Period: 12

Maximum Period: 120

Minimum Amount: 0

Maximum Amount: 1,000,000

Self Bank Account Associated With The Product

The following fields are available:

| Field | Required | Data Type | Details |
|----------------|----------|--------------|--|
| Currency | Yes | Option set | Choose the currency for this banking product. |
| Period Type | No | Option set | 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 selected in the Details tab. </div> |
| 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. |

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see "[Product Filter](#)" on page 386.

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

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. Click the **Insert** button to add a covenant to the product. You can select from 3 possible covenants:

- *Borrowers should perform tax obligations*: the lenders expect the borrowers to perform their tax obligations to both the business and towards their employees. This covenant is of type affirmative.
- *Lender can monitor borrower's current ratio*: the lender may continuously monitor the borrower's current ratio to ensure it stays relatively attractive and promising. This covenant is of type financial.
- *Lender possesses the right to prevent merges or acquisitions*: a clear stipulation that the lender possesses the right to prevent merges of acquisitions without proper notification or full knowledge of the process. This covenant is of type negative.

Each covenant can be attributed a value, an availability period, and a review frequency in months.

After all configurations are done, click the **Save and Reload** button.

Dimensions

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

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 > Banking Product Factory for Enterprise > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions

Click **Insert**. 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. |

| Field | Required | Data Type | Details |
|---------------|----------|-----------|---|
| Is Negotiable | No | Bool | 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** 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 386 . |
| 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 386 . |
| 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 bool for the values you wish to include in the filter. |

EDIT INTEREST & COMMISSION ITEM FILTER

INTEREST & COMMISSION ITEM FILTER

Filter:

OptionSet:

Description:

| Name | Display Name |
|--|--------------------------------|
| <input type="checkbox"/> High school | Baccalaureat |
| <input type="checkbox"/> No studies / Primary school | Fără studii sau școală primară |
| <input type="checkbox"/> Gymnasium studies | Gymnasium studies |
| <input type="checkbox"/> High school | High school |
| <input type="checkbox"/> Higher education | Licența universitară |
| <input type="checkbox"/> postgraduate | Master/MBA/EMBA/Dr. |
| <input type="checkbox"/> Postgraduate studies (MBA, MA, ACCA, CFA, etc.) | Master/MBA/EMBA/Dr. |

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

Insurance

For any banking product, you can select a pre-existing insurance or create a new one. To add a new one, 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

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. 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 | Bool | If you select this checkbox, the discount is calculated using the Banking Formula engine. |
| Is optional discount? | No | Bool | Selecting this checkbox results in the discount being applied only if the customer agrees to the discount. |
| Is percentage | No | Bool | 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

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:

Risk Formulas

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

In the **Banking Product Formula** 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 | No | Text | Enter an appropriate name. |
| Banking Product | No | Option set | The name of the banking product is inserted automatically. |
| Formula Type | Yes | Option set | Select the type of formula configured before, e.g. scoring /eligibility. |
| Formula | Yes | Option set | Select the previously configured formula. <div> IMPORTANT! The formula must be activated before attaching it to a product. </div> |

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

1 Definition **2 Input** **3 Output**

FORMULA PARAMETER MAPPING

Data Mapping Type: Formula

Master Entity: FTOS_BNKAP_RetailApplicantData

Operation Name: EligibilityForApplicant

Name: EligibilityForApplicant_EligibilityForApplicant_1602250301662_RetailMortgage

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

1 Definition **2 Input** **3 Output**

FTOS_BNKAP_RetailApplicantData - Input

- Age: Age
- Citizenship: Citizenship Id
- IsInAMLRiskList: false
- IsRetail: true
- MonthsActualJob: Employ Monts
- NetIncome: netIncome

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

1 Definition **2 Input** **3 Output**

FTOS_BNKAP_RetailApplicantData - Output

- KOAge: click to map
- KOIncome: click to map
- KOIsInAMLRiskList: click to map
- KOIsRetail: click to map
- KOMonthsActualJob: click to map
- KOCitizenship: click to map
- FinalResult: 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 Risk Formulas

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

Insert **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

TEST SCENARIO

Test Scenario Type

| Key | Value |
|-----|------------|
| 0 | 0 |
| 0 | Test value |
| 0 | Test value |
| 0 | Test value |
| 0 | 100 |
| 0 | 100 |
| 0 | 22.02 |

Save Output Data **Calculate**

TEST SCENARIO OUTPUTS

Save Output Data **Calculate**

No data

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**.

EDIT TEST SCENARIO

TEST SCENARIO

Test Scenario Type

| Key | Value |
|-----|------------|
| 0 | 0 |
| 0 | Test value |
| 0 | Test value |
| 0 | Test value |
| 0 | 100 |
| 0 | 100 |
| 0 | 22.02 |

Save Output Data **Calculate**

TEST SCENARIO OUTPUTS

Save Output Data **Calculate**

| Key | Value |
|-----|------------|
| 0 | 0 |
| 0 | Test value |
| 0 | Test value |
| 0 | Test value |
| 0 | 100 |
| 0 | 100 |
| 0 | 22.02 |

Documents

The **Documents** tab contains all the attached documents available for a product. The previously associated documents are displayed in the **Banking Product Documents** section.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Risk Formulas 6 Test Risk Formulas 7 **Documents** 8 Associated Transactions 9 History

Banking Product Document

+ Insert X Delete Export Refresh

| ReportId | Banking Copies No | Operation Code |
|--------------|-------------------|----------------|
| ACContractLG | 1 | |
| LoanContract | 2 | |

Banking Product Agreement

+ Insert X Delete Export Refresh

| Code |
|------|
| |

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 | Bool | Select if the document is mandatory. |
| Includes Debtor | Bool | Select if the document includes the debtor. |
| Includes Coborrower | Bool | Select if the document includes the co-borrower. |
| Requires Signature | Bool | Select if the document requires to be signed. |
| Is accord | Bool | Select if the document represents the accord. |

ADD BANKING PRODUCT DOCUMENT

Banking Product Document

Operation Code: 113559 Banking Copies No: 2 Report: Document Type: Credit Application

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.

The agreements that a customer needs to go through are displayed in the **Banking Products Agreement** 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 | Bool | Select if the agreement is mandatory for the product. |

ADD BANKING PRODUCT AGREEMENT

BANKING PRODUCT AGREEMENT

Agreement Banking Product

Code 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](#).

Associated Transactions

Transactions types that are performed to and from a banking product are displayed in the **Associated Transactions** tab.

For each banking product, you must select a bank account to be used for transactions. Next to the **Self Bank Account For Transactions** 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.

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

| Field | Required | Data Type | Details |
|------------------------------|----------|------------|--|
| Transactions Operations Type | Yes | Option set | <p>This field makes the connection with the transaction motor of bank accounts. Select one of the methods defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div> |
| Is Automatic Transaction | Yes | Bool | This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations. |
| Is System Transactions | No | Bool | 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. |
| Name | Yes | Text | Name of the transaction type. |
| Transaction Code | Yes | Text | The code of the transaction type. |
| Generates Accounting Entry | Yes | Bool | This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity. |

| Field | Required | Data Type | Details |
|-------------------------------|----------|------------|---|
| Source Entity ID | Yes | Option set | The ID of the entity referenced by the accounting systems. |
| Generate New Contract Version | No | Bool | This checkbox allows you to specify if a new contract version should be generated by this transaction type. |
| Commission Type | No | Lookup | The transaction type for which this transaction type is applicable. |

The screenshot shows the 'Associated Transactions' tab in the Banking Product Factory. At the top, there is a breadcrumb trail with 10 steps: 1 Main Info, 2 Details, 3 Availability, 4 Dimensions, 5 Risk Formulas, 6 Test Risk Formulas, 7 Documents, 8 Associated Transactions (active), 9 History, and 10 GL Settings. Below the breadcrumb, the title 'Self Bank Account Associated With The Product' is displayed. A search bar contains the text 'Self Bank Account For Transactions' and a dropdown menu shows 'NOTEXISTING-01'. Under the 'TRANSACTION TYPES' section, there are buttons for '+ Insert existing' and 'X Remove existing'. A table lists transaction types with a search icon in the first row:

| Name |
|-------------------------|
| Accruals and Provisions |
| Disbursement |
| Early Repayment |
| Payment Holiday |
| Repayment |
| Repayment Notification |
| Reschedule Overdues |

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 415](#)).

GL Settings

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.

BANKING PRODUCT GL ACCOUNTS

| <input type="button" value="+ Insert"/> <input type="button" value="X Delete"/> <input type="button" value="Export"/> <input type="button" value="Refresh"/> | | | | |
|--|-------------------|------------------|----------------|------------------------|
| Product | Accounting System | Accounting Scope | Item | GL Account |
| TestPack | 0001 | FinDeposit | 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:

ADD BANKING PRODUCT GL ACCOUNT

BANKING PRODUCT GL ACCOUNT

Product: Card Blue

Accounting System: 0001

Accounting Scope: CurrentAccount

Item: Front-end Fee

GL Account: 20111 Discount

| 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.

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 in Developer mode.
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="checkbox"/> | AG_OD | Overdraft BankAccoun... | | | | | Approved | 1 |
| <input type="checkbox"/> | SCADENTAR | TEST_SCADENTAR_SIM... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | TLEHFW | TL_EUR Holiday Shift F... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | th | th | | | | | Approved | 1 |
| <input type="checkbox"/> | TEST Laura | DD Current Account V... | Corporate | Bank Account | Current Account | | Approved | 1 |
| <input type="checkbox"/> | TestA | Duplicate - 4 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | 3456 | Card_And | Corporate | Bank Account | Deposit | Fix Deposit Collateral | Unapproved | 1 |
| <input type="checkbox"/> | testcancel | Duplicate - 5 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | OL VND | Corporate Term Loan ... | Corporate | Loan Term | Loan Term Secured | | Approved | 1 |
| <input type="checkbox"/> | LoanEURPHF | LoanEURPHfee | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |

In 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.

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. [Risk Formulas](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Test Risk Formulas](#) - Use this tab to test the formula attached above before displaying it in a digital journey.
7. [Documents](#) - This tab contains all the attached documents available for a product.
8. [Associated Transactions](#) - Transactions that are done to and from a banking product are found in this tab.
9. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
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, image and features.

The following fields are available:

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

| Field | Required | Data Type | Details |
|--------------------|----------|------------|---|
| Class | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subclass | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Category | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subcategory | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Start Date | Yes | Date | The date when the product becomes available. |
| End Date | Yes | Date | The last date from when the product is available. From that date forward, the product is no longer available. |
| Benefits | No | Text area | Insert the advantages of owning the banking product. You can format the text in the text editor window. |
| Description | No | Text area | Write any description or additional text here. |
| Product Image | No | File | Insert an image representative for the product. |
| Document | No | File | Insert the document representative for the product. |
| 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.

The screenshot shows the 'Main Information' tab of the Banking Product Factory interface. The form contains the following fields:

- Product Type:** CreditCard
- External Code:** (empty)
- Banking Product Code:** TST
- Name:** CreditCard
- Class:** Corporate
- SubClass:** (empty)
- Category:** (empty)
- SubCategory:** (empty)
- Start Date:** 10/03/2021
- End Date:** 22/03/2021
- Benefits:** A rich text editor with a toolbar.
- Description:** A text area.

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

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 |
|-----------------|----------|------------|---|
| Banking Product | No | Option set | Choose the name of the product. |
| Is main feature | No | Bool | Select the checkbox if it is the major feature. |
| Feature | No | Text | The name of the feature. |

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

In the **Product Classifications** 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, or create a new one by clicking **Insert** and filling in the following fields:

| 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. |

The **Contract Classifications Section** is displayed after saving the classification item record and allows you to insert existing contracts. The following information is displayed here:

| Field | Details |
|---------------------|--|
| Contract | The number of the contract using this classification. |
| Code | The code of the classification item. |
| Name | The name of the classification item. |
| Classification Type | The type of the classification. |
| Valid From | The date from which the classification item is valid. |
| Valid To | The date until which the classification item is valid. |

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 |
|-------------------|----------|------------|---|
| Bank Account Type | Yes | Option set | Choose one from the following: <ul style="list-style-type: none"> • Current Account • Savings Account • Fixed Deposit Account • Term Deposit Account • Loan Term Account. |
| Is Revolving | No | Bool | Allows a business to borrow money as needed for funding working capital needs and continuing operations such as meeting payroll and payables. |

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

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

| 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> |
| Capital Percent (%) | No | Numeric | Enter the percent of capital that must be paid back on the selected periodicity type basis. |

| Field | Required | Data Type | Details |
|--|----------|------------|---|
| Repayment Allocation Method | Yes | Option set | The repayment allocation method represents the recovery order of amounts from repayment notifications. You can specify if charges should be recovered with priority or maybe interest or principal. You can also split order by number of days overdue. Select a repayment allocation method from the list. |
| Holiday Shift For Repayment Installments | Yes | Bool | <p>This checkbox marks if the holidays are considered for the calculation of the maturity schedule.</p> <div> <p>NOTE The Country Calendars section appears if you select this checkbox.</p> </div> |

| 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 last working day before the initially calculated due date. • Backward - the due date is shifted to the next working day after the initially calculated due date. <p>Default value: Forward.</p> |
| Defer Due Date | Yes | Bool | <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> |
| Grace Type | No | Option set | <p>Select one from the list:</p> <ul style="list-style-type: none"> • Both • Principle • Interest. |

| Field | Required | Data Type | Details |
|--------------------------|----------|--------------|--|
| Product Grace | No | Option set | Select one from the list. |
| Grace Days for Repayment | No | Whole number | Select one from the list. Insert the number of days for which the grace applies. |

In the **Payment Schedule Types** section, you can insert or create a payment schedule for the leasing product. To insert a new associated payment schedule type, click **Insert Existing** and select one of the existing types. Go to ["Payment Schedule Types" on page 397](#) to read more about this.

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

The **Product Destination Types** section allows for insertion or removal of existing destinations. 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.

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.

CURRENT STATUS: APPROVED NEXT STATUS: CLOSED CODE: CA VND PRODUCT: Current Account VND START DATE: 01/01/2020 END DATE: 31/03/2025 VERSION: 1 VERSION DATE: 27/03/2020 02:00

Associated Products

☐ Name
 Search:

| |
|---------------------------|
| Fixed Deposit Account VND |
| Fixed Deposit Account VND |
| Fixed Deposit Account VND |
| Fixed Deposit Account VND |
| Promissory Note |
| Promissory Note VND |
| Promissory Note VND |

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 |
|----------|----------|------------|---|
| Currency | Yes | Option set | Choose the currency for this banking product. |

| Field | Required | Data Type | Details |
|----------------|----------|--------------|---|
| Period Type | No | Option set | <p>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 selected in the Details tab. </div> |
| 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. |

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see ["Product Filter" on page 386](#).

Availability Rules

PRODUCT AVAILABILITY ITEM FILTERS

| | |
|--------------------------|--|
| <input type="checkbox"/> | Description |
| <input type="checkbox"/> | Account is in Persona = Customers with age between 25-35 |
| <input type="checkbox"/> | Age == 25 - 35 |
| <input type="checkbox"/> | DefaultValue = 2020-08-17 |

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.

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 > Banking Product Factory for Enterprise > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions

Click **Insert**. 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. |

| Field | Required | Data Type | Details |
|---------------------------|----------|------------|---|
| 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 | Bool | 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** 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 386 . |
| 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 386 . |
| 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 bool for the values you wish to include in the filter. |

EDIT INTEREST & COMMISSION ITEM FILTER

INTEREST & COMMISSION ITEM FILTER

Filter:

OptionSet:

Description:

| Name | Display Name |
|--|--------------------------------|
| <input checked="" type="checkbox"/> highschool | Bacalaureat |
| <input checked="" type="checkbox"/> No studies / Primary school | Fara studii sau scoala primara |
| <input checked="" type="checkbox"/> Gymnasium studies | Gymnasium studies |
| <input checked="" type="checkbox"/> High school | High school |
| <input checked="" type="checkbox"/> Higher education | Licenta |
| <input type="checkbox"/> higher education | Licenta universitara |
| <input type="checkbox"/> postgraduate | Master/MBA/EMBA/Dr. |
| <input type="checkbox"/> Postgraduate studies (MBA, MA, ACCA, CPA, etc.) | Master/MBA/EMBA/Dr. |

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

Insurance

For any banking product, you can select a pre-existing insurance or create a new one. To add a new one, 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

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. 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 | Bool | If you select this checkbox, the discount is calculated using the Banking Formula engine. |
| Is optional discount? | No | Bool | Selecting this checkbox results in the discount being applied only if the customer agrees to the discount. |
| Is percentage | No | Bool | 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

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

Risk Formulas

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

In the **Banking Product Formula** 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 | No | Text | Enter an appropriate name. |
| Banking Product | No | Option set | The name of the banking product is inserted automatically. |
| Formula Type | Yes | Option set | Select the type of formula configured before, e.g. scoring /eligibility. |
| Formula | Yes | Option set | Select the previously configured formula. <div> IMPORTANT! The formula must be activated before attaching it to a product. </div> |

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

1 Definition **2 Input** **3 Output**

FORMULA PARAMETER MAPPING

Data Mapping Type: Formula

Master Entity: FTOS_BNKAP_RetailApplicantData

Operation Name: EligibilityForApplicant

Name: EligibilityForApplicant_EligibilityForApplicant_1602250301662_RetailMortgage

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

1 Definition **2 Input** **3 Output**

FTOS_BNKAP_RetailApplicantData - Input

- Age: Age
- Citizenship: Citizenship Id
- IsInAMLRiskList: false
- IsRetail: true
- MonthsActualJob: Employ Monts
- NetIncome: netIncome

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

1 Definition **2 Input** **3 Output**

FTOS_BNKAP_RetailApplicantData - Output

- KOAge: click to map
- KOIncome: click to map
- KOIsInAMLRiskList: click to map
- KOIsRetail: click to map
- KOMonthsActualJob: click to map
- KOCitizenship: click to map
- FinalResult: 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? € [none]

ARE YOU MARRIED? [none]

EDUCATION LEVEL: [none]

PAYING MONTHLY FOR OTHER LOANS: € [none]

NUMBER OF CHILDREN: 0

EMPLOYMENT STATUS: [none]

TOTAL CREDIT CARDS LIMITS: € [none]

CHILDCARE AND EDUCATION COSTS: € [none]

EMPLOYMENT MONTHS: [none]

OTHER SPENDINGS: € [none]

HOW MANY FINANCIAL DEPENDANTS: 0

YOUR RESIDENCE IS: [none]

LIFE, HEALTH INSURANCE AND PRIVATE PENSIONS: [none]

MAINTENANCE FOR DEPENDANTS: [none]

YOUR RENT IS: [none]

Test Risk Formulas

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

Insert **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

TEST SCENARIO

Test Scenario Type

| Key | Value |
|-----|------------|
| 0 | 0 |
| 0 | Test value |
| 0 | Test value |
| 0 | Test value |
| 0 | 100 |
| 0 | 100 |
| 0 | 22.02 |

Save Output Data **Calculate**

TEST SCENARIO OUTPUTS

Save Output Data **Calculate**

No data

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**.

EDIT TEST SCENARIO

TEST SCENARIO

Test Scenario Type

| Key | Value |
|-----|------------|
| 0 | 0 |
| 0 | Test value |
| 0 | Test value |
| 0 | Test value |
| 0 | 100 |
| 0 | 100 |
| 0 | 22.02 |

Save Output Data **Calculate**

TEST SCENARIO OUTPUTS

Save Output Data **Calculate**

No data

Documents

The **Documents** tab contains all the attached documents available for a product. The previously associated documents are displayed in the **Banking Product Documents** section.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Risk Formulas 6 Test Risk Formulas 7 **Documents** 8 Associated Transactions 9 History

Banking Product Document

+ Insert X Delete Export Refresh

| ReportId | Banking Copies No | Operation Code |
|--------------|-------------------|----------------|
| ACContractLG | 1 | |
| LoanContract | 2 | |

Banking Product Agreement

+ Insert X Delete Export Refresh

| Code |
|------|
| |

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 | Bool | Select if the document is mandatory. |
| Includes Debtor | Bool | Select if the document includes the debtor. |
| Includes Coborrower | Bool | Select if the document includes the co-borrower. |
| Requires Signature | Bool | Select if the document requires to be signed. |
| Is accord | Bool | Select if the document represents the accord. |

ADD BANKING PRODUCT DOCUMENT

Banking Product Document

Operation Code: 113559 Banking Copies No: 2 Report: Document Type: Credit Application

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.

The agreements that a customer needs to go through are displayed in the **Banking Products Agreement** 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 | Bool | Select if the agreement is mandatory for the product. |

ADD BANKING PRODUCT AGREEMENT

BANKING PRODUCT AGREEMENT

Agreement Banking Product

Code 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](#).

Associated Transactions

Transactions types that are performed to and from a banking product are displayed in the **Associated Transactions** tab.

For each banking product, you must select a bank account to be used for transactions. Next to the **Self Bank Account For Transactions** 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.

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

| Field | Required | Data Type | Details |
|------------------------------|----------|------------|--|
| Transactions Operations Type | Yes | Option set | <p>This field makes the connection with the transaction motor of bank accounts. Select one of the methods defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div> |
| Is Automatic Transaction | Yes | Bool | This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations. |
| Is System Transactions | No | Bool | 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. |
| Name | Yes | Text | Name of the transaction type. |
| Transaction Code | Yes | Text | The code of the transaction type. |
| Generates Accounting Entry | Yes | Bool | This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity. |

| Field | Required | Data Type | Details |
|-------------------------------|----------|------------|---|
| Source Entity ID | Yes | Option set | The ID of the entity referenced by the accounting systems. |
| Generate New Contract Version | No | Bool | This checkbox allows you to specify if a new contract version should be generated by this transaction type. |
| Commission Type | No | Lookup | The transaction type for which this transaction type is applicable. |

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 415](#)).

GL Settings

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.

BANKING PRODUCT GL ACCOUNTS

| <input type="button" value="+ Insert"/> <input type="button" value="X Delete"/> <input type="button" value="Export"/> <input type="button" value="Refresh"/> | | | | |
|--|-------------------|------------------|----------------|------------------------|
| Product | Accounting System | Accounting Scope | Item | GL Account |
| TestPack | 0001 | FinDeposit | 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:

ADD BANKING PRODUCT GL ACCOUNT

BANKING PRODUCT GL ACCOUNT

Product: Card Blue

Accounting System: 0001

Accounting Scope: CurrentAccount

Item: Front-end Fee

GL Account: 20111 Discount

| 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.

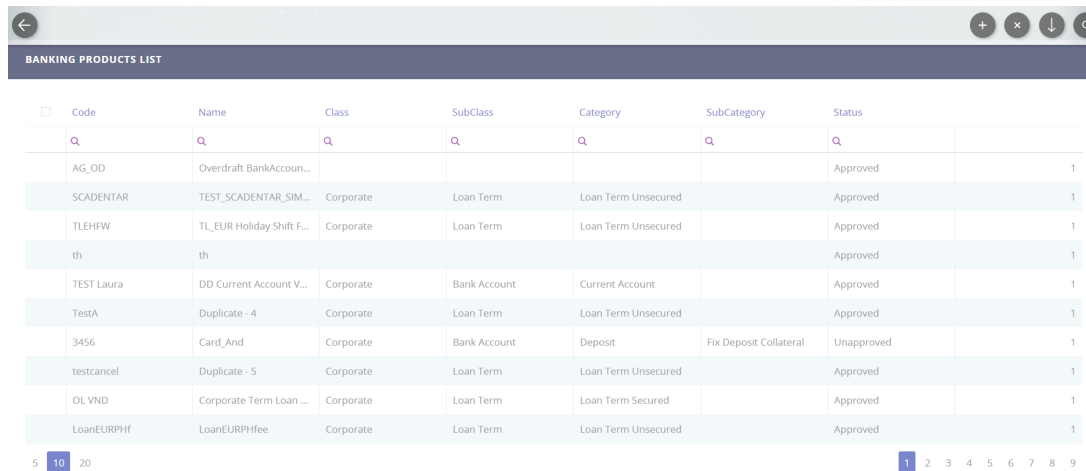
Deposits

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 in Developer mode.
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 | |
|------------|---------------------------|-----------|--------------|---------------------|------------------------|------------|---|
| AG_OD | Overdraft BankAccoun... | | | | | Approved | 1 |
| SCADENTAR | TEST_SCADENTAR_SIM... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| TLHFHW | TL_EUR Holiday Shift F... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| th | th | | | | | Approved | 1 |
| TEST Laura | DD Current Account V... | Corporate | Bank Account | Current Account | | Approved | 1 |
| TestA | Duplicate - 4 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| 3456 | Card_And | Corporate | Bank Account | Deposit | Fix Deposit Collateral | Unapproved | 1 |
| testcancel | Duplicate - 5 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| OL VND | Corporate Term Loan ... | Corporate | Loan Term | Loan Term Secured | | Approved | 1 |
| LoanEURPHF | LoanEURPHfee | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |

In 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.

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. [Risk Formulas](#) - In this tab, you can attach a formula that triggers calculations to determine the eligibility of a customer, for example.
6. [Test Risk Formulas](#) - Use this tab to test the formula attached above before displaying it in a digital journey.
7. [Documents](#) - This tab contains all the attached documents available for a product.
8. [Associated Transactions](#) - Transactions that are done to and from a banking product are found in this tab.
9. [History](#) - The last tab displays the versions of the product, along with workflow status and the user who modified the product.
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, image and features.

The following fields are available:

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

| Field | Required | Data Type | Details |
|--------------------|----------|------------|---|
| Class | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subclass | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Category | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subcategory | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Start Date | Yes | Date | The date when the product becomes available. |
| End Date | Yes | Date | The last date from when the product is available. From that date forward, the product is no longer available. |
| Benefits | No | Text area | Insert the advantages of owning the banking product. You can format the text in the text editor window. |
| Description | No | Text area | Write any description or additional text here. |
| Product Image | No | File | Insert an image representative for the product. |
| Document | No | File | Insert the document representative for the product. |
| 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.

IMPORTANT! For deposits, select Product Type = **Deposit**.

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 |
|-----------------|----------|------------|---|
| Banking Product | No | Option set | Choose the name of the product. |
| Is main feature | No | Bool | Select the checkbox if it is the major feature. |
| Feature | No | Text | The name of the feature. |

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

In the **Product Classifications** 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, or create a new one by clicking **Insert** and filling in the following fields:

| 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. |

| Field | Details |
|-------------|---|
| 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. |

The **Contract Classifications Section** is displayed after saving the classification item record and allows you to insert existing contracts. The following information is displayed here:

| Field | Details |
|---------------------|--|
| Contract | The number of the contract using this classification. |
| Code | The code of the classification item. |
| Name | The name of the classification item. |
| Classification Type | The type of the classification. |
| Valid From | The date from which the classification item is valid. |
| Valid To | The date until which the classification item is valid. |

Details

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

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

| Field | Required | Data Type | Details |
|-------------------|----------|------------|--|
| Bank Account Type | Yes | Option set | <p>Choose one from the following:</p> <ul style="list-style-type: none"> • Current Account • Savings Account • Fix Deposit Account • Term Deposit Account • Loan Term Account. <p>Each bank account type have different configuration and behavior, but these won't be impacted by the values selected in the bank account type list. This information is useful in grouping the bank accounts and for Operational Ledger records. The products that have the Product Type field set to Fix Deposit Account can be registered in the collateral register in order to become a guarantee for a secured loan banking product.</p> |
| Is Revolving | No | Bool | Allows a business to borrow money as needed for funding working capital needs and continuing operations such as meeting payroll and payables. |
| Auto Disbursement | Yes | Bool | Specifies if the disbursement is automatically performed when the contract is approved. |

| Field | Required | Data Type | Details |
|----------------------------------|----------|--------------|---|
| Max No Disbursements | No | Whole number | The maximum number of disbursements that can be configured for this product. |
| Is Guaranteed | Yes | Bool | <p>This checkbox marks the product as secured or unsecured.</p> <div> <p>NOTE</p> <p>The Collateral Cover Percent field appears when you select this checkbox.</p> </div> |
| Allow Collateral Partial Release | No | Bool | 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. |
| Collateral Cover Percent | No | Whole number | The percent that the collateral person on the contract pays. It usually is over 100%. |
| Allow CoDebtor | No | Bool | Select if another debtor exists for this product. |
| Allow Refinancing | No | Bool | Select if the account can be refinanced for this product. |
| Maximum Number of CoDebtors | No | Text | Set the maximum number of debtors possible for this product. |

| Field | Required | Data Type | Details |
|-------------------------|----------|------------|---|
| Interest Is Capitalized | No | Bool | <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 | 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. |

| Field | Required | Data Type | Details |
|---------------|----------|-----------|--|
| Auto Rollover | No | Bool | <p>If the checkbox is selected, the contract is renewed at maturity date in exactly the same conditions.</p> <p>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.</p> |

| Field | Required | Data Type | Details |
|---------------------|----------|-----------|---|
| Allow Negotiated IR | No | Bool | <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 configured on the banking product, but the value is read-only and cannot be changed. |

| Field | Required | Data Type | Details |
|---------------|----------|-----------|--|
| Allow Top Ups | No | Bool | <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 date, plus the interest for the full amount (initial amount + top up amount) proportional from top up to payment |

| Field | Required | Data Type | Details |
|-------|----------|-----------|--|
| | | | <p>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 | Bool | <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 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 |

| Field | Required | Data Type | Details |
|-------|----------|-----------|--|
| | | | maturity date, the customer has to liquidate the deposit. In this case the interest is not paid. |

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

1 Main Info2 Details3 Availability4 Dimensions5 Risk Formulas6 Test Risk Formulas7 Documents8 Associated Transactions9 History10 GL Settings

General Data

Bank Account Type

Term Deposit Account

Is Revolving

☐

Auto Disbursement

☒

Max No Disbursements

Is Guaranteed

☐

Allow Collateral Partial Release

☐

Allow CoDebtor

☐

Allow Refinancing

☐

Max No. Of CoDebtors

Interest Is Capitalized

☒

Interest Payment Type

Monthly

Auto Roll Over

☒

Allow negotiated IR

☐

Allow Top Ups

☐

Allow Withdraws

☐

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

| 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 |
|--|----------|------------|---|
| Repayment Allocation Method | Yes | Option set | The repayment allocation method represents the recovery order of amounts from repayment notifications. You can specify if charges should be recovered with priority or maybe interest or principal. You can also split order by number of days overdue. Select a repayment allocation method from the list. |
| Holiday Shift For Repayment Installments | Yes | Bool | <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 appears if you select this checkbox.</p> </div> |

| 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 last working day before the initially calculated due date. • Backward - the due date is shifted to the next working day after the initially calculated due date. <p>Default value: Forward.</p> |
| Defer Due Date | Yes | Bool | <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 |
|--------------------------|----------|--------------|--|
| Grace Type | No | Option set | If you wish to grant a grace period for the product, select the applicable type of grace from the list: <ul style="list-style-type: none"> • Both • Principle • Interest. |
| Product Grace | No | Option set | Select one from the list. |
| Grace Days for Repayment | No | Whole number | Insert the number of days for which the grace period applies. |

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.

In the **Payment Schedule Types** section, you can insert or delete associated payment schedule types. To insert a new associated payment schedule type, click **Insert Existing** and select one of the existing types.

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

In the **Disbursement Matrix** section, create or insert existing disbursement tranches, 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. 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.

The **Product Destination Types** section allows for insertion or removal of existing destinations. 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.

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.

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 Risk Formulas 6 Test Risk Formulas 7 Documents 8 Associated Transactions 9 History

Product Availability

Currency: EUR ↓

Period Type: Months ↓

Minimum Period: 12

Maximum Period: 120

Minimum Amount: 0

Maximum Amount: 1,000,000

Self Bank Account Associated With The Product

The following fields are available:

| Field | Required | Data Type | Details |
|----------------|----------|--------------|--|
| Currency | Yes | Option set | Choose the currency for this banking product. |
| Period Type | No | Option set | 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 selected in the Details tab. </div> |
| 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. |

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see "[Product Filter](#)" on page 386.

Availability Rules

PRODUCT AVAILABILITY ITEM FILTERS

| Description | Account | Age | DateValue |
|--|----------------|------------------------|-----------|
| Account is in Persona - Customers with age between 25-35 | Age <= 25 - 35 | DateValue = 2020-08-17 | |

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

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. Click the **Insert** button to add a covenant to the product. You can select from 3 possible covenants:

- *Borrowers should perform tax obligations*: the lenders expect the borrowers to perform their tax obligations to both the business and towards their employees. This covenant is of type affirmative.
- *Lender can monitor borrower's current ratio*: the lender may continuously monitor the borrower's current ratio to ensure it stays relatively attractive and promising. This covenant is of type financial.
- *Lender posses the right to prevent merges or acquisitions*: a clear stipulation that the lender possesses the right to prevent merges of acquisitions without proper notification or full knowledge of the process. This covenant is of type negative.

Each covenant can be attributed a value, an availability period, and a review frequency in months.

After all configurations are done, click the **Save and Reload** button.

Dimensions

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

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 > Banking Product Factory for Enterprise > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions

Click **Insert**. 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. |

| Field | Required | Data Type | Details |
|---------------|----------|-----------|---|
| Is Negotiable | No | Bool | 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** 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 386 . |
| 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 386 . |
| 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 bool for the values you wish to include in the filter. |

EDIT INTEREST & COMMISSION ITEM FILTER

INTEREST & COMMISSION ITEM FILTER

Filter:

OptionSet:

Description:

| Name | Display Name |
|--|--------------------------------|
| <input type="checkbox"/> High school | Baccalaureat |
| <input type="checkbox"/> No studies / Primary school | Fără studii sau școală primară |
| <input type="checkbox"/> Gymnasium studies | Gymnasium studies |
| <input type="checkbox"/> High school | High school |
| <input type="checkbox"/> Higher education | Licența universitară |
| <input type="checkbox"/> postgraduate | Master/MBA/EMBA/Dr. |
| <input type="checkbox"/> Postgraduate studies (MBA, MA, ACCA, CFA, etc.) | Master/MBA/EMBA/Dr. |

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

Insurance

For any banking product, you can select a pre-existing insurance or create a new one. To add a new one, 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

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. 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 | Bool | If you select this checkbox, the discount is calculated using the Banking Formula engine. |
| Is optional discount? | No | Bool | Selecting this checkbox results in the discount being applied only if the customer agrees to the discount. |
| Is percentage | No | Bool | 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

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:

Risk Formulas

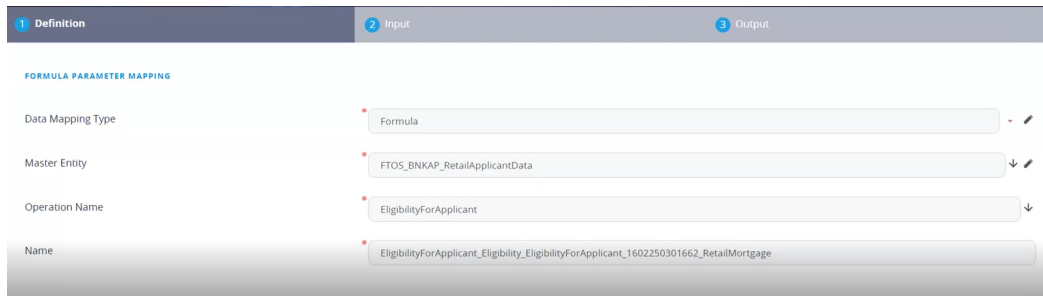
The **Risk Formulas** tab keeps formulas built with [Formula Engine](#) for the banking product. Such formulas can be used to determine the eligibility of a customer.

In the **Banking Product Formula** 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 | No | Text | Enter an appropriate name. |
| Banking Product | No | Option set | The name of the banking product is inserted automatically. |
| Formula Type | Yes | Option set | Select the type of formula configured before, e.g. scoring /eligibility. |
| Formula | Yes | Option set | Select the previously configured formula. <div> IMPORTANT! The formula must be activated before attaching it to a product. </div> |

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



1 Definition **2 Input** **3 Output**

FORMULA PARAMETER MAPPING

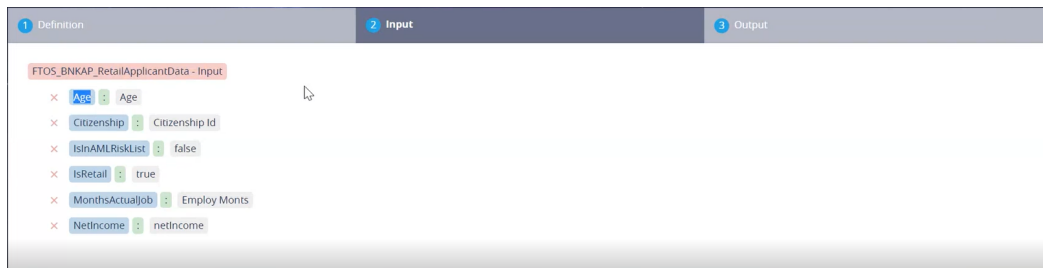
Data Mapping Type: Formula

Master Entity: FTOS_BNKAP_RetailApplicantData

Operation Name: EligibilityForApplicant

Name: EligibilityForApplicant_EligibilityForApplicant_1602250301662_RetailMortgage

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

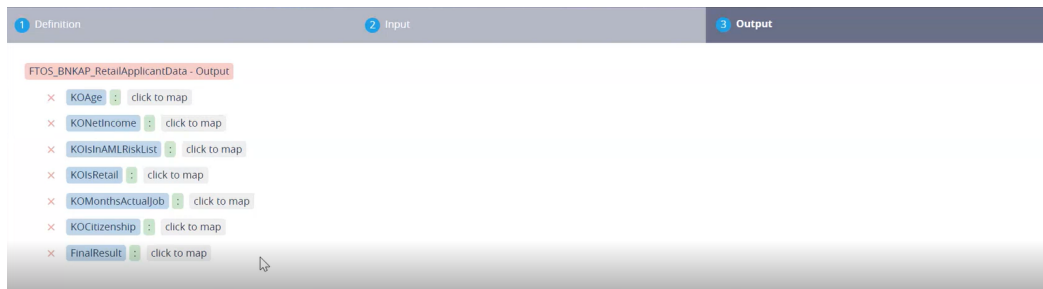


1 Definition **2 Input** **3 Output**

FTOS_BNKAP_RetailApplicantData - Input

- Age: Age
- Citizenship: Citizenship Id
- IsInAMLRiskList: false
- IsRetail: true
- MonthsActualJob: Employ Monts
- NetIncome: netIncome

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



1 Definition **2 Input** **3 Output**

FTOS_BNKAP_RetailApplicantData - Output

- KOAge: click to map
- KOIncome: click to map
- KOIsInAMLRiskList: click to map
- KOIsRetail: click to map
- KOMonthsActualJob: click to map
- KOCitizenship: click to map
- FinalResult: 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 Risk Formulas

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

Insert **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

TEST SCENARIO

Test Scenario Type

| Key | Value |
|------------|------------|
| Pay | 0 |
| Salary | Test value |
| Employment | Test value |
| Income | Test value |
| Income | 100 |
| Income | 100 |
| Income | 22.00 |

Save Output Data **Calculate**

TEST SCENARIO OUTPUTS

Save Output Data **Calculate**

No data

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**.

EDIT TEST SCENARIO

TEST SCENARIO OUTPUTS

Save Output Data **Calculate**

| Name | Value |
|----------------|------------|
| Corporate Loan | 1000000.00 |
| Personal Loan | 100000.00 |

Documents

The **Documents** tab contains all the attached documents available for a product. The previously associated documents are displayed in the **Banking Product Documents** section.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Risk Formulas 6 Test Risk Formulas 7 **Documents** 8 Associated Transactions 9 History

Banking Product Document

+ Insert X Delete Export Refresh

| ReportId | Banking Copies No | Operation Code |
|--------------|-------------------|----------------|
| ACContractLG | 1 | |
| LoanContract | 2 | |

Banking Product Agreement

+ Insert X Delete Export Refresh

| Code |
|------|
| |

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 | Bool | Select if the document is mandatory. |
| Includes Debtor | Bool | Select if the document includes the debtor. |
| Includes Coborrower | Bool | Select if the document includes the co-borrower. |
| Requires Signature | Bool | Select if the document requires to be signed. |
| Is accord | Bool | Select if the document represents the accord. |

ADD BANKING PRODUCT DOCUMENT

Banking Product Document

Operation Code: 113559 Banking Copies No: 2 Report: Document Type: Credit Application

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.

The agreements that a customer needs to go through are displayed in the **Banking Products Agreement** 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 | Bool | Select if the agreement is mandatory for the product. |

ADD BANKING PRODUCT AGREEMENT

BANKING PRODUCT AGREEMENT

Agreement Banking Product

Code 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](#).

Associated Transactions

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.

Transactions types that are performed to and from a banking product are displayed in the **Associated Transactions** tab.

For each banking product, you must select a bank account to be used for transactions. Next to the **Self Bank Account For Transactions** 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.

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

| Field | Required | Data Type | Details |
|------------------------------|----------|------------|--|
| Transactions Operations Type | Yes | Option set | <p>This field makes the connection with the transaction motor of bank accounts. Select one of the methods defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div> |
| Is Automatic Transaction | Yes | Bool | <p>This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations.</p> |

| Field | Required | Data Type | Details |
|-------------------------------|----------|------------|--|
| Is System Transactions | No | Bool | 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. |
| Name | Yes | Text | Name of the transaction type. |
| Transaction Code | Yes | Text | The code of the transaction type. |
| Generates Accounting Entry | Yes | Bool | This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity. |
| Source Entity ID | Yes | Option set | The ID of the entity referenced by the accounting systems. |
| Generate New Contract Version | No | Bool | This checkbox allows you to specify if a new contract version should be generated by this transaction type. |
| Commission Type | No | Lookup | The transaction type for which this transaction type is applicable. |

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Risk Formulas 6 Test Risk Formulas 7 Documents 8 **Associated Transactions** 9 History 10 GL Settings

Self Bank Account Associated With The Product

Self Bank Account For Transactions NOTEXISTING-01

TRANSACTION TYPES

+ Insert existing X Remove existing

| | |
|--------------------------|-------------------------|
| <input type="checkbox"/> | Name |
| <input type="checkbox"/> | Accruals and Provisions |
| <input type="checkbox"/> | Disbursement |
| <input type="checkbox"/> | Early Repayment |
| <input type="checkbox"/> | Payment Holiday |
| <input type="checkbox"/> | Repayment |
| <input type="checkbox"/> | Repayment Notification |
| <input type="checkbox"/> | Reschedule Overdues |

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 415](#)).

GL Settings

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.

BANKING PRODUCT GL ACCOUNTS

[+ Insert](#) [X Delete](#) [■ Export](#) [🔄 Refresh](#)

| <input type="checkbox"/> | Product | Accounting System | Accounting Scope | Item | GL Account |
|--------------------------|----------------------|----------------------|----------------------|----------------------|------------------------|
| | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| | TestPack | 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:

ADD BANKING PRODUCT GL ACCOUNT

BANKING PRODUCT GL ACCOUNT

Product: Accounting System:

Accounting Scope: Item: GL Account:

| 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. |
| 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 in Developer mode.
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="checkbox"/> | AG_OD | Overdraft BankAccount... | | | | | Approved | 1 |
| <input type="checkbox"/> | SCADENTAR | TEST_SCADENTAR_SIM... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | TLHFW | TL_EUR Holiday Shift F... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | th | th | | | | | Approved | 1 |
| <input type="checkbox"/> | TEST Laura | DD Current Account V... | Corporate | Bank Account | Current Account | | Approved | 1 |
| <input type="checkbox"/> | TestA | Duplicate - 4 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | 3456 | Card_And | Corporate | Bank Account | Deposit | Fix Deposit Collateral | Unapproved | 1 |
| <input type="checkbox"/> | testcancel | Duplicate - 5 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | OLVND | Corporate Term Loan ... | Corporate | Loan Term | Loan Term Secured | | Approved | 1 |
| <input type="checkbox"/> | LoanEURPHF | LoanEURPHfee | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |

In 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.

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. [Risk Formulas](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Test Risk Formulas](#) - Use this tab to test the formula attached above before displaying it in a digital journey.
7. [Documents](#) - This tab contains all the attached documents available for a product.
8. [Associated Transactions](#) - Transactions that are done to and from a banking product are found in this tab.
9. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
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, image and features.

The following fields are available:

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

| Field | Required | Data Type | Details |
|--------------------|----------|------------|---|
| Class | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subclass | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Category | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subcategory | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Start Date | Yes | Date | The date when the product becomes available. |
| End Date | Yes | Date | The last date from when the product is available. From that date forward, the product is no longer available. |
| Benefits | No | Text area | Insert the advantages of owning the banking product. You can format the text in the text editor window. |
| Description | No | Text area | Write any description or additional text here. |
| Product Image | No | File | Insert an image representative for the product. |
| Document | No | File | Insert the document representative for the product. |
| 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.

IMPORTANT! For leasings, select Product Type = **Leasing**.

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 |
|-----------------|----------|------------|---|
| Banking Product | No | Option set | Choose the name of the product. |
| Is main feature | No | Bool | Select the checkbox if it is the major feature. |
| Feature | No | Text | The name of the feature. |

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

In the **Product Classifications** 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, or create a new one by clicking **Insert** and filling in the following fields:

| 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. |

| Field | Details |
|-------------|---|
| 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. |

The **Contract Classifications Section** is displayed after saving the classification item record and allows you to insert existing contracts. The following information is displayed here:

| Field | Details |
|---------------------|--|
| Contract | The number of the contract using this classification. |
| Code | The code of the classification item. |
| Name | The name of the classification item. |
| Classification Type | The type of the classification. |
| Valid From | The date from which the classification item is valid. |
| Valid To | The date until which the classification item is valid. |

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 |
|---------------|----------|-----------|---|
| Is Guaranteed | Yes | Bool | <p>This checkbox marks the product as secured or unsecured.</p> <div> <p>NOTE</p> <p>The Collateral Cover Percent field appears when you select this checkbox.</p> </div> |

| Field | Required | Data Type | Details |
|----------------------------------|----------|--------------|---|
| Allow Collateral Partial Release | No | Bool | 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. |
| Collateral Cover Percent | No | Whole number | The percent that the collateral person on the contract pays. It usually is over 100%. |
| Allow CoDebtor | No | Bool | Select if another debtor exists for this product. |
| Allow Refinancing | No | Bool | Select if the account can be refinanced for this product. |
| Maximum Number of CoDebtors | No | Text | Set the maximum number of debtors possible for this product. |
| Interest Is Capitalized | No | Bool | 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. |

| Field | Required | Data Type | Details |
|---------------------|----------|-----------|---|
| Auto Rollover | No | Bool | 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 Negotiated IR | No | Bool | Select if for this product the interest rate is negotiable. |
| Allow Top Ups | No | Bool | Select if the amount can be topped up with a sum of money. |
| Allow Withdrawals | No | Bool | Select if the customer can take out money for this product. |

| | | | | | | | | | |
|-------------|-----------|----------------|--------------|-----------------|----------------------|-------------|---------------------------|-----------|----------------|
| 1 Main Info | 2 Details | 3 Availability | 4 Dimensions | 5 Risk Formulas | 6 Test Risk Formulas | 7 Documents | 8 Associated Transactions | 9 History | 10 GL Settings |
|-------------|-----------|----------------|--------------|-----------------|----------------------|-------------|---------------------------|-----------|----------------|

General Data

Is Guaranteed
☒

Allow Collateral Partial Release
☐

Collateral Cover Percent
50

Allow CoDebtor
☐

Allow Refinancing
☒

Max No. Of CoDebtors

Interest Is Capitalized
☐

Interest Payment Type
Monthly

Auto Roll Over
☐

Allow negotiated IR
☒

Allow Top Ups
☐

Allow Withdraws
☐

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

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

| 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 |
|--|----------|------------|---|
| Repayment Allocation Method | Yes | Option set | The repayment allocation method represents the recovery order of amounts from repayment notifications. You can specify if charges should be recovered with priority or maybe interest or principal. You can also split order by number of days overdue. Select a repayment allocation method from the list. |
| Holiday Shift For Repayment Installments | Yes | Bool | <p>This checkbox marks if the holidays are considered for the calculation of the maturity schedule.</p> <div> <p>NOTE The Country Calendars section appears if you select this checkbox.</p> </div> |

| 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 last working day before the initially calculated due date. • Backward - the due date is shifted to the next working day after the initially calculated due date. <p>Default value: Forward.</p> |
| Defer Due Date | Yes | Bool | <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> |
| Grace Type | No | Option set | <p>Select one from the list:</p> <ul style="list-style-type: none"> • Both • Principle • Interest. |

| Field | Required | Data Type | Details |
|--------------------------|----------|--------------|--|
| Product Grace | No | Option set | Select one from the list. |
| Grace Days for Repayment | No | Whole number | Select one from the list. Insert the number of days for which the grace applies. |

In the **Payment Schedule Types** section, you can insert or create a payment schedule for the leasing product. To insert a new associated payment schedule type, click **Insert Existing** and select one of the existing types. Go to ["Payment Schedule Types" on page 397](#) to read more about this.

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

In the **Product Guarantees** section, presented if the **Is Guaranteed** checkbox was selected earlier, you can insert or delete guarantees. To insert a guarantee, click the **Insert Existing** button and select one of the following:

- Cash collateral
- Real estate.

To insert a new guarantee, click **Insert** and fill in the name, code and select the guarantee type.

The **Product Destination Types** section allows for insertion or removal of existing destinations. 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.

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.

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 |
|----------|----------|------------|---|
| Currency | Yes | Option set | Choose the currency for this banking product. |

| Field | Required | Data Type | Details |
|--|----------|--------------|---|
| Period Type | No | Option set | <p>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 selected in the Details tab. </div> |
| 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 start period for unused amount after the activation. |

| Field | Required | Data Type | Details |
|----------------------------|----------|--------------|---|
| 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. |
| Minimum Residual Value (%) | No | Whole Number | An estimate on the minimum amount the car or product is worth at the end of the lease term. |
| Maximum Residual Value (%) | No | Whole Number | An estimate on the maximum amount the car or product is worth at the end of the lease term. |

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see "[Product Filter](#)" on page 386.

The screenshot shows the 'Availability Rules' interface. At the top, there are buttons for 'Insert', 'Delete', 'Export', and 'Refresh'. Below these is a table with the following content:

| Description |
|--|
| Account is in Persona = Customers with age between 25-35 |
| Age >= 25 - 35 |
| DateValue = 2020-08-17 |

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

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. Click the **Insert** button to add a covenant to the product. You can select from 3 possible covenants:

- *Borrowers should perform tax obligations*: the lenders expect the borrowers to perform their tax obligations to both the business and towards their employees. This covenant is of type affirmative.
- *Lender can monitor borrower's current ratio*: the lender may continuously monitor the borrower's current ratio to ensure it stays relatively attractive and promising. This covenant is of type financial.

- *Lender possesses the right to prevent merges or acquisitions:* a clear stipulation that the lender possesses the right to prevent merges of acquisitions without proper notification or full knowledge of the process. This covenant is of type negative.

Each covenant can be attributed a value, an availability period, and a review frequency in months.

After all configurations are done, click the **Save and Reload** button.

Dimensions

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

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 > Banking Product Factory for Enterprise > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions

Click **Insert**. 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. |

| Field | Required | Data Type | Details |
|---------------------------|----------|------------|---|
| 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 | Bool | 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** 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 386 . |
| 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 386 . |
| 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 bool for the values you wish to include in the filter. |

EDIT INTEREST & COMMISSION ITEM FILTER

INTEREST & COMMISSION ITEM FILTER

Filter:

OptionSet:

Description:

| Name | Display Name |
|--|--------------------------------|
| <input checked="" type="checkbox"/> highschool | Bacalaureat |
| <input checked="" type="checkbox"/> No studies / Primary school | Fara studii sau scoala primara |
| <input checked="" type="checkbox"/> Gymnasium studies | Gymnasium studies |
| <input checked="" type="checkbox"/> High school | High school |
| <input checked="" type="checkbox"/> Higher education | Licenta |
| <input type="checkbox"/> higher education | Licenta universitara |
| <input type="checkbox"/> postgraduate | Master/MBA/EMBA/Dr. |
| <input type="checkbox"/> Postgraduate studies (MBA, MA, ACCA, CFA, etc.) | Master/MBA/EMBA/Dr. |

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

Insurance

For any banking product, you can select a pre-existing insurance or create a new one. To add a new one, 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

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. 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 | Bool | If you select this checkbox, the discount is calculated using the Banking Formula engine. |
| Is optional discount? | No | Bool | Selecting this checkbox results in the discount being applied only if the customer agrees to the discount. |
| Is percentage | No | Bool | 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

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:

Risk Formulas

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

In the **Banking Product Formula** 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 | No | Text | Enter an appropriate name. |
| Banking Product | No | Option set | The name of the banking product is inserted automatically. |
| Formula Type | Yes | Option set | Select the type of formula configured before, e.g. scoring /eligibility. |
| Formula | Yes | Option set | Select the previously configured formula. <div> IMPORTANT! The formula must be activated before attaching it to a product. </div> |

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

1 Definition **2 Input** **3 Output**

FORMULA PARAMETER MAPPING

Data Mapping Type: Formula

Master Entity: FTOS_BNKAP_RetailApplicantData

Operation Name: EligibilityForApplicant

Name: EligibilityForApplicant_EligibilityForApplicant_1602250301662_RetailMortgage

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

1 Definition **2 Input** **3 Output**

FTOS_BNKAP_RetailApplicantData - Input

- Age: Age
- Citizenship: Citizenship Id
- IsInAMLRiskList: false
- IsRetail: true
- MonthsActualJob: Employ Monts
- NetIncome: netIncome

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

1 Definition **2 Input** **3 Output**

FTOS_BNKAP_RetailApplicantData - Output

- KOAge: click to map
- KOIncome: click to map
- KOIsInAMLRiskList: click to map
- KOIsRetail: click to map
- KOMonthsActualJob: click to map
- KOCitizenship: click to map
- FinalResult: 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 Risk Formulas

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

Insert **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

TEST SCENARIO

Test Scenario Type

| Key | Value |
|-----|------------|
| 0 | 0 |
| 0 | Test value |
| 0 | Test value |
| 0 | Test value |
| 0 | 100 |
| 0 | 100 |
| 0 | 22.02 |

Save Output Data **Calculate**

TEST SCENARIO OUTPUTS

Save Output Data **Calculate**

No data

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**.

EDIT TEST SCENARIO

TEST SCENARIO

Test Scenario Type

| Key | Value |
|-----|------------|
| 0 | 0 |
| 0 | Test value |
| 0 | Test value |
| 0 | Test value |
| 0 | 100 |
| 0 | 100 |
| 0 | 22.02 |

Save Output Data **Calculate**

TEST SCENARIO OUTPUTS

Save Output Data **Calculate**

No data

Documents

The **Documents** tab contains all the attached documents available for a product. The previously associated documents are displayed in the **Banking Product Documents** section.

1 Main Info 2 Details 3 Availability 4 Dimensions 5 Risk Formulas 6 Test Risk Formulas 7 **Documents** 8 Associated Transactions 9 History

Banking Product Document

+ Insert X Delete Export Refresh

| ReportId | Banking Copies No | Operation Code |
|--------------|-------------------|----------------|
| ACContractLG | 1 | |
| LoanContract | 2 | |

Banking Product Agreement

+ Insert X Delete Export Refresh

| Code |
|------|
| |

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 | Bool | Select if the document is mandatory. |
| Includes Debtor | Bool | Select if the document includes the debtor. |
| Includes Coborrower | Bool | Select if the document includes the co-borrower. |
| Requires Signature | Bool | Select if the document requires to be signed. |
| Is accord | Bool | Select if the document represents the accord. |

ADD BANKING PRODUCT DOCUMENT

Banking Product Document

Operation Code: 113559 Banking Copies No: 2 Report: Document Type: Credit Application

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.

The agreements that a customer needs to go through are displayed in the **Banking Products Agreement** 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 | Bool | Select if the agreement is mandatory for the product. |

ADD BANKING PRODUCT AGREEMENT

BANKING PRODUCT AGREEMENT

Agreement Banking Product

Code 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](#).

Associated Transactions

Transactions types that are performed to and from a banking product are displayed in the **Associated Transactions** tab.

For each banking product, you must select a bank account to be used for transactions. Next to the **Self Bank Account For Transactions** 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.

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

| Field | Required | Data Type | Details |
|------------------------------|----------|------------|--|
| Transactions Operations Type | Yes | Option set | <p>This field makes the connection with the transaction motor of bank accounts. Select one of the methods defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div> |
| Is Automatic Transaction | Yes | Bool | This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations. |
| Is System Transactions | No | Bool | 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. |
| Name | Yes | Text | Name of the transaction type. |
| Transaction Code | Yes | Text | The code of the transaction type. |
| Generates Accounting Entry | Yes | Bool | This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity. |

| Field | Required | Data Type | Details |
|-------------------------------|----------|------------|---|
| Source Entity ID | Yes | Option set | The ID of the entity referenced by the accounting systems. |
| Generate New Contract Version | No | Bool | This checkbox allows you to specify if a new contract version should be generated by this transaction type. |
| Commission Type | No | Lookup | The transaction type for which this transaction type is applicable. |

The screenshot shows the 'Associated Transactions' tab in the Banking Product Factory. The breadcrumb trail at the top includes: 1 Main Info, 2 Details, 3 Availability, 4 Dimensions, 5 Risk Formulas, 6 Test Risk Formulas, 7 Documents, 8 Associated Transactions (active), 9 History, and 10 GL Settings. Below the breadcrumb, there is a section titled 'Self Bank Account Associated With The Product' with a dropdown menu showing 'Self Bank Account For Transactions' and a search bar containing 'NOTEXISTING-01'. Underneath, there is a section titled 'TRANSACTION TYPES' with buttons for '+ Insert existing' and 'X Remove existing'. A table lists various transaction types: Name, Accruals and Provisions, Disbursement, Early Repayment, Payment Holiday, Repayment, Repayment Notification, and Reschedule Overdues.

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 415](#)).

GL Settings

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.

BANKING PRODUCT GL ACCOUNTS

| <div> <div>+ Insert</div> <div>✕ Delete</div> <div>📄 Export</div> <div>🔄 Refresh</div> </div> | | | | |
|---|-------------------|------------------|----------------|------------------------|
| Product | Accounting System | Accounting Scope | Item | GL Account |
| TestPack | 0001 | FinDeposit | 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:

ADD BANKING PRODUCT GL ACCOUNT

BANKING PRODUCT GL ACCOUNT

Product: Card Blue

Accounting System: 0001

Accounting Scope: CurrentAccount

Item: Front-end Fee

GL Account: 20111 Discount

| 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.

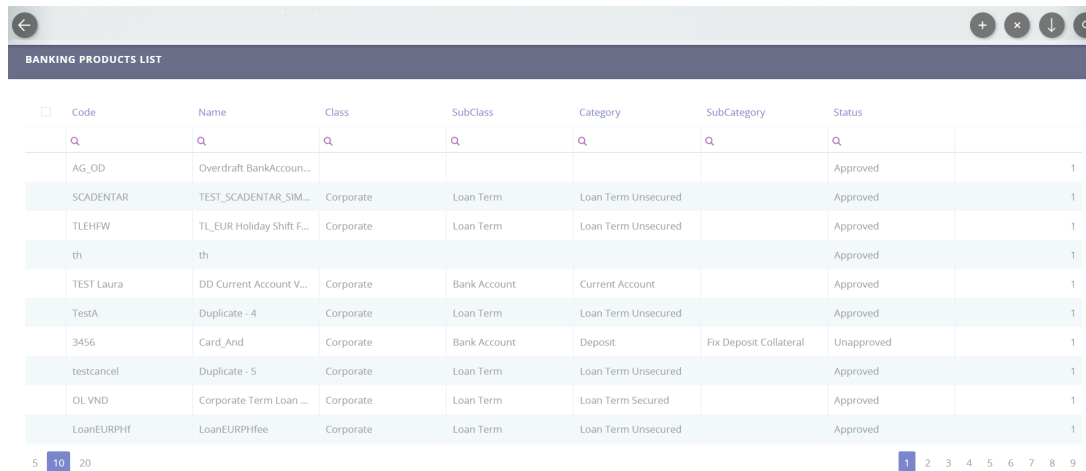
Mortgage Loans

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 in Developer mode.
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 | |
|------------|---------------------------|-----------|--------------|---------------------|------------------------|------------|---|
| AG_OD | Overdraft BankAccount... | | | | | Approved | 1 |
| SCADENTAR | TEST_SCADENTAR_SIM... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| TLHFW | TL_EUR Holiday Shift F... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| th | th | | | | | Approved | 1 |
| TEST Laura | DD Current Account V... | Corporate | Bank Account | Current Account | | Approved | 1 |
| TestA | Duplicate - 4 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| 3456 | Card_And | Corporate | Bank Account | Deposit | Fix Deposit Collateral | Unapproved | 1 |
| testcancel | Duplicate - 5 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| OL VND | Corporate Term Loan ... | Corporate | Loan Term | Loan Term Secured | | Approved | 1 |
| LoanEURPHF | LoanEURPHfee | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |

In 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.

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. [Risk Formulas](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Test Risk Formulas](#) - Use this tab to test the formula attached above before displaying it in a digital journey.
7. [Documents](#) - This tab contains all the attached documents available for a product.
8. [Associated Transactions](#) - Transactions that are done to and from a banking product are found in this tab.
9. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
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, image and features.

The following fields are available:

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

| Field | Required | Data Type | Details |
|--------------------|----------|------------|---|
| Class | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subclass | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Category | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subcategory | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Start Date | Yes | Date | The date when the product becomes available. |
| End Date | Yes | Date | The last date from when the product is available. From that date forward, the product is no longer available. |
| Benefits | No | Text area | Insert the advantages of owning the banking product. You can format the text in the text editor window. |
| Description | No | Text area | Write any description or additional text here. |
| Product Image | No | File | Insert an image representative for the product. |
| Document | No | File | Insert the document representative for the product. |
| 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.

The screenshot shows the 'Main Info' tab of the Banking Product Factory interface. The form is divided into several sections:

- Product Type:** A dropdown menu set to 'Mortgage'.
- Banking Product Code:** A dropdown menu set to 'TST'.
- Class:** A dropdown menu set to 'Corporate'.
- Category:** A dropdown menu.
- Start Date:** A date picker set to '10/03/2021'.
- End Date:** A date picker set to '22/03/2021'.
- Name:** A text field containing 'MortgageLoan'.
- SubClass:** A dropdown menu.
- SubCategory:** A dropdown menu.
- Benefits:** A rich text editor with a toolbar and a text area.
- Description:** A text area.

IMPORTANT!For mortgage loans, select Product Type = **Mortgage**.

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 |
|-----------------|----------|------------|---|
| Banking Product | No | Option set | Choose the name of the product. |
| Is main feature | No | Bool | Select the checkbox if it is the major feature. |
| Feature | No | Text | The name of the feature. |

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

In the **Product Classifications** 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, or create a new one by clicking **Insert** and filling in the following fields:

| 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. |

The **Contract Classifications Section** is displayed after saving the classification item record and allows you to insert existing contracts. The following information is displayed here:

| Field | Details |
|---------------------|--|
| Contract | The number of the contract using this classification. |
| Code | The code of the classification item. |
| Name | The name of the classification item. |
| Classification Type | The type of the classification. |
| Valid From | The date from which the classification item is valid. |
| Valid To | The date until which the classification item is valid. |

Details

The **Details** tab requires further elements such as interest, payment type, refinancing and guarantees.

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

| Field | Required | Data Type | Details |
|----------------------|----------|--------------|--|
| Bank Account Type | Yes | Option set | <p>Choose one from the following:</p> <ul style="list-style-type: none"> • Current Account • Savings Account • Fixed Deposit Account • Term Deposit Account • Loan Term Account. |
| Is Revolving | No | Bool | Allows a business to borrow money as needed for funding working capital needs and continuing operations such as meeting payroll and payables. |
| Auto Disbursement | Yes | Bool | Specifies if the disbursement is automatically performed when the contract is approved. |
| Max No Disbursements | No | Whole number | The maximum number of disbursements that can be configured for this product. |
| Is Guaranteed | Yes | Bool | <p>This checkbox marks the product as secured or unsecured.</p> <div> <p>NOTE</p> <p>The Collateral Cover Percent field appears when you select this checkbox.</p> </div> |

| Field | Required | Data Type | Details |
|----------------------------------|----------|--------------|---|
| Allow Collateral Partial Release | No | Bool | 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. |
| Collateral Cover Percent | No | Whole number | The percent that the collateral person on the contract pays. It usually is over 100%. |
| Allow CoDebtor | No | Bool | Select if another debtor exists for this product. |
| Allow Refinancing | No | Bool | Select if the account can be refinanced for this product. |
| Max Number of CoDebtors | No | Text | Set the maximum number of debtors possible for this product. |

1 Main Info 2 **Details** 3 Availability 4 Dimensions 5 Risk Formulas 6 Test Risk Formulas 7 Documents 8 Associated Transactions 9 History

General Data

Bank Account Type
Loan Term Account

Is Revolving
☐

Auto Disbursement
☐

Max No Disbursements
5

Is Guaranteed
☐

Allow Collateral Partial Release
☒

Allow CoDebtor
☒

Allow Refinancing
☐

Max No. Of CoDebtors
1

Payment Schedule Types

Periodicity Type
Monthly

Holiday Shift For Repayment Installments
☐

Repayment Allocation Method
CostOrder

Grace Type
Interest

Product Grace
GracePeriod

Grace Days for Repayment
30

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

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

| 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 |
|--|----------|------------|---|
| Repayment Allocation Method | Yes | Option set | The repayment allocation method represents the recovery order of amounts from repayment notifications. You can specify if charges should be recovered with priority or maybe interest or principal. You can also split order by number of days overdue. Select a repayment allocation method from the list. |
| Holiday Shift For Repayment Installments | Yes | Bool | <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 appears if you select this checkbox.</p> </div> |

| 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 last working day before the initially calculated due date. • Backward - the due date is shifted to the next working day after the initially calculated due date. <p>Default value: Forward.</p> |
| Defer Due Date | Yes | Bool | <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> |
| Grace Type | No | Option set | <p>Select one from the list:</p> <ul style="list-style-type: none"> • Both • Principle • Interest. |

| Field | Required | Data Type | Details |
|--------------------------|----------|--------------|--|
| Product Grace | No | Option set | Select one from the list. |
| Grace Days for Repayment | No | Whole number | Select one from the list. Insert the number of days for which the grace applies. |

In the **Payment Schedule Types** section, you can insert or create a payment schedule for the leasing product. To insert a new associated payment schedule type, click **Insert Existing** and select one of the existing types. Go to ["Payment Schedule Types" on page 397](#) to read more about this.

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

In the **Product Guarantees** section, presented if the **Is Guaranteed** checkbox was selected earlier, you can insert or delete guarantees. To insert a guarantee, click the **Insert Existing** button and select one of the following:

- Cash collateral
- Real estate.

To insert a new guarantee, click **Insert** and fill in the name, code and select the guarantee type.

The **Product Destination Types** section allows for insertion or removal of existing destinations. 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.

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.

CURRENT STATUS: **APPROVED** | NEXT STATUS: **CLOSED** | CODE: CA VND | PRODUCT: Current Account VND | START DATE: 01/01/2020 | END DATE: 31/03/2025 | VERSION: 1 | VERSION DATE: 27/03/2020 02:00

Associated Products

☐ Name
 Q
 Fixed Deposit Account VND
 Fixed Deposit Account VND
 Fixed Deposit Account VND
 Fixed Deposit Account VND
 Promissory Note
 Promissory Note VND
 Promissory Note VND

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 |
|----------|----------|------------|---|
| Currency | Yes | Option set | Choose the currency for this banking product. |

| Field | Required | Data Type | Details |
|---|----------|--------------|---|
| Period Type | No | Option set | <p>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 selected in the Details tab. </div> |
| Maximum Period For Disbursement After Activation (Months) | No | Whole Number | The maximum period of disbursement after the this option is set. The number of months during which the disbursement must be made. |
| 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 Principal For Early Repayment | No | Whole Number | The minimum principal for when early repayments are made. |
| Minimum Amount | No | Whole Number | The minimum amount of the product for which the bank opens a contract. |

| Field | Required | Data Type | Details |
|--|----------|--------------|---|
| 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 start period for unused amount after the activation. |
| 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. |

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see "[Product Filter](#)" on page 386.

Availability Rules

PRODUCT AVAILABILITY ITEM FILTERS

| Description |
|--|
| Account is in Persona - Customers with age between 25-35 |
| Age >= 25 - 35 |
| DateValue = 2020-08-17 |

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

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. Click the **Insert** button to add a covenant to the product. You can select from 3 possible covenants:

- *Borrowers should perform tax obligations*: the lenders expect the borrowers to perform their tax obligations to both the business and towards their employees. This covenant is of type affirmative.
- *Lender can monitor borrower's current ratio*: the lender may continuously monitor the borrower's current ratio to ensure it stays relatively attractive and promising. This covenant is of type financial.

- *Lender possesses the right to prevent merges or acquisitions:* a clear stipulation that the lender possesses the right to prevent merges of acquisitions without proper notification or full knowledge of the process. This covenant is of type negative.

Each covenant can be attributed a value, an availability period, and a review frequency in months.

After all configurations are done, click the **Save and Reload** button.

For example, once displayed in a Digital Journey, this is how the product looks like:

The screenshot shows a digital journey interface for personalizing a loan. At the top, there's a status bar with 'CURRENT STATUS: INITIALIZED' and 'NEXT STATUS: CHOOSE STATUS'. Below this is a blue header with 'EDIT LOAN APPLICATION'. The main section is titled 'Personalize your loan'. It features two sliders: 'Amount' with a range from 15000 to 999999 and a current value of 507500, and 'Loan Period' with a range from 60 to 420 and a current value of 240. To the right of the sliders are input fields showing '€ 507500' and '240'. At the bottom, it states 'Total borrowed amount € 507499'.

Dimensions

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

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 > Banking Product Factory for Enterprise > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions

Click **Insert**. 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 | Bool | 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** 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 386 . |
| 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. |

| Field | Required | Data Type | Details |
|------------------------------|----------|------------|---|
| 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 386 . |
| 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 bool for the values you wish to include in the filter. |

EDIT INTEREST & COMMISSION ITEM FILTER

INTEREST & COMMISSION ITEM FILTER

Filter:

OptionSet:

Description:

| Name | Display Name |
|--|--------------------------------|
| <input checked="" type="checkbox"/> High school | Bacalaureat |
| <input checked="" type="checkbox"/> No studies / Primary school | Fara studii sau scoala primara |
| <input checked="" type="checkbox"/> Gymnasium studies | Gymnasium studies |
| <input checked="" type="checkbox"/> High school | High school |
| <input checked="" type="checkbox"/> Higher education | Licenta |
| <input type="checkbox"/> Higher education | Licenta universitara |
| <input type="checkbox"/> postgraduate | Master/MBA/EMBA/Dr. |
| <input type="checkbox"/> Postgraduate studies (MBA, MA, ACCA, CFA, etc.) | Master/MBA/EMBA/Dr. |

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

Insurance

For any banking product, you can select a pre-existing insurance or create a new one. To add a new one, 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.

EDIT INSURANCE ITEM

INSURANCE ITEM

Banking Product: Docs_Test

Code: 123

Item Name: Docs_Test_Insurance

Insurance List: Test_Insurance

Start Date: 23/01/2021

End Date: 24/01/2022

Details:

INSURANCE ITEM FILTERS

+ Insert X Delete Export Refresh

Description

Docs_Test == 18 - 65

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

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. 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 | Bool | If you select this checkbox, the discount is calculated using the Banking Formula engine. |
| Is optional discount? | No | Bool | 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 | Bool | 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

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. |

| Field | Required | Data type | Description |
|---------------|----------|------------|--|
| 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 blue header for 'EDIT LOAN APPLICATION'. The main content area is titled 'Eligibility Questions' and contains the text: '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.

Risk Formulas

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

In the **Banking Product Formula** 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](#).

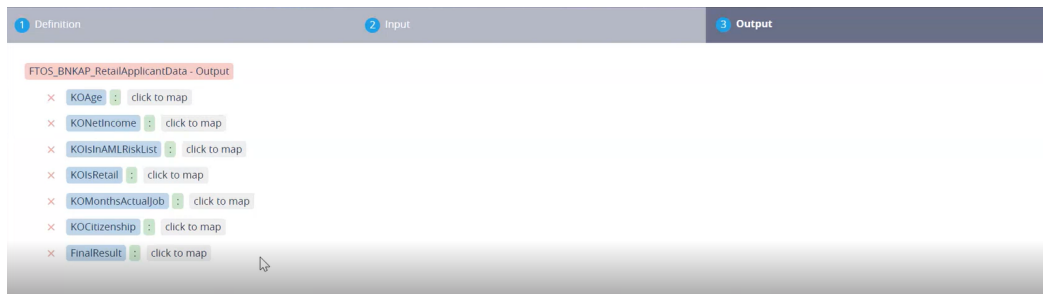
In the **Add Banking Product Formula** page, fill in the following fields:

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

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.



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 Risk Formulas

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

Insert **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

TEST SCENARIO

Test Scenario Type

Formula type 1

| Key | Value |
|--------------------|------------|
| Clientship | Test value |
| InterestRateCost | Test value |
| Interest | 100 |
| InterestRateMargin | 100 |
| Age | 28.45 |
| RealIncome | |

☐ Save Output Data Calculate

TEST SCENARIO OUTPUTS

+ Insert

- Delete

Export

Refresh

| Name |
|------|
| |

No data

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**.

1 Main Info2 Details3 Availability4 Dimensions5 Risk Formulas6 Test Risk Formulas7 Documents8 Associated Transactions9 History

TEST SCENARIO OUTPUTS

+ Insert

- Delete

Export

Refresh

| Name |
|--|
| |
| Corporate Loan For IT companies 19.10.2020, 16.06.21 |
| Corporate Loan For IT companies 19.10.2020, 16.06.21 |
| Corporate Loan For IT companies 19.10.2020, 16.07.14 |

Documents

The **Documents** tab contains all the attached documents available for a product. The previously associated documents are displayed in the **Banking Product Documents** section.

1 Main Info2 Details3 Availability4 Dimensions5 Risk Formulas6 Test Risk Formulas7 Documents8 Associated Transactions9 History

Banking Product Document

+ Insert

- Delete

Export

Refresh

| ReportId | Banking Copies No | Operation Code |
|--------------|-------------------|----------------|
| ACContractLG | 1 | |
| LoanContract | 2 | |

Banking Product Agreement

+ Insert

- Delete

Export

Refresh

| Code |
|------|
| |

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

MANAGING BANKING PRODUCTS

254

| 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 | Bool | Select if the document is mandatory. |
| Includes Debtor | Bool | Select if the document includes the debtor. |
| Includes Coborrower | Bool | Select if the document includes the co-borrower. |
| Requires Signature | Bool | Select if the document requires to be signed. |
| Is accord | Bool | Select if the document represents the accord. |

ADD BANKING PRODUCT DOCUMENT

Banking Product Document

Operation Code: 113559

Banking Copies No: 2

Report: [Dropdown]

Document Type: Credit Application

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.

The agreements that a customer needs to go through are displayed in the **Banking Products Agreement** 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 | Bool | 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](#).

Associated Transactions

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.
- **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.

Transactions types that are performed to and from a banking product are displayed in the **Associated Transactions** tab.

For each banking product, you must select a bank account to be used for transactions. Next to the **Self Bank Account For Transactions** 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.

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

| Field | Required | Data Type | Details |
|------------------------------|----------|------------|--|
| Transactions Operations Type | Yes | Option set | <p>This field makes the connection with the transaction motor of bank accounts. Select one of the methods defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div> |
| Is Automatic Transaction | Yes | Bool | <p>This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations.</p> |

| Field | Required | Data Type | Details |
|-------------------------------|----------|------------|--|
| Is System Transactions | No | Bool | 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. |
| Name | Yes | Text | Name of the transaction type. |
| Transaction Code | Yes | Text | The code of the transaction type. |
| Generates Accounting Entry | Yes | Bool | This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity. |
| Source Entity ID | Yes | Option set | The ID of the entity referenced by the accounting systems. |
| Generate New Contract Version | No | Bool | This checkbox allows you to specify if a new contract version should be generated by this transaction type. |
| Commission Type | No | Lookup | The transaction type for which this transaction type is applicable. |

1 Main Info
2 Details
3 Availability
4 Dimensions
5 Risk Formulas
6 Test Risk Formulas
7 Documents
8 **Associated Transactions**
9 History
10 GL Settings

Self Bank Account Associated With The Product

Self Bank Account For Transactions

NOTEXISTING-01

TRANSACTION TYPES

+ Insert existing

- Remove existing

| <input type="checkbox"/> | Name |
|-------------------------------------|-------------------------|
| <input checked="" type="checkbox"/> | Q |
| <input type="checkbox"/> | Accruals and Provisions |
| <input type="checkbox"/> | Disbursement |
| <input type="checkbox"/> | Early Repayment |
| <input type="checkbox"/> | Payment Holiday |
| <input type="checkbox"/> | Repayment |
| <input type="checkbox"/> | Repayment Notification |
| <input type="checkbox"/> | Reschedule Currencies |

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 415](#)).

GL Settings

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.

BANKING PRODUCT GL ACCOUNTS

+ Insert X Delete ■ Export ↻ Refresh

| <input type="checkbox"/> | Product | Accounting System | Accounting Scope | Item | GL Account |
|--------------------------|----------------------|----------------------|----------------------|----------------------|------------------------|
| | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| | TestPack | 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:

←

ADD BANKING PRODUCT GL ACCOUNT

⌵ ⌵ ⌵ ⌵ ⌵

BANKING PRODUCT GL ACCOUNT

Product

Card Blue

Accounting System

0001

Accounting Scope

CurrentAccount

Item

Front-end Fee

GL Account

20111 Discount

| 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. |
| 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 in Developer mode.
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="checkbox"/> | AG_OD | Overdraft BankAccoun... | | | | | Approved | 1 |
| <input type="checkbox"/> | SCADENTAR | TEST_SCADENTAR_SIM... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | TLHFW | TL_EUR Holiday Shift F... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | th | th | | | | | Approved | 1 |
| <input type="checkbox"/> | TEST Laura | DD Current Account V... | Corporate | Bank Account | Current Account | | Approved | 1 |
| <input type="checkbox"/> | TestA | Duplicate - 4 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | 3456 | Card_And | Corporate | Bank Account | Deposit | Fix Deposit Collateral | Unapproved | 1 |
| <input type="checkbox"/> | testcancel | Duplicate - 5 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| <input type="checkbox"/> | OLVND | Corporate Term Loan ... | Corporate | Loan Term | Loan Term Secured | | Approved | 1 |
| <input type="checkbox"/> | LoanEURPHF | LoanEURPHfee | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |

In 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.

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 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. [Risk Formulas](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Test Risk Formulas](#) - Use this tab to test the formula attached above before displaying it in a digital journey.
7. [Documents](#) - This tab contains all the attached documents available for a product.
8. [Associated Transactions](#) - Transactions that are done to and from a banking product are found in this tab.
9. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
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, image and features.

The following fields are available:

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

| Field | Required | Data Type | Details |
|--------------------|----------|------------|---|
| Class | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subclass | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Category | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subcategory | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Start Date | Yes | Date | The date when the product becomes available. |
| End Date | Yes | Date | The last date from when the product is available. From that date forward, the product is no longer available. |
| Benefits | No | Text area | Insert the advantages of owning the banking product. You can format the text in the text editor window. |
| Description | No | Text area | Write any description or additional text here. |
| Product Image | No | File | Insert an image representative for the product. |
| Document | No | File | Insert the document representative for the product. |
| 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.

IMPORTANT! For overdrafts, select Product Type = **Overdraft**.

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 |
|-----------------|----------|------------|---|
| Banking Product | No | Option set | Choose the name of the product. |
| Is main feature | No | Bool | Select the checkbox if it is the major feature. |
| Feature | No | Text | The name of the feature. |

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

In the **Product Classifications** 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, or create a new one by clicking **Insert** and filling in the following fields:

| 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. |

| Field | Required | Data Type | Details |
|----------|----------|----------------|--|
| 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. |

The **Contract Classifications Section** is displayed after saving the classification item record and allows you to insert existing contracts. The following information is displayed here:

| Field | Details |
|---------------------|--|
| Contract | The number of the contract using this classification. |
| Code | The code of the classification item. |
| Name | The name of the classification item. |
| Classification Type | The type of the classification. |
| Valid From | The date from which the classification item is valid. |
| Valid To | The date until which the classification item is valid. |

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 |
|----------------------|----------|--------------|---|
| Bank Account Type | Yes | Option set | <p>Choose one from the following:</p> <ul style="list-style-type: none"> • Current Account • Savings Account • Fix Deposit Account • Term Deposit Account • Loan Term Account. |
| Is Revolving | No | Bool | Allows a business to borrow money as needed for funding working capital needs and continuing operations such as meeting payroll and payables. |
| Auto Disbursement | Yes | Bool | Specifies if the disbursement is automatically performed when the contract is approved. |
| Max No Disbursements | No | Whole number | The maximum number of disbursements that can be configured for this product. |
| Is Guaranteed | Yes | Bool | <p>This checkbox marks the product as secured or unsecured.</p> <div> <p>NOTE</p> <p>The Collateral Cover Percent field appears when you select this checkbox.</p> </div> |

| Field | Required | Data Type | Details |
|--|----------|--------------|---|
| Activation Tranches On Document Submission | No | Bool | Tranches to be granted after certain documents are submitted. |
| Allow Collateral Partial Release | No | Bool | 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. |
| Collateral Cover Percent | No | Whole number | The percent that the collateral person on the contract pays. It usually is over 100%. |
| Allow CoDebtor | No | Bool | Select if another debtor exists for this product. |
| Allow Refinancing | No | Bool | Select if the account can be refinanced for this product. |
| Number of CoDebtors | No | Text | Set the maximum number of debtors possible for this product. |

1 Main Info 2 **Details** 3 Availability 4 Dimensions 5 Risk Formulas 6 Test Risk Formulas 7 Documents 8 Associated Transactions 9 History 10 GL Settings

General Data

| | | |
|--|--|---|
| Bank Account Type Loan Term Account | Is Revolving <input type="checkbox"/> | Allow Overdraft <input type="checkbox"/> |
| Auto Disbursement <input checked="" type="checkbox"/> | Max No Disbursements 3 | Activation Tranches On Document Submission <input checked="" type="checkbox"/> |
| Is Guaranteed <input type="checkbox"/> | Allow Collateral Partial Release <input type="checkbox"/> | Collateral Cover Percent <input type="text"/> |
| Allow CoDebtor <input type="checkbox"/> | Allow Refinancing <input type="checkbox"/> | Max No. Of CoDebtors <input type="text"/> |

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

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

| 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 |
|--|----------|------------|---|
| Repayment Allocation Method | Yes | Option set | The repayment allocation method represents the recovery order of amounts from repayment notifications. You can specify if charges should be recovered with priority or maybe interest or principal. You can also split order by number of days overdue. Select a repayment allocation method from the list. |
| Holiday Shift For Repayment Installments | Yes | Bool | <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 appears if you select this checkbox.</p> </div> |

| 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 last working day before the initially calculated due date. • Backward - the due date is shifted to the next working day after the initially calculated due date. <p>Default value: Forward.</p> |
| Defer Due Date | Yes | Bool | <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> |
| Grace Type | No | Option set | <p>Select one from the list:</p> <ul style="list-style-type: none"> • Both • Principle • Interest. |

| Field | Required | Data Type | Details |
|--------------------------|----------|--------------|--|
| Product Grace | No | Option set | Select one from the list. |
| Grace Days for Repayment | No | Whole number | Select one from the list. Insert the number of days for which the grace applies. |

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.

In the **Payment Schedule Types** section, you can insert or delete associated payment schedule types. To insert a new associated payment schedule type, click **Insert Existing** and select one of the existing types. Go to "[Payment Schedule Types](#)" on page 397 to read more about this.

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

The **Product Destination Types** section allows for insertion or removal of existing destinations. 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.

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

| CODE | PRODUCT | START DATE | END DATE | VERSION | VERSION DATE |
|--------|---------------------|------------|------------|---------|------------------|
| CA VND | Current Account VND | 01/01/2020 | 31/03/2025 | 1 | 27/03/2020 02:00 |

Search:

- ☐ Name
- Fixed Deposit Account VND
- Fixed Deposit Account VND
- Fixed Deposit Account VND
- Fixed Deposit Account VND
- Promissory Note
- Promissory Note VND
- Promissory Note VND

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

Currency: Period Type:

Minimum Period: Maximum Period:

Minimum Amount: Maximum Amount:

Self Bank Account Associated With The Product

The following fields are available:

| Field | Required | Data Type | Details |
|----------|----------|------------|---|
| Currency | Yes | Option set | Choose the currency for this banking product. |

| Field | Required | Data Type | Details |
|----------------|----------|--------------|---|
| Period Type | No | Option set | <p>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 selected in the Details tab. </div> |
| 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. |

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see ["Product Filter" on page 386](#).

Availability Rules

PRODUCT AVAILABILITY ITEM FILTERS

Insert Delete Export Refresh

| Description | Account | Age | DateValue |
|--|----------------|------------------------|-----------|
| Account is in Persona = Customers with age between 25-35 | Age >= 25 - 35 | DateValue = 2020-08-17 | |

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

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. Click the **Insert** button to add a covenant to the product. You can select from 3 possible covenants:

- *Borrowers should perform tax obligations*: the lenders expect the borrowers to perform their tax obligations to both the business and towards their employees. This covenant is of type affirmative.
- *Lender can monitor borrower's current ratio*: the lender may continuously monitor the borrower's current ratio to ensure it stays relatively attractive and promising. This covenant is of type financial.
- *Lender posses the right to prevent merges or acquisitions*: a clear stipulation that the lender possesses the right to prevent merges of acquisitions without proper notification or full knowledge of the process. This covenant is of type negative.

Each covenant can be attributed a value, an availability period, and a review frequency in months.

After all configurations are done, click the **Save and Reload** button.

Dimensions

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

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 > Banking Product Factory for Enterprise > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions

Click **Insert**. 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 | Bool | 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** 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 386 . |
| 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 386 . |
| 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 bool for the values you wish to include in the filter. |

EDIT INTEREST & COMMISSION ITEM FILTER

INTEREST & COMMISSION ITEM FILTER

Filter

OptionSet

Description

| Name | Display Name |
|--|--|
| <input checked="" type="checkbox"/> High school | <input type="checkbox"/> Baccalaureat |
| <input checked="" type="checkbox"/> No studies / Primary school | <input type="checkbox"/> Fara studi sau scoala primara |
| <input checked="" type="checkbox"/> Gymnasium studies | <input type="checkbox"/> Gimnaziul studii |
| <input checked="" type="checkbox"/> High school | <input type="checkbox"/> High school |
| <input checked="" type="checkbox"/> Higher education | <input type="checkbox"/> Licenta |
| <input type="checkbox"/> Higher Education | <input type="checkbox"/> Licenta universitara |
| <input type="checkbox"/> postgraduate | <input type="checkbox"/> Master/MBA/EMBA/Dr. |
| <input type="checkbox"/> Postgraduate studies (MBA, MA, ACCA, CFA, etc.) | <input type="checkbox"/> Master/MBA/EMBA/Dr. |

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

Insurance

For any banking product, you can select a pre-existing insurance or create a new one. To add a new one, 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

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. 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 | Bool | If you select this checkbox, the discount is calculated using the Banking Formula engine. |
| Is optional discount? | No | Bool | Selecting this checkbox results in the discount being applied only if the customer agrees to the discount. |
| Is percentage | No | Bool | 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

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 blue header for '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.

Risk Formulas

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

In the **Banking Product Formula** 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 | No | Text | Enter an appropriate name. |
| Banking Product | No | Option set | The name of the banking product is inserted automatically. |
| Formula Type | Yes | Option set | Select the type of formula configured before, e.g. scoring /eligibility. |
| Formula | Yes | Option set | Select the previously configured formula. IMPORTANT! The formula must be activated before attaching it to a product. |

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

The screenshot shows the 'Formula Mapping' page with the 'Input' tab selected. The 'FORMULA PARAMETER MAPPING' section contains the following parameters:

- Data Mapping Type:** Formula
- Master Entity:** FTOS_BNKAP_RetailApplicantData
- Operation Name:** EligibilityForApplicant
- Name:** EligibilityForApplicant_EligibilityForApplicant_1602250301662_RetailMortgage

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

1 Definition 2 Input 3 Output

FTOS_BNKAP_RetailApplicantData - Input

- Age
- Citizenship Id
- IsInAMLRiskList: false
- IsRetail: true
- MonthsActualJob: Employ Monts
- NetIncome: netIncome

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

1 Definition 2 Input 3 Output

FTOS_BNKAP_RetailApplicantData - Output

- KOAge: click to map
- KOnetIncome: click to map
- KOIsInAMLRiskList: click to map
- KOIsRetail: click to map
- KOMonthsActualJob: click to map
- KOCitizenship: click to map
- FinalResult: 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? €

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

CHILD CARE 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 Risk Formulas

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

Insert **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

TEST SCENARIO

Test Scenario Type

Formula type 1

| Key | Value |
|---------------|------------|
| Company | Test value |
| InterestRate | Test value |
| Interest | Test value |
| InterestAccum | 100 |
| Age | 100 |
| NetIncome | 23.45 |

☐ Save Output Data

TEST SCENARIO OUTPUTS

| Name |
|---------|
| No data |

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**.

1 Main Info2 Details3 Availability4 Dimensions5 Risk Formulas6 Test Risk Formulas7 Documents8 Associated Transactions9 History

TEST SCENARIOS

| Name |
|---|
| Corporate Loan for IT companies-19.10.2020_16.06.21 |
| Corporate Loan for IT companies-19.10.2020_16.06.21 |
| Corporate Loan for IT companies-19.10.2020_16.07.14 |

Documents

The **Documents** tab contains all the attached documents available for a product. The previously associated documents are displayed in the **Banking Product Documents** section.

1 Main Info2 Details3 Availability4 Dimensions5 Risk Formulas6 Test Risk Formulas7 Documents8 Associated Transactions9 History

Banking Product Document

| ReportId | Banking Copies No | Operation Code |
|--------------|-------------------|----------------|
| AContractLG | 1 | |
| LoanContract | 2 | |

Banking Product Agreement

| Code |
|------|
| |

MANAGING BANKING PRODUCTS

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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 | Bool | Select if the document is mandatory. |
| Includes Debtor | Bool | Select if the document includes the debtor. |
| Includes Coborrower | Bool | Select if the document includes the co-borrower. |
| Requires Signature | Bool | Select if the document requires to be signed. |
| Is accord | Bool | Select if the document represents the accord. |

ADD BANKING PRODUCT DOCUMENT

Banking Product Document

Operation Code: 113559 Banking Copies No: 2 Report: Document Type: Credit Application

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.

The agreements that a customer needs to go through are displayed in the **Banking Products Agreement** 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 | Bool | 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](#).

Associated Transactions

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](#).

Transactions types that are performed to and from a banking product are displayed in the **Associated Transactions** tab.

For each banking product, you must select a bank account to be used for transactions. Next to the **Self Bank Account For Transactions** 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.

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

| Field | Required | Data Type | Details |
|-------------------------------|----------|------------|--|
| Transactions Operations Type | Yes | Option set | <p>This field makes the connection with the transaction motor of bank accounts. Select one of the methods defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div> |
| Is Automatic Transaction | Yes | Bool | This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations. |
| Is System Transactions | No | Bool | 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. |
| Name | Yes | Text | Name of the transaction type. |
| Transaction Code | Yes | Text | The code of the transaction type. |
| Generates Accounting Entry | Yes | Bool | This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity. |
| Source Entity ID | Yes | Option set | The ID of the entity referenced by the accounting systems. |
| Generate New Contract Version | No | Bool | This checkbox allows you to specify if a new contract version should be generated by this transaction type. |

| Field | Required | Data Type | Details |
|-----------------|----------|-----------|---|
| Commission Type | No | Lookup | The transaction type for which this transaction type is applicable. |

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 415](#)).

GL Settings

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.

BANKING PRODUCT GL ACCOUNTS

| Product | Accounting System | Accounting Scope | Item | GL Account |
|----------|-------------------|------------------|----------------|------------------------|
| TestPack | 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:

ADD BANKING PRODUCT GL ACCOUNT

BANKING PRODUCT GL ACCOUNT

Product: Card Blue Accounting System: 0001

Accounting Scope: CurrentAccount Item: Front-end Fee GL Account: 20111 Discount

| 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.

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 in Developer mode.
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 | |
|--------------------------|------------|---------------------------|-----------|--------------|---------------------|------------------------|------------|---|
| | AG_OD | Overdraft BankAccoun... | | | | | Approved | 1 |
| | SCADENTAR | TEST_SCADENTAR_SIM... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | TLEHFW | TL_EUR Holiday Shift F... | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | th | th | | | | | Approved | 1 |
| | TEST Laura | DD Current Account V... | Corporate | Bank Account | Current Account | | Approved | 1 |
| | TestA | Duplicate - 4 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | 3456 | Card_And | Corporate | Bank Account | Deposit | Fix Deposit Collateral | Unapproved | 1 |
| | testcancel | Duplicate - 5 | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |
| | OL VND | Corporate Term Loan ... | Corporate | Loan Term | Loan Term Secured | | Approved | 1 |
| | LoanEURPHF | LoanEURPHfee | Corporate | Loan Term | Loan Term Unsecured | | Approved | 1 |

5 10 20 1 2 3 4 5 6 7 8 9

In 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.

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 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. [Risk Formulas](#) - In this tab, you can attach a formula that triggers calculations to determinate the eligibility of a customer, for example.
6. [Test Risk Formulas](#) - Use this tab to test the formula attached above before displaying it in a digital journey.
7. [Documents](#) - This tab contains all the attached documents available for a product.
8. [Associated Transactions](#) - Transactions that are done to and from a banking product are found in this tab.
9. [History](#) - This tab displays the versions of the product, along with workflow status and the user who modified the product.
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, image and features.

The following fields are available:

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

| Field | Required | Data Type | Details |
|--------------------|----------|------------|---|
| Class | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subclass | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Category | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Subcategory | No | Option set | This field is used to place the product in a hierarchy. For more information, see "Product Hierarchy" on page 390 |
| Start Date | Yes | Date | The date when the product becomes available. |
| End Date | Yes | Date | The last date from when the product is available. From that date forward, the product is no longer available. |
| Benefits | No | Text area | Insert the advantages of owning the banking product. You can format the text in the text editor window. |
| Description | No | Text area | Write any description or additional text here. |
| Product Image | No | File | Insert an image representative for the product. |
| Document | No | File | Insert the document representative for the product. |
| 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.

IMPORTANT! For term loans, select Product Type = **Term Loan**.

The screenshot shows the 'Main Information' tab of the Banking Product Factory. The form is divided into several sections: Product Type (Term Loan), External Code (EUR1), Banking Product Code (TL_EUR), Name (TermLoanTest), Class (Corporate), SubClass (Loan Term), Category (Loan Term Unsecured), SubCategory, Start Date (27/05/2021), and End Date (27/05/2029). Below these are sections for Benefits (with a rich text editor) and Description (with a text area).

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 |
|-----------------|----------|------------|---|
| Banking Product | No | Option set | Choose the name of the product. |
| Is main feature | No | Bool | Select the checkbox if it is the major feature. |
| Feature | No | Text | The name of the feature. |

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

In the **Product Classifications** 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, or create a new one by clicking **Insert** and filling in the following fields:

| 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. |

| Field | Required | Data Type | Details |
|------------|----------|----------------|--|
| 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. |

The **Contract Classifications Section** is displayed after saving the classification item record and allows you to insert existing contracts. The following information is displayed here:

| Field | Details |
|---------------------|--|
| Contract | The number of the contract using this classification. |
| Code | The code of the classification item. |
| Name | The name of the classification item. |
| Classification Type | The type of the classification. |
| Valid From | The date from which the classification item is valid. |
| Valid To | The date until which the classification item is valid. |

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 |
|-------------------|----------|------------|--|
| Bank Account Type | Yes | Option set | <p>Choose one from the following:</p> <ul style="list-style-type: none"> • Current Account • Savings Account • Fixed Deposit Account • Term Deposit Account • Loan Term Account. |

| Field | Required | Data Type | Details |
|----------------------|----------|--------------|--|
| Is Revolving | No | Bool | <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> NOTE 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. </div> |
| Auto Disbursement | Yes | Bool | Specifies if the disbursement is automatically performed when the contract is approved. |
| Max No Disbursements | No | Whole number | The maximum number of disbursements that can be configured for this product. |

| Field | Required | Data Type | Details |
|--|----------|--------------|--|
| Is Guaranteed | Yes | Bool | <p>This checkbox marks the product as secured or unsecured.</p> <div> NOTE The Collateral Cover Percent field appears when you select this checkbox. </div> |
| Activation Tranches On Document Submission | No | Bool | Tranches to be granted after certain documents are submitted. |
| Allow Collateral Partial Release | No | Bool | 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. |
| Collateral Cover Percent | No | Whole number | The percent that the collateral person on the contract pays. It usually is over 100%. |
| Allow CoDebtor | No | Bool | Select if another debtor exists for this product. |
| Allow Refinancing | No | Bool | Select if the account can be refinanced for this product. |
| Number of CoDebtors | No | Text | Set the maximum number of debtors possible for this product. |

1 Main Info2 Details3 Availability4 Dimensions5 Risk Formulas6 Test Risk Formulas7 Documents8 Associated Transactions9 History10 GL Settings

General Data

Bank Account Type

Loan Term Account

Is Revolving

☐

Auto Disbursement

☒

Max No Disbursements

Is Guaranteed

☒

Allow Collateral Partial Release

☒

Collateral Cover Percent

120

Allow CoDebtor

☐

Allow Refinancing

☒

Max No. Of CoDebtors

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

| 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 |
|--|----------|------------|---|
| Repayment Allocation Method | Yes | Option set | The repayment allocation method represents the recovery order of amounts from repayment notifications. You can specify if charges should be recovered with priority or maybe interest or principal. You can also split order by number of days overdue. Select a repayment allocation method from the list. |
| Holiday Shift For Repayment Installments | Yes | Bool | <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 appears if you select this checkbox.</p> </div> |

| 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 last working day before the initially calculated due date. • Backward - the due date is shifted to the next working day after the initially calculated due date. <p>Default value: Forward.</p> |
| Defer Due Date | Yes | Bool | <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> |
| Grace Type | No | Option set | <p>Select one from the list:</p> <ul style="list-style-type: none"> • Both • Principle • Interest. |

| Field | Required | Data Type | Details |
|--------------------------|----------|--------------|--|
| Product Grace | No | Option set | Select one from the list. |
| Grace Days for Repayment | No | Whole number | Select one from the list. Insert the number of days for which the grace applies. |
| Penalty for grace period | No | Bool | <p>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.</p> <p>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.</p> |

In the **Payment Schedule Types** section, you can insert or delete types. To insert a new payment schedule type, click **Insert Existing** and select one of the types.

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.

In the **Product Guarantees** section, presented if the **Is Guaranteed** checkbox was selected earlier, you can insert or delete guarantees. To insert a guarantee, click the **Insert Existing** button and select one of the following:

- Cash collateral
- Real estate.

To insert a new guarantee, click **Insert** and fill in the name, code and select the guarantee type.

The **Product Destination Types** section allows for insertion or removal of existing destinations. 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.

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.

| CURRENT STATUS | NEXT STATUS | CODE | PRODUCT | START DATE | END DATE | VERSION | VERSION DATE |
|----------------|-------------|--------|---------------------|------------|------------|---------|------------------|
| APPROVED | CLOSED | CA VND | Current Account VND | 01/01/2020 | 31/03/2025 | 1 | 27/03/2020 02:00 |

Associated Products

| Name |
|---------------------------|
| Fixed Deposit Account VND |
| Fixed Deposit Account VND |
| Fixed Deposit Account VND |
| Fixed Deposit Account VND |
| Promissory Note |
| Promissory Note VND |
| Promissory Note VND |

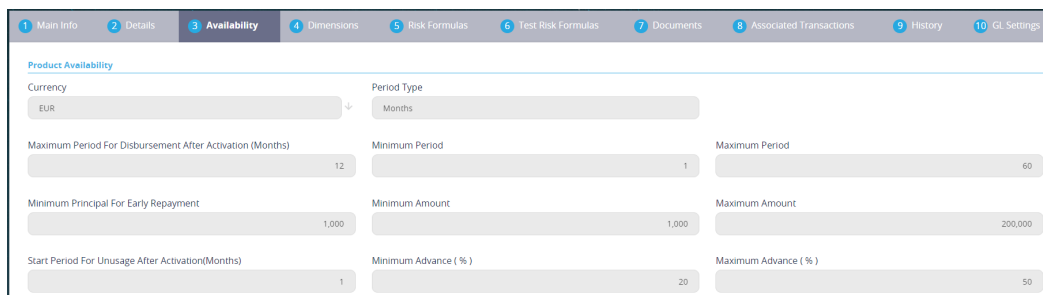
Click the **Save and Reload** button at the top right corner of the page.

In the **Disbursement Matrix** section, create or insert existing disbursement tranches, 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. 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.

Availability

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



The screenshot shows the 'Availability' tab in the Banking Product Factory interface. The tab is selected, and the 'Product Availability' section is visible. The fields are as follows:

| Field | Value |
|---|---------|
| Currency | EUR |
| Period Type | Months |
| Maximum Period For Disbursement After Activation (Months) | 12 |
| Minimum Period | 1 |
| Maximum Period | 60 |
| Minimum Principal For Early Repayment | 1,000 |
| Minimum Amount | 1,000 |
| Maximum Amount | 200,000 |
| Start Period For Unusage After Activation (Months) | 1 |
| Minimum Advance (%) | 20 |
| Maximum Advance (%) | 50 |

The following fields are available:

| Field | Required | Data Type | Details |
|----------|----------|------------|---|
| Currency | Yes | Option set | Choose the currency for this banking product. |

| Field | Required | Data Type | Details |
|---|----------|--------------|---|
| Period Type | No | Option set | <p>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 selected in the Details tab. </div> |
| Maximum Period For Disbursement After Activation (Months) | No | Whole Number | The maximum period of disbursement after the this option is set. The number of months during which the disbursement must be made. |
| 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 Principal For Early Repayment | No | Whole Number | The minimum principal for when early repayments are made. |
| Minimum Amount | No | Whole Number | The minimum amount of the product for which the bank opens a contract. |

| Field | Required | Data Type | Details |
|--|----------|--------------|---|
| 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 start period for unused amount after the activation. |
| 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. |

In the **Availability Rules** section you can select the item filters for the banking product. For more details, see "[Product Filter](#)" on page 386.

Availability Rules

PRODUCT AVAILABILITY ITEM FILTERS

| Description |
|--|
| Account is in Persona - Customers with age between 25-35 |
| Age >= 25 - 35 |
| DateValue = 2020-08-17 |

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

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. Click the **Insert** button to add a covenant to the product. You can select from 3 possible covenants:

- *Borrowers should perform tax obligations*: the lenders expect the borrowers to perform their tax obligations to both the business and towards their employees. This covenant is of type affirmative.

- *Lender can monitor borrower's current ratio:* the lender may continuously monitor the borrower's current ratio to ensure it stays relatively attractive and promising. This covenant is of type financial.
- *Lender posses the right to prevent merges or acquisitions:* a clear stipulation that the lender possesses the right to prevent merges of acquisitions without proper notification or full knowledge of the process. This covenant is of type negative.

Each covenant can be attributed a value, an availability period, and a review frequency in months.

After all configurations are done, click the **Save and Reload** button.

For example, this is how it displays within a Digital Journey in the FintechOS Portal:

The screenshot shows a web interface titled "EDIT LOAN APPLICATION" with a sub-header "Personalize your loan". It features two horizontal sliders. The first slider, labeled "Amount", has a range from 15000 to 999999 and a current value of 507500. The second slider, labeled "Loan Period", has a range from 60 to 420 and a current value of 240. To the right of the sliders are input fields showing the values "€ 507500" and "240". At the bottom, a summary line states "Total borrowed amount € 507499". The interface also includes a top navigation bar with "CURRENT STATUS: INITIALIZED" and "NEXT STATUS: CHOOSE STATUS -".

Dimensions

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

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 > Banking Product Factory for Enterprise > Banking Product Dimensions menu** which contains several other embedded menus.

Interest & Commissions

Click **Insert**. 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 | Bool | 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** 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 386 . |
| 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. |

| Field | Required | Data Type | Details |
|------------------------------|----------|------------|---|
| 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 386 . |
| 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 bool for the values you wish to include in the filter. |

EDIT INTEREST & COMMISSION ITEM FILTER

INTEREST & COMMISSION ITEM FILTER

Filter:

OptionSet:

Description:

| Name | Display Name |
|--|--------------------------------|
| <input checked="" type="checkbox"/> High school | Bacalaureat |
| <input checked="" type="checkbox"/> No studies / Primary school | Fara studii sau scoala primara |
| <input checked="" type="checkbox"/> Gymnasium studies | Gymnasium studies |
| <input checked="" type="checkbox"/> High school | High school |
| <input checked="" type="checkbox"/> Higher education | Licenta |
| <input type="checkbox"/> Higher education | Licenta universitara |
| <input type="checkbox"/> postgraduate | Master/MBA/EMBA/Dr. |
| <input type="checkbox"/> Postgraduate studies (MBA, MA, ACCA, CFA, etc.) | Master/MBA/EMBA/Dr. |

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

Insurance

For any banking product, you can select a pre-existing insurance or create a new one. To add a new one, 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.

EDIT INSURANCE ITEM

INSURANCE ITEM

Banking Product: Docs_Test

Code: 123

Item Name: Docs_Test_Insurance

Insurance List: Test_Insurance

Start Date: 23/01/2021

End Date: 24/01/2022

Details:

INSURANCE ITEM FILTERS

+ Insert X Delete Export Refresh

Description

Docs_Test == 18 - 65

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

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. 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 | Bool | If you select this checkbox, the discount is calculated using the Banking Formula engine. |
| Is optional discount? | No | Bool | 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 | Bool | 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

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. |

| Field | Required | Data type | Description |
|---------------|----------|------------|--|
| 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 mobile application interface for editing a loan application. At the top, there's a navigation bar with 'EDIT LOAN APPLICATION'. Below it, a section titled 'Eligibility Questions' contains 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 has three main sections: '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 area.

Risk Formulas

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

In the **Banking Product Formula** 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](#).

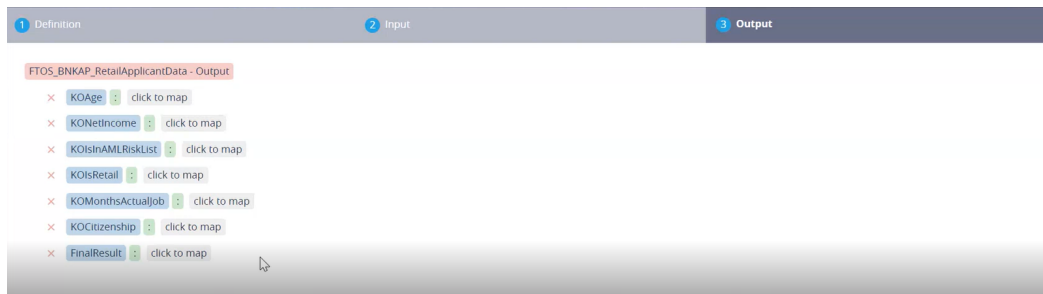
In the **Add Banking Product Formula** page, fill in the following fields:

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

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.



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 Risk Formulas

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

Insert **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

TEST SCENARIO

Test Scenario Type

Formula type 1

| Key | Value |
|----------------|------------|
| Clientship | Test value |
| InterestRate | Test value |
| Interest | 100 |
| InterestMargin | 100 |
| Age | 28.45 |
| Residence | |

☐ Save Output Data

Calculate

TEST SCENARIO OUTPUTS

Insert

Delete

Export

Refresh

Name

No data

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**.

1 Main Info2 Details3 Availability4 Dimensions5 Risk Formulas6 Test Risk Formulas7 Documents8 Associated Transactions9 History

TEST SCENARIO

Insert

Delete

Export

Refresh

Name

Corporate Loan For IT companies-19-10-2020, 16-06-21

Corporate Loan For IT companies-19-10-2020, 16-06-21

Corporate Loan For IT companies-19-10-2020, 16-07-14

Documents

The **Documents** tab contains all the attached documents available for a product. The previously associated documents are displayed in the **Banking Product Documents** section.

1 Main Info2 Details3 Availability4 Dimensions5 Risk Formulas6 Test Risk Formulas7 Documents8 Associated Transactions9 History

Banking Product Document

Insert

Delete

Export

Refresh

| ReportId | Banking Copies No | Operation Code |
|--------------|-------------------|----------------|
| ACContractLG | 1 | |
| LoanContract | 2 | |

Banking Product Agreement

Insert

Delete

Export

Refresh

| Code |
|------|
| |

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

MANAGING BANKING PRODUCTS

323

| 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 | Bool | Select if the document is mandatory. |
| Includes Debtor | Bool | Select if the document includes the debtor. |
| Includes Coborrower | Bool | Select if the document includes the co-borrower. |
| Requires Signature | Bool | Select if the document requires to be signed. |
| Is accord | Bool | 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

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

The agreements that a customer needs to go through are displayed in the **Banking Products Agreement** 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 | Bool | 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](#).

Associated Transactions

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.
- **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](#).

Transactions types that are performed to and from a banking product are displayed in the **Associated Transactions** tab.

For each banking product, you must select a bank account to be used for transactions. Next to the **Self Bank Account For Transactions** 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.

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

| Field | Required | Data Type | Details |
|------------------------------|----------|------------|--|
| Transactions Operations Type | Yes | Option set | <p>This field makes the connection with the transaction motor of bank accounts. Select one of the methods defined within the system.</p> <div> NOTE There is no integration at this point with a payment gateway. </div> |
| Is Automatic Transaction | Yes | Bool | <p>This checkbox marks the transaction as automatic. If selected here, then you cannot select it within the contract operations.</p> |

| Field | Required | Data Type | Details |
|-------------------------------|----------|------------|--|
| Is System Transactions | No | Bool | 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. |
| Name | Yes | Text | Name of the transaction type. |
| Transaction Code | Yes | Text | The code of the transaction type. |
| Generates Accounting Entry | Yes | Bool | This checkbox allows you to create an entry in the general ledger. It generates records in the Accounting Entry entity. |
| Source Entity ID | Yes | Option set | The ID of the entity referenced by the accounting systems. |
| Generate New Contract Version | No | Bool | This checkbox allows you to specify if a new contract version should be generated by this transaction type. |
| Commission Type | No | Lookup | The transaction type for which this transaction type is applicable. |

1 Main Info
2 Details
3 Availability
4 Dimensions
5 Risk Formulas
6 Test Risk Formulas
7 Documents
8 **Associated Transactions**
9 History
10 GL Settings

Self Bank Account Associated With The Product

Self Bank Account For Transactions

NOTEXISTING-01

TRANSACTION TYPES

+ Insert existing

- Remove existing

| <input type="checkbox"/> | Name |
|-------------------------------------|-------------------------|
| <input checked="" type="checkbox"/> | Q |
| <input type="checkbox"/> | Accruals and Provisions |
| <input type="checkbox"/> | Disbursement |
| <input type="checkbox"/> | Early Repayment |
| <input type="checkbox"/> | Payment Holiday |
| <input type="checkbox"/> | Repayment |
| <input type="checkbox"/> | Repayment Notification |
| <input type="checkbox"/> | Reschedule Currencies |

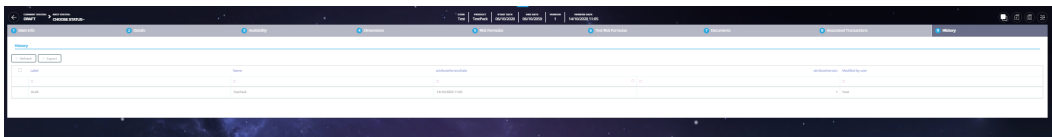
You can also edit the information in the **Transaction Value Types**, **Transaction Item Accounting Configurations** and **Transaction Accounting Models** sections. Read more details about Transaction Types in the **Operational Ledger** User Guide.

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 415](#)).



GL Settings

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.

BANKING PRODUCT GL ACCOUNTS

| <input type="checkbox"/> Product | Accounting System | Accounting Scope | Item | GL Account |
|----------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| | <input type="text" value="Q"/> | <input type="text" value="Q"/> | <input type="text" value="Q"/> | <input type="text" value="Q"/> |
| TestPack | 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:

| 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. |
| 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.

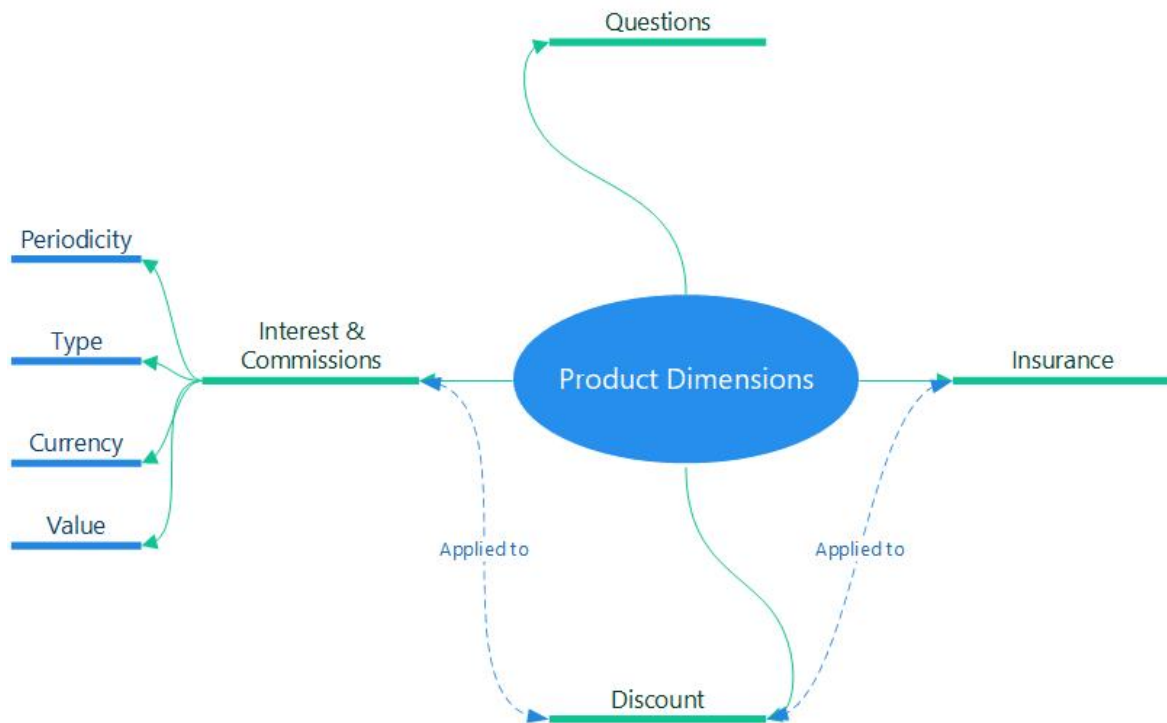
Product Dimensions

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.

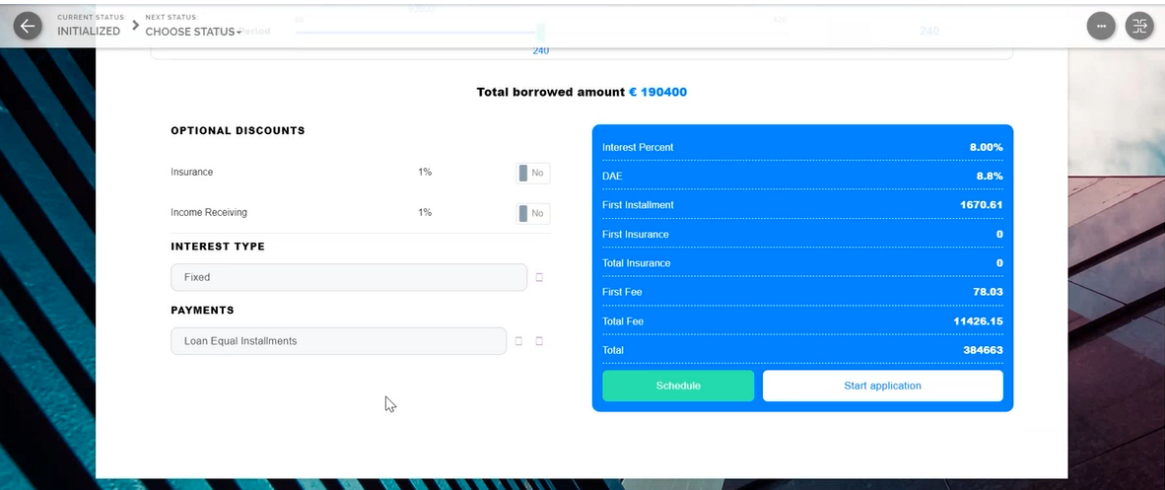
| | |
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| | |
|--|-----|
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Interests

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:



To manage interests:

1. Log into Innovation Studio in Developer mode.
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.

| INTEREST LIST | | | |
|--------------------------|-------|---------------------------------|---------------|
| <input type="checkbox"/> | Code | Name | Interest Type |
| | Q | Q | Q |
| | asdsa | as | Variable |
| | FB12M | Corporate Floating BIBOR 1 Year | Variable |
| | FB1M | Corporate Floating BIBOR 1M | Variable |
| | FBM2 | Corporate Floating BIBOR 2M | Variable |
| | FB3M | Corporate Floating BIBOR 3M | Variable |
| | FB6M | Corporate Floating BIBOR 6M | Variable |
| | CC11 | Credit Card Interest1 | Variable |

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

INTEREST

Code

BIB1M

Name

BIBOR 1 Month

Is Default

☐

Use Banking Formula

☐

Interest Type

Base Type

Reference Interest Period

1M

Is Penalty

☐

Is Credit Line Interest

☐

For Sight Deposit

☐

Is Debit Order Interest

☐

Description

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. |
| Name | Yes | Text | Insert a name. |
| Is Default | No | Bool | Select the checkbox if the interest is a default one. |
| Use Banking Formula | No | Bool | 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. • Banded - an interest rate that can be defined as a collection of values that is applied depending on the amount. For example, the bank wants to apply an |

| Field | Required | Data Type | Details |
|---------------|----------|-----------|--|
| | | | <p>interest rate of 5% for borrowed amount between 1 and 10,000, an interest rate of 4.5 % for the amounts between 10,001 and 20,000, and an interest rate of 4% for amounts surpassing 20,001.</p> <div> <p>IMPORTANT! If you choose Variable, a new field Base Interest is displayed.</p> <p>Banded interest can be used only for Current Account with Overdraft banking products.</p> </div> |
| Base Interest | Yes | Lookup | Only displayed for variable interest types. Select (or insert) the base type interest used for calculating the variable interest. |

| Field | Required | Data Type | Details |
|---------------------------|----------|------------|---|
| Reference Interest Period | No | Option set | <p>Choose the interest reference period (where M = months, Y = years):</p> <ul style="list-style-type: none"> • 1M • 1Y • 2M • 3M • 6M |
| For Sight Deposit | No | Bool | 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 | Bool | 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. |
| Is Penalty | No | Bool | <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 | Bool | <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 | Bool | 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 | Bool | Interest that is applicable to the credit line. |
| Is Debit Order Interest | No | Bool | 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:

| Field | Data Type | Description |
|------------|--------------|--|
| Value | Numeric | Interest rate percentage. |
| Status | Option set | Select either Active or Draft to enable or disable the interest rate. |
| Begin Date | Date | Select the day when the interest rate becomes applicable. |
| End Date | Date | Select the last day when the interest rate is applicable. |
| Shock | Whole Number | Percentage threshold at which the interest no longer follows the base value, e.g. if the interest increases by 5%, that 5% is the shock suffered and the interest no longer is calculated at base value. |

EDIT INTEREST VALUE

INTEREST VALUE

Value Status

Valid From Valid To

Shock

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. |

| Field | Data Type | Description |
|-------------------------------|--------------|---|
| 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. |
| 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. |

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 a digital journey interface for configuring a loan. 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 set to € 190400. The interface is divided into several sections:

- OPTIONAL DISCOUNTS:** Includes 'Insurance' and 'Income Receiving', both set to 1% with a 'No' toggle.
- INTEREST TYPE:** A dropdown menu showing 'Fixed'.
- PAYMENTS:** A dropdown menu showing 'Loan Equal Installments'.
- Summary Table:** A blue-bordered table on the right side listing various financial metrics and their values.

At the bottom right, there are two buttons: 'Schedule' (green) and 'Start application' (white).

| Summary Table Data | |
|--------------------|----------|
| Interest Percent | 8.00% |
| DAE | 8.8% |
| First Installment | 1670.61 |
| First Insurance | 0 |
| Total Insurance | 0 |
| First Fee | 78.03 |
| Total Fee | 11426.16 |
| Total | 394663 |

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:

INTEREST

| | | | |
|---|---|---|---|
| Code EU 6M | Name Euribor 6M | Is Default <input type="checkbox"/> | Use Banking Formula <input type="checkbox"/> |
| Interest Type Variable | Base Interest Euribor 6M Reference | | |
| Is Penalty <input type="checkbox"/> | | For Sight Deposit <input type="checkbox"/> | |
| Is For Overdraft <input type="checkbox"/> | Is Credit Line Interest <input type="checkbox"/> | Is Debit Order Interest <input type="checkbox"/> | |
| Description | | | |

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:

INTEREST

Code: FI6 Name: Corporate Fix Interest 6% Is Default: ☐ Use Banking Formula: ☐

Interest Type: Fixed

Is Penalty: ☐ For Sight Deposit: ☐

Is For Overdraft: ☐ Is Credit Line Interest: ☐ Is Debit Order Interest: ☐

Description:

INTEREST VALUE

+ Insert X Delete Export Refresh

| Value | Status | Valid From | Valid To |
|-------|--------|------------|------------|
| 6.00 | Active | 01/01/2019 | 31/10/2019 |
| 2.25 | Active | 01/11/2019 | 31/12/2019 |
| 6.00 | Active | 01/01/2020 | 31/12/2021 |

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:

INTEREST

Code: BIB1M Name: BIBOR 1 Month Is Default: ☐ Use Banking Formula: ☐

Interest Type: Base Type Reference Interest Period: 1M

Is Penalty: ☐ For Sight Deposit: ☐

Is For Overdraft: ☐ Is Credit Line Interest: ☐ Is Debit Order Interest: ☐

Description:

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:

INTEREST

Code: FB1M Name: Corporate Floating BIBOR 1M Is Default: ☐ Use Banking Formula: ☐

Interest Type: Variable Base Interest: BIBOR 1 Month

Is Penalty: ☐ For Sight Deposit: ☐

Is For Overdraft: ☐ Is Credit Line Interest: ☐ Is Debit Order Interest: ☐

Description:

INTEREST VALUE

+ Insert X Delete Export Refresh

| | Value | Status | Valid From | Valid To |
|--|-------|--------|------------|------------|
| | 2.00 | Active | 01/01/2020 | 01/01/2022 |
| | 1.90 | Active | 01/07/2019 | 31/12/2019 |
| | 1.80 | Active | 01/01/2019 | 30/06/2019 |

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:

INTEREST

Code: FixFloat

Name: FixToFloat

Is Default: ☐

Use Banking Formula: ☐

Interest Type: Collection

Is For Overdraft: ☐

Is Credit Line Interest: ☐

Is Debit Order Interest: ☐

Description:

INTEREST RATES COLLECTIONS

| <input type="checkbox"/> Interest | Collection Item Start Date | Collection Item End Date | Start Period (Installment No) | End Period (Installment No) |
|-----------------------------------|----------------------------|--------------------------|-------------------------------|-----------------------------|
| Corporate Fix Interest 6% | 01/01/2021 | 31/01/2050 | 1 | 12 |
| Corporate Floating BIBOR 3M | 01/01/2021 | 31/01/2050 | 13 | 300 |

Banded Interest

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 = Banded and entering values for determined intervals of time. Later, create a collection type interest, select the **Is For Overdraft** checkbox, and use the previously defined banded interests to define the specify 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 FOR ENTERPRISE USER GUIDE

INTEREST

Code

BandedEUR

Name

BandedEUR

Interest Type

Collection

Is For Overdraft

☒

BANDED INTERESTS

+ Insert

X Delete

Export

Refresh

| <input type="checkbox"/> | Interest | Min Utilized Amount | Max Utilized Amount | Collection Valid From | Collection Valid To |
|--------------------------|--------------|---------------------|---------------------|-----------------------|---------------------|
| <input type="checkbox"/> | BandedEUR_C1 | 0.00 | 999.99 | 01/01/2021 | 31/12/2021 |
| <input type="checkbox"/> | BandedEUR_C3 | 4,000.00 | 10,000,000.00 | 01/01/2021 | 31/12/2021 |
| <input type="checkbox"/> | BandedEUR_C2 | 1,000.00 | 3,999.99 | 01/01/2021 | 31/12/2021 |

INTEREST

Code

BandedEUR_C1

Name

BandedEUR_C1

Interest Type

Banded

Base Interest

Description

Fix 5%

INTEREST VALUE

+ Insert

X Delete

Export

Refresh

| <input type="checkbox"/> | Value | Status | Valid From | Valid To |
|--------------------------|-------|--------|------------|------------|
| <input type="checkbox"/> | 5.00 | Active | 01/01/2021 | 31/12/2021 |

INTEREST

Code

BandedEUR_C2

Name

BandedEUR_C2

Interest Type

Banded

Base Interest

IRCC 3M

Description

IRCC 3M + 1

INTEREST VALUE

+ Insert

X Delete

Export

Refresh

| <input type="checkbox"/> | Value | Status | Valid From | Valid To |
|--------------------------|-------|--------|------------|------------|
| <input type="checkbox"/> | 1.00 | 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 333](#): variable interest, base type and fixed interest.

To manage interest lists:

1. Log into Innovation Studio in Developer mode.
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.

INTEREST LIST LIST

|  Name | |
|--|------------------------------------|
|  | |
| | Corporate Current Account |
| | Corporate Fix Deposit Interest USD |
| | Corporate Fix Deposit Interest VND |
| | Corporate Interest 10 |
| | Corporate Interest VND |
| | Corporate Overdraft Line |
| | Credit Card Interest List |

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

INTEREST LIST

Name: Corporate Current Account

INTEREST

+ Insert existing X Remove existing

| Name | Code | Description |
|---------------------------|-------|-------------|
| Corporate Current Account | Co CA | |

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.

Commission Types

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 and so on.

To manage commission types:

1. Log into Innovation Studio in Developer mode.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory-> Banking Product Dimensions**.
4. Click **Commission Types** to open the **Commission Types List** page.

| COMMISSION TYPES LIST | |
|---|------------------|
| <input type="checkbox"/> Name | Periodicity Type |
| Q | Q |
| Administration Fee | Monthly |
| Commission Undrawn Amount (overdraft) Monthly | Monthly |
| Commission Undrawn Amount (overdraft) Once | Once |
| Commission Unusage Monthly | Monthly |
| Commission Unusage Once | Once |

5. In 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.

The **Edit Commission Type** page allows you to configure commission type settings.

| EDIT COMMISSION TYPE | |
|----------------------|---------------------|
| COMMISSION TYPE | |
| Commission Schema | Payment Holiday |
| Name | Payment Holiday Fee |
| Periodicity Type | Once |
| Operation Item | Payment Holiday Fee |

Adding Commission Types

To create a new commission type, click the **Insert** button on the top right side of the page. In the newly opened **Add Commission Type** page, fill in the following fields from the **Commission Type** section:

| Field | Data Type | Details |
|-------------------|------------|--|
| Commission Schema | Lookup | Select the schema to which this commission type belongs, if any. |
| Name | Text | Enter the name of the commission type. |
| Periodicity type | Option set | Automatically filled-in when you choose the commission type. |
| Operation Item | Lookup | Select the operation item to which this commission type should be applied. |

Click the **Save and Reload** button at the top right corner of the page. The new commission type is created and ready to be used.

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 in Developer mode.
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.

| COMMISSION LIST | | | | | | |
|--------------------------|-----------------------------|---------------------|----------|-----------------------------|------------------|-------------------------------------|
| <input type="checkbox"/> | Name | Commission Type | Currency | Commission Percent Appli... | Periodicity Type | Commission Value Is Perc... |
| <input type="checkbox"/> | CA Administration Fee | Administration Fee | RON | | Monthly | <input type="checkbox"/> |
| <input type="checkbox"/> | Cancel Fee | Payment Holiday Fee | EUR | | Once | <input type="checkbox"/> |
| <input type="checkbox"/> | ComFormulaPercentage | Management Fee | USD | Remaining Value | Monthly | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | Commission Unused Armo... | Commission Unusage | EUR | Unused Amount | Once | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | Corporate Current Acccou... | Management Fee | VND | | | <input checked="" type="checkbox"/> |

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.

| EDIT COMMISSION | | | | | | | | | | | | | | | | | |
|---|--------------------|------------------|------------|------------|--------|--------------------------|--------------------|------------------|------------|----------|--------|--------------------------|------|--|------------|------------|--------|
| <div>COMMISSION</div> <div> <div>Name</div> <div>Corporate Loan Term Front-End Fee VND</div> <div>Commission Type</div> <div>Front-end Fee</div> </div> <div> <div>Periodicity Type</div> <div>Once</div> <div>Currency</div> <div>VND</div> <div>Status</div> <div>Active</div> </div> <div> <div>Is For Unusage</div> <div><input type="checkbox"/></div> <div>Commission Value Is Percentage</div> <div><input checked="" type="checkbox"/></div> <div>Commission Percent Applied To</div> <div>Financed Value</div> </div> <div> <div>Is Included Into Repayment Schedule Installment</div> <div><input type="checkbox"/></div> <div>Automatic Load On Contract</div> <div><input checked="" type="checkbox"/></div> <div>Mandatory For Applicant</div> <div><input checked="" type="checkbox"/></div> </div> <div> <div>Use Banking Formula</div> <div><input type="checkbox"/></div> </div> | | | | | | | | | | | | | | | | | |
| <div>COMMISSION VALUE</div> <div> <div> <div>+ Insert</div> <div>X Delete</div> <div>Export</div> <div>Refresh</div> </div> <table border="1"> <thead> <tr> <th><input type="checkbox"/></th> <th>Commission Percent</th> <th>Commission Value</th> <th>Valid From</th> <th>Valid To</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>2.00</td> <td></td> <td>01.01.2020</td> <td>31.12.2020</td> <td>Active</td> </tr> </tbody> </table> </div> | | | | | | <input type="checkbox"/> | Commission Percent | Commission Value | Valid From | Valid To | Status | <input type="checkbox"/> | 2.00 | | 01.01.2020 | 31.12.2020 | Active |
| <input type="checkbox"/> | Commission Percent | Commission Value | Valid From | Valid To | Status | | | | | | | | | | | | |
| <input type="checkbox"/> | 2.00 | | 01.01.2020 | 31.12.2020 | 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. <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 | Bool | 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 | Bool | 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 | Bool | <p>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).</p> |

| Field | Data Type | Details |
|--------------------------------|-----------|---|
| Automatically load on contract | Bool | Select this checkbox if the commission should be automatically loaded on the contracts based on banking products using this commission. |
| Mandatory for applicant | Bool | 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 | Bool | Select the checkbox if the commission is to be defined with an attached business formula for value. |
| Is For Contract Version | Bool | <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> |

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.

EDIT COMMISSION VALUE

COMMISSION VALUE

Commission Percent

2

Commission Value

Valid From

24/04/2020

Valid To

24/04/2021

Status

Active

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. |
| 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. |
| Status | Option set | Select either Active or Draft to enable or disable the commission. |

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:

COMMISSION

Name: DFUNITS Commission Type: Administration Fee

Periodicity Type: Monthly Currency: EUR Status: Active

Is For Unusage: ☐ Commission Value Is Percentage: ☒ Commission Percent Applied To: Financed Value

Is Included Into Repayment Schedule Installment: ☒ Automatic Load On Contract: ☒ Mandatory For Applicant: ☒

Use Banking Formula: ☐ Is For Contract Version: ☐

When defining the payment schedule type detail, you only need to select the fee type and not the actual fee:

PAYMENT SCHEDULE TYPE DETAIL

Title: dfunit

Column Type: Fee Dimension Column Repayment Schedule: AdministrationFee Calculation Method: Effective Rate

Fee: Fee Type: Administration Fee Source: SourcePercent

Is Calculated In Advance?: ☐ Totalization For Grace Period: ☐

Operation Item: Loan Admin Fee Is calculated Upfront: ☐

- 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

Name: DFADVANCE Commission Type: Front-end Fee

Periodicity Type: Once Currency: EUR Status: Active

Is For Unusage: ☐ Commission Value Is Percentage: ☒ Commission Percent Applied To: Financed Value

Is Included Into Repayment Schedule Installment: ☐ Automatic Load On Contract: ☒ Mandatory For Applicant: ☒

Use Banking Formula: ☐ Is For Contract Version: ☐

COMMISSION VALUE

+ Insert X Delete Export Refresh

| Commission Percent | Commission Value | Valid From | Valid To | Status |
|--------------------|------------------|------------|------------|--------|
| 10.00 | | 14/06/2021 | 30/06/2021 | 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 VALUE

Commission Percent: 10 Commission Value:

Valid From: 14/06/2021 Valid To: 31/07/2021

Status: Active

- 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.

ADD COMMISSION VALUE

COMMISSION VALUE

Commission Percent: 12.5 Commission Value:

Valid From: 01/08/2021 Valid To: 31/12/2021

Status: Active

- 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 |
|--------------------|------------------|------------|------------|--------|
| 10.00 | | 14/06/2021 | 31/07/2021 | Active |
| 12.50 | | 01/08/2021 | 31/12/2021 | 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

Name

RepaymentFee EUR %

Commission Type

Repayment Fee

Periodicity Type

Once

Currency

EUR

Status

Active

Is For Unusage

☐

Commission Value Is Percentage

☒

Commission Percent Applied To

Payed Value

Is Included Into Repayment Schedule Installment

☐

Automatic Load On Contract

☐

Mandatory For Applicant

☐

Use Banking Formula

☐

Is For Contract Version

☒

COMMISSION VALUE

+ Insert

X Delete

Export

Refresh

| Commission Percent | Commission Value | Valid From | Valid To | Status |
|--------------------|------------------|------------|------------|--------|
| 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

FEES & COMMISSIONS

Refresh

| 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

| Operation Item | Value | Remaining/Value | Is Paid |
|----------------|--------|-----------------|-------------------------------------|
| Front-end Fee | 51.00 | 0.00 | <input checked="" type="checkbox"/> |
| Advance | 225.00 | 0.00 | <input checked="" type="checkbox"/> |

PAYMENT ALLOCATIONS

| Payment No. | Payment Date | Operation Item | Allocated Amount | DueDate | Delay (days) |
|-------------|--------------|----------------|------------------|------------|--------------|
| 9928 | 20/08/2021 | Front-end Fee | 51.00 | 20/08/2021 | 0 |
| 9928 | 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

Name: Commission Undrawn Amount (overdraft) EUR Monthly Commission Type: Commission Undrawn Amount (overdraft) Monthly

Periodicity Type: Monthly Currency: EUR Status: Active

Is For Unusage: ☐ Commission Value Is Percentage: ☒ Commission Percent Applied To: Unused Amount

Is Included Into Repayment Schedule Installment: ☒ Automatic Load On Contract: ☒ Mandatory For Applicant: ☐

Use Banking Formula: ☐ Is For Contract Version: ☐

COMMISSION VALUE

+ Insert X Delete Export Refresh

| Commission Percent | Commission Value | Valid From | Valid To | Status |
|--------------------|------------------|------------|------------|--------|
| 0.15 | | 01/01/2021 | 31/12/2021 | 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

Interest

Transaction Type

Early Repayment

Event Date

27/07/2021

Event Value

1,019.54

Charge Fee

Repayment Fee EUR

Repayment Fee Percent

Fee For Repayment

18.5

REPAYMENT VALUES

Repayment Principal Amount

1,000

Other Fees Total Value

0

Keep Contract Period

☒

Interest Value

1.04

Future Installments No

12

DETAILED INFO

| No. | Due Date | Remaining Value | Interest | Principal | Total Installment |
|-----|------------|-----------------|----------|-----------|-------------------|
| 1 | 27-07-2021 | 3,000.00 | 1.04 | 1,000.00 | 1,001.04 |
| 1 | 09-09-2021 | 6,000.00 | 7.28 | 598.04 | 605.32 |
| 2 | 09-09-2021 | 6,000.00 | 24.81 | 825.99 | 847.79 |
| 3 | 09-10-2021 | 5,423.43 | 22.60 | 832.16 | 854.76 |
| 4 | 09-11-2021 | 4,891.25 | 20.38 | 834.39 | 854.76 |
| 5 | 09-12-2021 | 4,336.87 | 18.15 | 836.61 | 854.76 |

EDIT REPAYMENT NOTIFICATION

REPAYMENT NOTIFICATION

No.

Contract

Currency

Notification Date

27/07/2021

Notification Date

27/07/2021

Total Amount

1,019.54

REPAYMENT NOTIFICATION DETAILS

| Operation Item | Value | Remaining Value | Is Paid |
|----------------|----------|-----------------|--------------------------|
| Repayment Fee | 18.50 | 18.50 | <input type="checkbox"/> |
| Loan 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:

EDIT INTEREST & COMMISSION ITEM

INTEREST & COMMISSION ITEM

Banking Product

TLAUTODISB

Code

OLIC

Start Date

27/01/2020

Interest List

TermLoan Eur

Minimum Interest Rate (%)

4

Item Name

Onboarding Loan I&C

End Date

04/04/2050

Commission List

Term Loan Eur

Is Negotiable

☒

EDIT COMMISSION LIST

COMMISSION LIST

Name

Term Loan Eur

COMMISSION

+ Insert existing

- Remove existing

☐

Name

☐

Commission Applied To Amount

☐

Commission to Remaining Value

☐

Corporate Loan Term Front-End Fee EUR

☐

New Contract Version Commission

☐

Payment Holiday Fee

☒

RepaymentFee EUR

The commission used within the example presented above is defined as follows:

COMMISSION

Name

RepaymentFee EUR

Commission Type

Repayment Fee

Periodicity Type

Once

Currency

EUR

Status

Active

Is For Usage

☐

Commission Value Is Percentage

☐

Is Included Into Repayment Schedule Installment

☐

Automatic Load On Contract

☐

Mandatory For Applicant

☐

Use Banking Formula

☐

Is For Contract Version

☒

COMMISSION VALUE

+ Insert

- Delete

Export

Refresh

| <input type="checkbox"/> | Commission Percent | Commission Value | Valid From | Valid To | Status |
|--------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="checkbox"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> | | 18.50 | 01/01/2021 | 31/12/2031 | Active |

PRODUCT DIMENSIONS

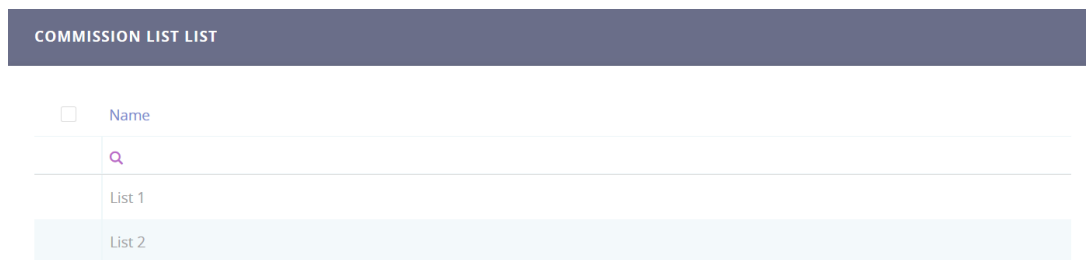
370

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 353](#) menu: Front-end fee & Management fee & Repayment fee.

To manage commission lists:

1. Log into Innovation Studio in Developer mode.
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.



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.

EDIT COMMISSION LIST

COMMISSION

Name: Comision Credit Classic

COMMISSION

+ Insert existing X Remove existing

| Name |
|---------------------------------------|
| Comision administrare 1% |
| Comision analiza dosar Credit Classic |

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 in Developer mode.
2. Click the main menu icon at the top left corner.
3. In the main menu, expand **Product Factory**.

- Click **Banking Product** to open the **Product List** page. Select the product where you want to add the filter.
- In the **Dimensions** tab, insert or edit an interest or a commission.

- In the **Interest & Commission Item Filters** section, click **Insert**.

| Field | Required | Data Type | Details |
|-------------------------|----------|------------|---|
| Filter | Yes | Option set | Select a filter created earlier in the "Product Filter" on page 386 . |
| 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. |

| Field | Required | Data Type | Details |
|------------------------------|----------|------------|---|
| 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 | | | |
| Filter | Yes | Option set | Select a filter created earlier in the "Product Filter" on page 386 . |
| 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. |

EDIT INTEREST & COMMISSION ITEM FILTER

INTEREST & COMMISSION ITEM FILTER

Filter:

OptionSet:

Description:

| <input checked="" type="checkbox"/> Name | DisplayName |
|--|--------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> highschool | Scălașorul |
| <input checked="" type="checkbox"/> No studies / primary school | Fără studii sau școală primară |
| <input checked="" type="checkbox"/> Gymnasium studies | Gymnasium studies |
| <input checked="" type="checkbox"/> High school | High school |
| <input checked="" type="checkbox"/> Higher education | Licență |
| <input type="checkbox"/> higherEducation | Licență universitară |
| <input type="checkbox"/> postgraduate | Master/MBA/EMBA/Dr. |
| <input type="checkbox"/> Postgraduate studies (MBA, MA, ACCA, CPA, etc.) | Master/MBA/EMBA/Dr. |

- 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 it is possible to select an existing insurance or to create a new one. To add a new one, follow these steps:

- Log into Innovation Studio in Developer mode.
- Click the main menu icon at the top left corner.
- In the main menu, expand **Product Factory-> Banking Product Dimensions**.
- Click **Insurances** to open the **Insurances List** page.

| INSURANCES LIST | |
|--------------------------|-------------------------------|
| <input type="checkbox"/> | Name |
| <input type="checkbox"/> | <input type="text" value=""/> |
| <input type="checkbox"/> | Full home insurance |
| <input type="checkbox"/> | Light home insurance |

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. |
| Period Type | Option set | Select the type of period for the insurance: <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 | Bool | If selected, then the insurance is mandatory for the customer. |

| Field | Data Type | Details |
|---|------------|---|
| Is mandatory for debtor | Bool | If selected, the insurance is mandatory for the debtor. |
| Is Included Into Repayment Schedule Installment | Bool | If selected, the insurance is included in the payment installments. |
| Class | Option set | Select the class of insurance for this specific insurance: <ul style="list-style-type: none"> • Credit insurance • Home insurance • Life insurance • Other insurance. |
| Insurance Value is Percentage | Bool | 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.

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 375](#) menu: Credit, Home, Life, and Other insurances.

To manage commission lists:

1. Log into Innovation Studio in Developer mode.
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 | |
|--------------------------|---|
| <input type="checkbox"/> | Name |
| |  |
| | Home insurances |

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

INSURANCE LIST

Name

Home insurances

FTOS_BP_INSURANCEXFTOS_BP_INSURANCELIST

+ Insert existing

X Remove existing

| | |
|--------------------------|----------------------|
| <input type="checkbox"/> | Name |
| | <div>Q</div> |
| | Full home insurance |
| | Light home insurance |

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 **Insurance** 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 in Developer mode.
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 333 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 353 menu. |
| Insurance | | | |

| Field | Required | Data Type | Details |
|-----------------|----------|------------|--|
| Insurance Class | Yes | Option set | Select one from the list. |
| Insurance | No | Option set | Select the exact insurance configured in the "Insurance" on page 375 menu. |

- Click the **Save and Reload** button at the top right corner of the page.
- In the **Discount** section, the products where the discount is attached is displayed. If it is empty, there is no banking product associated.

EDIT DISCOUNT DICTIONARY

DISCOUNT DICTIONARY

Name: Applied to Dimension: Interest Type:

DISCOUNTS

| Banking Product | Name | Start Date | End Date | Value Discount |
|-----------------|-----------------|------------|------------|----------------|
| Loan | Term Commission | 01/06/2020 | 31/05/2021 | 100.0000 |
| Loan | Term Commission | 01/06/2020 | 31/05/2021 | 100.0000 |

- 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. All questions are held in the [FTOS_BP_Question](#) entity. 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.

The screenshot shows a web application interface for editing a loan application. At the top, there's a blue header bar with the text 'EDIT LOAN APPLICATION'. Below this, 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 questions: 'DEPOSIT SOURCE' with a dropdown menu showing 'Select...', 'RETIREMENT DATE' with a date input field, 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. The interface also features a top navigation bar with 'CURRENT STATUS: INITIALIZED' and 'NEXT STATUS: CHOOSE STATUS'.

Adding Questions

1. Log into Innovation Studio in Developer mode.
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:

The screenshot displays two sections of the application. The top section, titled 'BANKING PRODUCT QUESTION', contains a form for adding a new question. It includes fields for 'Question' (with a text input 'Question1'), 'Question Type' (a dropdown menu showing 'Test'), 'Is for solicitant?' (a checkbox), 'Is for coborrower?' (a checkbox), 'Answer Entity' (a dropdown menu showing 'Account'), and 'Answer Field' (a dropdown menu showing 'Phone'). The bottom section, titled 'BANKING PRODUCTS', shows a table with three columns: 'Name', 'Product Type', and 'Banking Product Code'. The table contains two rows of data.

| Name | Product Type | Banking Product Code |
|---------------------------------|--------------|----------------------|
| bank account | Bank Account | bank accou |
| Corporate Loan for IT companies | Term Loan | 123456 |

| 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 | Bool | If selected, then the question is aimed at the customer soliciting the banking product. |
| Is for coborrower? | No | Bool | If selected, then the question is aimed at the customer who is coborrower for a banking product. |

| Field | Required | Data type | Description |
|---------------|----------|------------|--|
| 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. |

6. 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 ["Bank Accounts" on page 32](#)
8. Click the **Save and Close** button at the top right corner of the page.

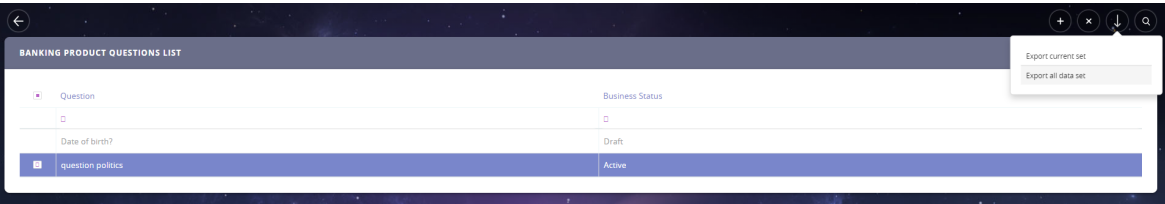
Deleting Questions

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 in Developer mode.
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:

EDIT BANKING PRODUCT FILTER

BANKING PRODUCT FILTER

Name:

Filter Scope:

Filter Type:

PRODUCT AVAILABILITY ITEM FILTERS

| Description |
|-------------------|
| Varsta >< 19 - 55 |

INTEREST & COMMISSION ITEM FILTERS

Dropdown menu options: Availability, Numeric Interval, [none], Text Value, Numeric Value, Numeric Interval, Date Value, Date Interval, OptionSet, LookUp.

| 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"> • Availability • InterestCommissions • Insurance • All |
| Filter Type | Yes | Option set | Choose one of the dedicated types: <ul style="list-style-type: none"> • Text Value • Numeric Value • Numeric Interval • Date Value • Date Interval • OptionSet • LookUp |

For OptionSet and LookUp attributes, you can add multiple values.

If you select LookUp attribute, two new fields are displayed: Entity and Entity View. For more details, see [Views](#).

ADD BANKING PRODUCT FILTER

BANKING PRODUCT FILTER

Name

test

Filter Scope

InterestCommission

Filter Type

LookUp

Entity

Account

Entity View

default

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

6. Fill in the following fields in the **Product Availability Item Filter** section:

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

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

HINT

The data inserted here is shown in tab **3. Availability** in the **Product Availability Item Filter** section of the Banking Product page.

The screenshot displays the 'Availability' tab in the Banking Product Factory. The 'Product Availability' section contains several input fields: Currency (USD), Period Type (Months), Minimum Period (1), Maximum Period (60), Minimum Principal For Early Repayment, Minimum Amount (1,000), and Maximum Amount (100,000). Below this, the 'Availability Rules' section shows a table with one filter: 'Varsta <= 18 - 60'.

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 error message is displayed:

Cannot delete record of type ProductFilter_1. Other data is related to it. This could be a cascading item.

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 for Enterprise 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 in Developer mode.
2. In the main menu, expand **Product Factory**.
3. Click **Banking Product Classification** to open the **Banking Product Classifications List** page.

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:

ADD PRODUCT CLASSIFICATION

PRODUCT CLASSIFICATION

Classification Type: Name:

Is Default: ☐ Code:

Valid From: Valid To:

BANKING PRODUCT CLASSIFICATION

CONTRACT CLASSIFICATIONS

| 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 **Banking Products Classification Section** is displayed after saving the classification item record and allows you to insert existing banking products that will 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. |
| Status | The status of the banking product record. |

The **Contract Classifications Section** is displayed after saving the classification item record and allows you to insert existing contracts that will be classified with this new classification item. The following information is displayed here:

| Field | Details |
|---------------------|--|
| Contract | The number of the contract using this classification. |
| Code | The code of the classification item. |
| Name | The name of the classification item. |
| Classification Type | The type of the classification. |
| Valid From | The date from which the classification item is valid. |
| Valid To | The date until which the classification item is valid. |

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 in Developer mode.
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 in Developer mode.
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. |
| 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 |
|------------------------------------|----------|------------|--|
| Schedule 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 in to 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.</p> <p>In practice may be also encountered the Actual/360 or Actual/365.</p> |

| Field | Required | Data Type | Details |
|----------------------------|----------|-----------|--|
| Is With Equal Installments | No | Bool | Select the checkbox if the installments are equal. If there are Commissions that appear on the Payment Schedule, these Commissions are added to the equal Installments, not included within. |
| Installment Value Custom | No | Bool | <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> |

| Field | Required | Data Type | Details |
|--|----------|------------|---|
| Use Fix Maturity Date (from Activation Date) | Yes | Bool | <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> |
| 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> |

EDIT PAYMENT SCHEDULE TYPE

PAYMENT SCHEDULE TYPE

Name

Equal principal Weekly

Payment schedule code

EPW

Product Type

Term Loan

Schedule Interest Calculation Type

52 weeks

Is With Equal Installments

☐

Adjust First Installment

☐

Installment Value Custom

☐

Use Fix Maturity Date

☐

PAYMENT SCHEDULE TYPE DETAILS

Export

Refresh

| <input type="checkbox"/> Column Repayment Schedule | Calculation Method | Fee | Insurance class | Source | Display |
|--|--------------------|------------------|-----------------|--------|---------|
| <input checked="" type="checkbox"/> | RemainingValue | RemainingFormula | | | (All) ✓ |
| <input type="checkbox"/> | Interest | Effective Rate | | | ✓ |
| <input type="checkbox"/> | Principal | Linear | | | ✓ |
| <input type="checkbox"/> | TotalInstallment | 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**.

ADD PAYMENT SCHEDULE TYPE DETAIL

PAYMENT SCHEDULE TYPE DETAIL

Title

Docs_Testinstallment

Column Type

Payment Schedule Dimension

Column Repayment Schedule

TotalInstallment

Calculation Method

ColumnFormula

Is Calculated in Advance?

☐

Adjust Last Installment

☒

Operation Item

Formula

Principal-interest:ResidualRate

| Field | Required | Data Type | Details |
|-------|----------|-----------|---|
| Title | Yes | Text | Insert a suitable title for the detail. |

| 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 | <p>Select one of the columns that is assigned in the Payment Schedule.</p> |

| 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 Remaining Value at the |

| Field | Required | Data Type | Details |
|----------------|----------|------------|--|
| | | | <p>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. |
| 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. |

| Field | Required | Data Type | Details |
|-------------------------------|----------|------------|---|
| 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 | Bool | Select the checkbox if the calculation is done in advance. |
| Is calculated Upfront | No | Bool | 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. |
| Totalization For Grace Period | No | Bool | 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 | Bool | 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. |

| Field | Required | Data Type | Details |
|----------------|----------|------------|---|
| 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 PAYMENT SCHEDULE TYPE

PAYMENT SCHEDULE TYPE

Name: Credit Card Installments

Product Type: [none]

Is With Equal Installments: ☐

Payment schedule code: CC

Schedule Interest Calculation Type: 30/360

Installment Value Custom: ☐

Use Fix Maturity Date: ☐

Measurement Unit: Months

PAYMENT SCHEDULE TYPE DETAILS

Export Refresh

| Calculation Method | Fee | Formula |
|--------------------|------------------------|----------------------|
| CapitalPercent | ProductLevelFixedValue | |
| ManagementFee | FixedValue | Management Fee Fix 5 |
| RemainingValue | RemainingFormula | |
| Interest | EffectiveRate | |
| Principal | ColumnFormula | |
| TotalInstallment | ColumnFormula | |

EDIT PAYMENT SCHEDULE TYPE DETAIL

PAYMENT SCHEDULE TYPE DETAIL

Title: Principal

Column Type: Payment Schedule Dimension

Payment Schedule Dimension: Principal

Column Repayment Schedule: Principal

Adjust Last Installment: ☒

Operation Item: Loan Principal

Formula: $(\text{remainingValue} + \text{managementFee}) * \text{CapitalPercent} / 100.00$

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 in Developer mode.
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.

5. Enter a Name for the column.
6. Click the **Save and reload** button.
7. A new section is displayed:

| Field | Required | Data Type | Details |
|---------------------------|----------|------------|---|
| Title | Yes | Text | Insert a suitable title for the Payment Schedule element. |
| Column type | Yes | Option set | Select one of the types: <ol style="list-style-type: none"> 1. Payment Schedule Dimension 2. Fee Dimension 3. Insurance Dimension. |
| Column Repayment Schedule | Yes | Option set | Select a product schedule type column. |
| Calculation Method | Yes | Option set | Select a calculation method. |
| Operation Item | No | Option set | Select an operation item for this schedule type. |

8. Click the **Save and reload** button.
9. The **Payment Schedule Type Details** section is displayed. Fill in the fields as indicated above in the [Payment Schedule Types](#) chapter.

ADD PAYMENT SCHEDULE TYPE DETAIL

PAYMENT SCHEDULE TYPE DETAIL

Title

Docs

Column Type

Payment Schedule Dimension

Column Repayment Schedule

Interest

Calculation Method

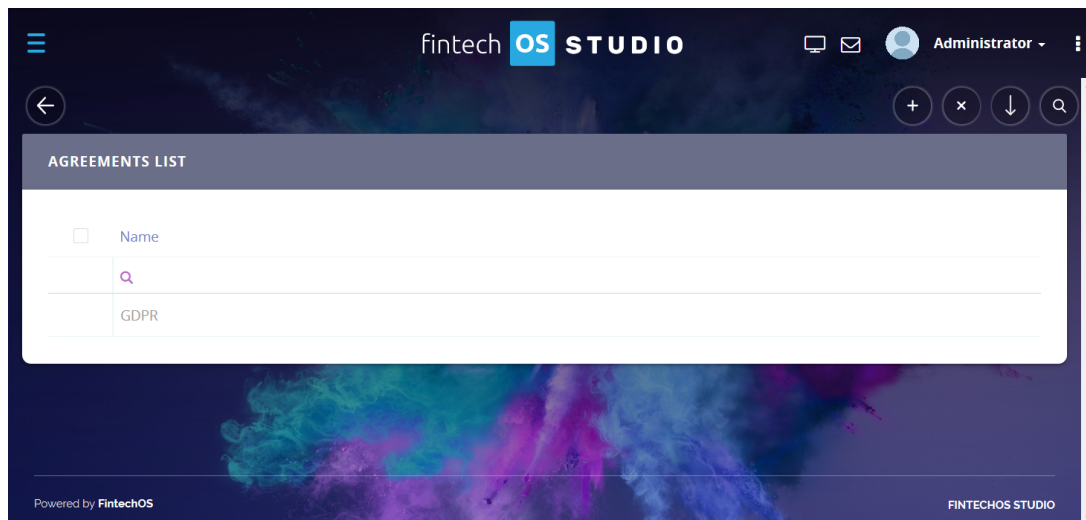
ColumnFormula

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 in Developer mode.
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.

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 |
|--------------|---|
| Name | Name of the agreement. The name must be unique. |
| Display Name | The display name of the agreement. |
| Code | Code of the agreement. The code must be unique. |

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.

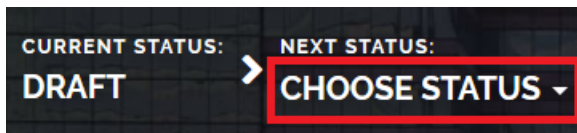
Banking Product Agreements

The **Banking Product Agreements** section allows you to associate the agreement with banking products (see "[Managing Banking Products](#)" on page 30 for details) and specify if the association is mandatory.

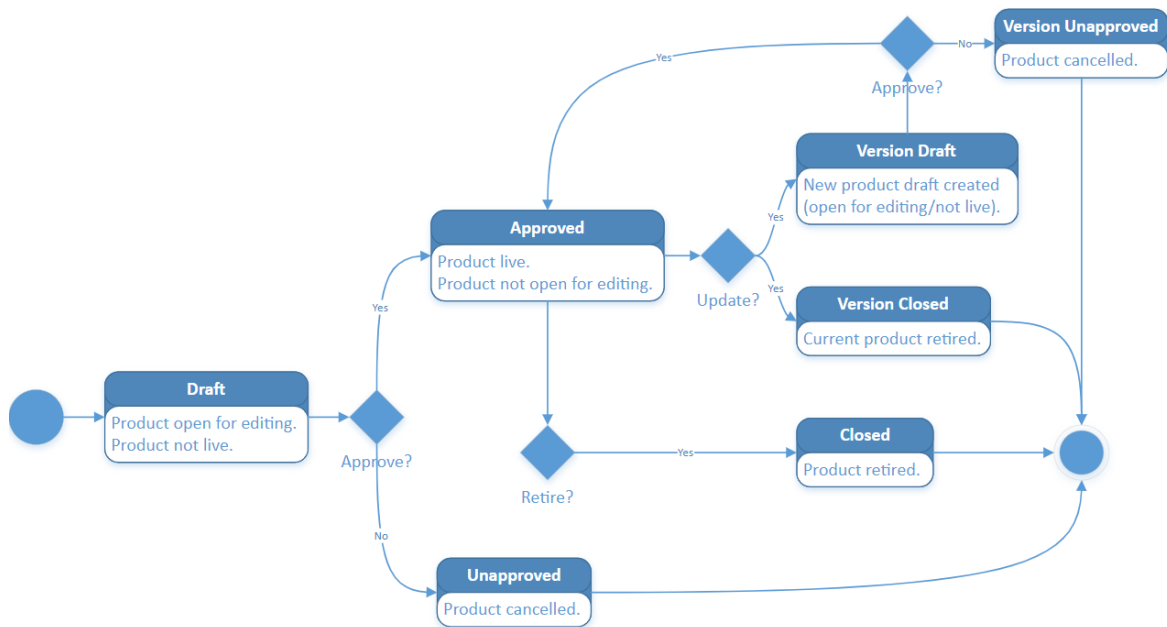
NOTE You can also associate banking products with agreements from a banking product (see [Documents tab in a banking product page](#) for details).

Banking Products' Life Cycle

You can manage a banking product's life cycle by changing its status from the top right corner of the screen.



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

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-
4   ebd54bfa4e1d",
5   "bankingProductId": "25b9efdf-6ca5-48c5-8507-
6   5543a22377b2",
7   "discountInput": {
8     "Amount": 6000.00
9   }
10 };
11 ebs.callActionByName("FTOS_BP_GetDiscountDetail", data,
12 function(s){ if(s.UIResult){console.log
13 (s.UIResult.Data.discountDetail);}});
14 /*
15 [
16   {
17     "id": "32d391e4-9f26-4315-9c1d-ebd54bfa4e1d",
18     "name": "discountAAAA",
19     "discountTypeId": "f0da4a04-a513-4394-8b60-
20     96d0a9409d7c",
21     "value": 5.3,
22     "startDate": {
23       "invariantDate": "2021-03-01"
24     },
25     "endDate": {
26       "invariantDate": "2021-12-31"
27     },
28     "appliedToDimension": "a16d6728-76ac-4d72-8fa7-
29     a992e9a6a63f",
30     "interestTypeId": "3a5ffd12-bfc6-4826-bb81-
31     7e49d2f1c2c6",
32     "commissionTypeId": null,
33     "insuranceClassId": null,
34     "insuranceId": null,
35     "isOptionalDiscount": false,
36     "isPercentage": true,
37     "useFormula": true,
38     "formulaTypeId": "a0dd56a6-a0b9-446b-8e1d-
39     b2c052cafe0b"
40   }
41 ]
42 */

```

```

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": "3a5fffd12-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",  
4   p).then(function (e) {  
5       var type = e.UIResult.Data;  
6   }).catch(function (err) {  
7       console.log(err);  
   });
```

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
- **productId** - ID of banking product Type - from FTOS_BP_BankingProduct (attribute: bpProductId)

Output:

```

bankingProductCode: "HOUSE"
bankingProductId: "bd47d581-e67f-44f7-9be1-ff0b051a73cc"
bankingProductName: "1st House"
bankingProductType: "MG"
bankingProductId: "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", bankingProductId: "e9f52e35-1faa-4cb7-b4bc-d685f326c907"}
2: {bankingProductId: "51423eee-6202-48d7-997e-99ae55a7c3de", bankingProductName: "Mortgage", bankingProductCode: "MORTGAGE", bankingProductId: "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-
    8c0a8cdb89cb",
17          "periodicityTypeId": "1cc04a28-88e0-46df-a089-
    31d04bbde6df",
18          "currencyId": "fc9c53a8-31c6-41ff-a979-
    9c7788d32fb0",
19          "entityStatusId": "facc388-151a-4c83-8953-
    cbac7d6c442a",

```

```

20         "isForUnusage": false,
21         "valueIsPercent": false,
22         "includedInRepaymentSchedule": true,
23         "percentAppliedTo": "f87376c8-15fc-45cc-b8c2-
7786b03593aa",
24         "automaticLoadOnContract": false,
25         "mandatoryForApplicant": true,
26         "useFormula": true,
27         "formulaTypeId": "a0dd56a6-a0b9-446b-8e1d-
b2c052cafe0b",
28         "commissionValue": 5.3,
29         "commissionPercent": null,
30         "rateValidFrom": null,
31         "rateValidTo": null
32     }
33 ]
34 */
35
36
37 var data = {
38     "commissionId": "01c0ad2e-21bd-4290-aba5-
5230a6c184e8",
39     "bankingProductId": "25b9efdf-6ca5-48c5-8507-
5543a22377b2",
40     "commissionInput": {
41         "Amount": 15000.00
42     }
43 };
44 ebs.callActionByName("FTOS_BP_GetCommissionDetail",
data,
45 function(s){ if(s.UIResult){console.log
(s.UIResult.Data.commissionList);}});
46
47 /*
48 [
49     {
50         "id": "01c0ad2e-21bd-4290-aba5-5230a6c184e8",
51         "name": "TC1",
52         "commissionTypeId": "6e2653aa-73ee-452a-b6d6-
8c0a8cdb89cb",
53         "periodicityTypeId": "1cc04a28-88e0-46df-a089-
31d04bbde6df",
54         "currencyId": "fc9c53a8-31c6-41ff-a979-
9c7788d32fb0",

```

```

55     "entityStatusId": "faccc388-151a-4c83-8953-
    cbac7d6c442a",
56     "isForUnusage": false,
57     "valueIsPercent": false,
58     "includedInRepaymentSchedule": true,
59     "percentAppliedTo": "f87376c8-15fc-45cc-b8c2-
    7786b03593aa",
60     "automaticLoadOnContract": false,
61     "mandatoryForApplicant": true,
62     "useFormula": true,
63     "formulaTypeId": "a0dd56a6-a0b9-446b-8e1d-
    b2c052cafe0b",
64     "commissionValue": 5.1,
65     "commissionPercent": null,
66     "rateValidFrom": null,
67     "rateValidTo": null
68   }
69 ]
70 */

```

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("FIS_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-aef7-4e13-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,
93         "formulaTypeId": "a0dd56a6-a0b9-446b-8e1d-
94         b2c052cafe0b",
95         "insuranceValue": 5.3,
96         "insurancePercent": null,
97         "interestDiscount": null,
98         "rateValidFrom": null,
99         "rateValidTo": null
100     }

```

| | | |
|----|--|-----|
| 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 | 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 |

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,
6    "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 |
|--|--------------------|-----|--------|---------|-------------|
| | | | | (All) | |
| RemainingValue | RemainingFormula | | | | 13 |
| PMT | FixedValue | | | | 18 |
| Interest | Effective Rate | | | | 19 |
| Principal | ColumnFormula | | | | 24 |
| TotalInstallment | ColumnFormula | | | | 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"/> | RemainingValue | RemainingFormula | | | <input checked="" type="checkbox"/> (All) | 1 |
| <input type="checkbox"/> | Interest | Effective Rate | | | <input checked="" type="checkbox"/> | 2 |
| <input type="checkbox"/> | Principal | Liniar | | | <input checked="" type="checkbox"/> | 3 |
| <input type="checkbox"/> | LifeInsurance | Effective Rate | | SourcePercent | <input checked="" type="checkbox"/> | 4 |
| <input type="checkbox"/> | HomeInsurance | Liniar | | SourceValue | <input checked="" type="checkbox"/> | 5 |
| <input type="checkbox"/> | ManagementFee | Effective Rate | Annual Admin Fee | SourcePercent | <input checked="" type="checkbox"/> | 6 |
| <input type="checkbox"/> | 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 | | 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:

- **displayBPDetails** - 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.
- **displayBPAvailability** - boolean, specifies whether to show the availability information of the banking product, such as currency, period, minimum and maximum amounts and advances, or covenants. Possible values: true, false. The Availability 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.

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. 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",
9      data, function(response) {
10      if (response.UIResult) {
11          console.log(response.UIResult.Data);
12      }
13  });

```

Returned data:

```

1  // API Response example below:
2  {
3      "BankingProduct": {
4          "BankingProductCode": "APICodeTst",
5          "Name": "APIName",
6          "StartDate": "2021-10-07T21:00:00Z",
7          "EndDate": "2022-03-30T21:00:00Z"
8      },
9      "Details": {
10         "GeneralData": {
11             "BankAccountType": "LoanTermAccount",
12             "IsRevolving": true,
13             "AutoDisbursement": false,
14             "MaxNoDisbursements": 12,
15             "ActivationTranchesOnDocumentSubmission":
16 false,
17             "IsGuaranteed": true,
18             "AllowCollateralPartialRelease": true,
19             "AllowCoDebtor": false,
20             "AllowRefinancing": true,
21             "MaxNoOfCodebtors": 5,
22             "PeriodicityType": "Monthly",
23             "RepaymentAllocationMethod": "CostOrder",
24             "HolidayShiftForRepaymentInstallments":
25 true,
26             "HolidayShiftMethod": "Forward",
27             "DeferDueDate": true,
28             "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             "PaymentScheduleTypeName": "Credit Card
Installments"
42         }
43     ],
44     "ProductGuarantees": [
45         {
46             "ProductGuaranteeName":
"APITestProductGuarantee"
47         }
48     ],
49     "ProductDestinationTypes": [],
50     "DisbursementMatrix": [
51         {
52             "Name": "DisbMatrixAPITest"
53         }
54     ],
55     "AssociatedProducts": [
56         {
57             "AssociatedProductName": "TLVlad"
58         },
59         {
60             "AssociatedProductName":
"TLVladAutoCommLoad"
61         }
62     ]
63 },
64 "Availability": {
65     "Currency": "RON",
66     "PeriodType": "Months",
67     "MaxPeriodForDisbursement": 1,
68     "MinimumPeriod": 2,
69     "MaximumPeriod": 3,

```

```

70         "MinimumEarlyRepaymentValue": 4,
71         "MinimumAmount": 500,
72         "MaximumAmount": 50000,
73         "UnusageStartPeriod": 5,
74         "MinimumAdvance": 10,
75         "MaximumAdvance": 90,
76         "AvailabilityItemFilters": [
77             {
78                 "Description": "Account Filter API
TEST"
79             }
80         ],
81         "ProductCovenants": [
82             {
83                 "Name": "Lender can monitor borrower's
current ratio"
84             }
85         ]
86     },
87     "Dimensions": {
88         "InterestsAndCommissions": [
89             {
90                 "InterestCommissionItemName":
"InterestCommAPITest",
91                 "CommissionListName": "Current Account
RON commission ",
92                 "InterestListName": "eMag CA Interest
List",
93                 "Commissions": [
94                     "CA Administration Fee",
95                     "Administration Fee ODV MAGDA"
96                 ],
97                 "Interests": [
98                     "Zero Interest Rate",
99                     "Banded Test"
100             ]
101             }
102         ],
103         "Insurance": [
104             {
105                 "Name": "InsuranceAPITest"
106             }
107         ],
108         "Discounts": [
109             {

```

```
110         "Name": "DiscountAPITest"
111     },
112 ],
113 "Questions": [
114     {
115         "Name": "Question1"
116     },
117     {
118         "Name": "Question2"
119     }
120 ]
121 }
122 }
```