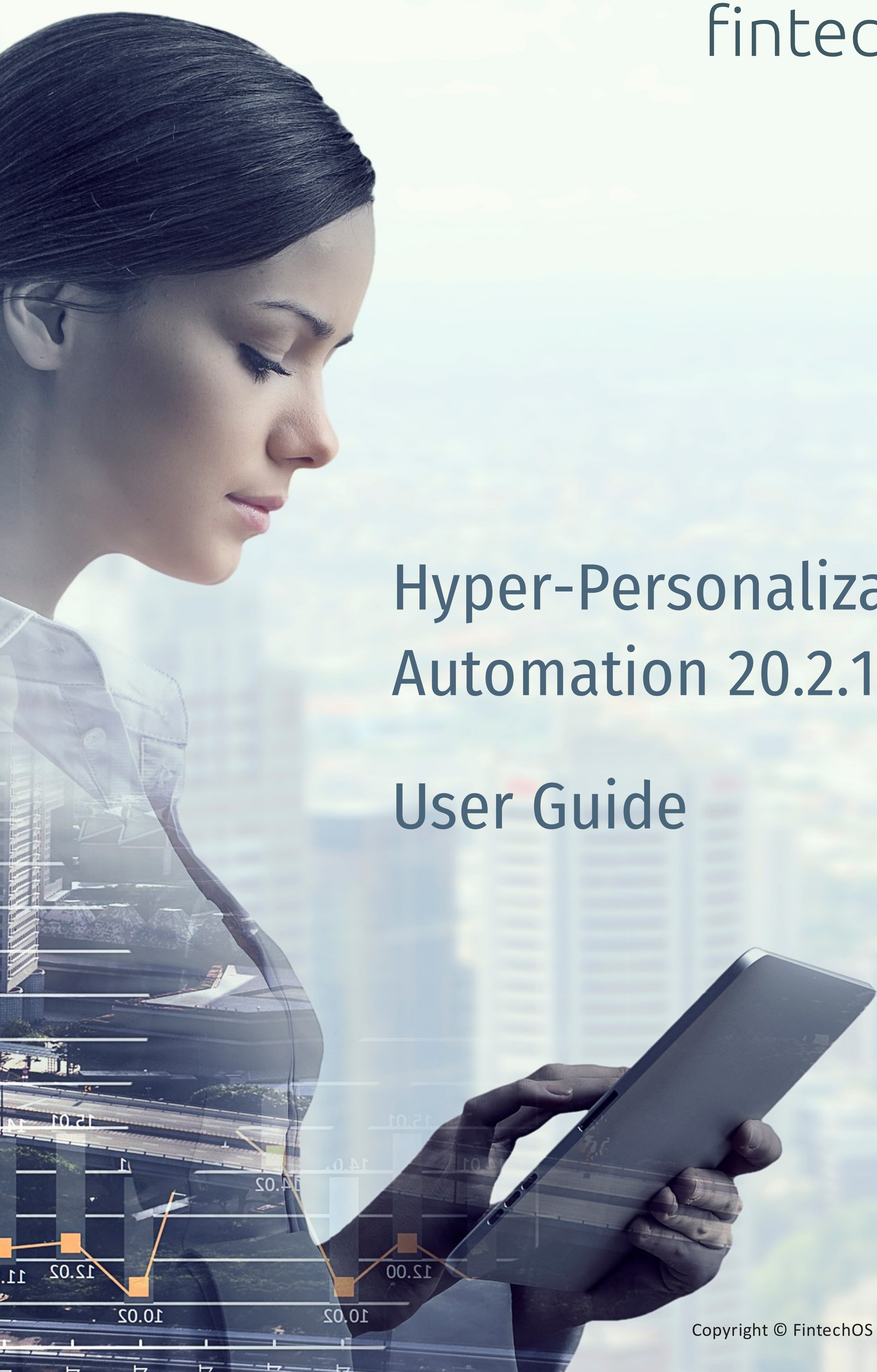

fintech OS

Hyper-Personalization Automation 20.2.10x0

User Guide

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Overview

Businesses gather big amounts of information about customers' life-cycle and online behavior. Therefore, the way the data is used for driving personalized customer experiences across the buying journey is important for achieving hyper-personalization.

A hyper-personalized consumer experience can only exist in a specific context, and that is the customer profiling. For example, a hyper-personalized consumer experience can analyze contextual data such as: the device used, the location from where the device is accessed, the time of the day when the user is most active, and so on.

Marketers must focus on driving omni-channel one-to-one communication with customers as every customer is an individual with specific needs and expectations for the products and services they choose to buy.

Hyper-personalization leverages artificial intelligence (AI) and real-time omni-channel data to deliver more relevant content, product, and service information to each user.

The Hyper-Personalization Automation processor allows you to create personalized content and business-tailored segments of audience (customer personas) to further create effective campaigns and more meaningful interactions with customers, thus ensuring customer loyalty.

Hyper-Personalization Automation Features

- Tailor content that fits each and every customer's wants and needs;
- Define customer personas;
- Define audiences to use personalized content in omni-channel campaigns.

Applications

- Loan applications
- Quote applications
- Mortgage processing

Installation

Starting with v20.1, FintechOS Studio comes with the Hyper-Personalization Automation processor pre-installed. For older versions of FintechOS Studio, follow all the installation instructions below:

Step 1. Download the Hyper-Personalization deployment package (FintechOS Studio versions prior to v20.1)

1. In the FintechOS App Store, select the **Automation Processors** category.
2. From the list of automation processors, select **Hyper-Personalization Processor**.
3. In the **Hyper-Personalization Processor** page, click the shopping cart icon () to add the automation processor to your shopping cart.
4. In the top menu, select **My Cart**.
5. Click the **Checkout** button (Checkout).
6. Fill in the required information and click the **Place Order** button (Place Order) to download the deployment package.

Step 2. Import the Hyper-Personalization Processor deployment package into FintechOS Studio (FintechOS Studio versions prior to v20.1)

1. Launch FintechOS Studio in **Developer** mode.
2. Click the main menu icon () at the top left corner.
3. In the main menu, click **DEVOPS**.
4. Click **Deployment Packages**.
5. Click the **Import** icon () in the top right corner to import the deployment package.
6. In the **File Upload** window that opens, navigate to the deployment package files.
7. Select the *Hyperpersonalization Processor.xml* file and click **Open**.

Personalized Content Management

The Hyper-Personalization Automation processor empowers you with the ability to create effective and user-tailored ways of interacting with the customer. It can also be customized to better suit your needs if information should be extended to a desired communication channel.

FintechOS grants access to intuitive omni-channel content templates that can be personalized with dynamic tokens.

The Hyper-Personalization Automation provides the following main content management features:

- Improved usability, with user interface complemented by tips & tricks and usage guidelines;
- Remaining characters counter based on defined message length;
- Tokens available for multiple data sources, available for insert directly in the context of the content template;
- Formatted tokens for numeric and date fields based on content culture;
- Approval workflow for managing content templates authoring;
- Preview messages exceeding the allowed length, during campaign simulation.

This section provides information on how to configure and use the personalized content features to their fullest extent:

- Personalized Content Types - allow you to have different types of content templates;
- Content Settings - allow you to automatically return attribute values in the content templates;

- Personalized Contents - allow you to start digital content campaigns with quick reusable content templates.

You might have communication channels to which you need to send more information to be used on the destination. You can do so by extending the app. For information on how to do this, see How to Extend Personalized Content Management.

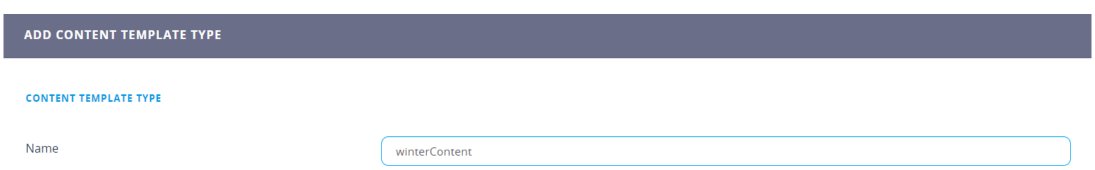
Managing Personalized Content Types

Personalized contents types help you better categorize different types of campaigns to fulfill your business needs. This functionality is an additional layer that can be used to better compartmentalize seasonal campaigns versus personal campaigns, or in other ways.

Add Personalized Content Types

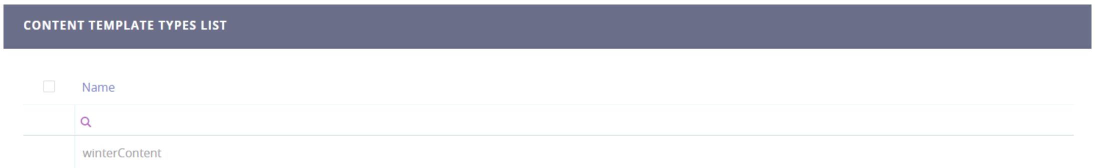
To add a personalized content type, follow these steps:

1. Click the main menu icon ( ) at the top left corner.
2. In the main menu, click **Hyper-Personalization** > **Personalized Content Types**. The **Content Template Types List** page opens.
3. Click the **Insert** button ( ) at the top right corner of the page. The **Add Content Template Type** page opens.
4. Type the **Name** of the personalized content type.



5. Click the **Save and Close** button () at the top right corner to save the content type.

   The record is added to the **Content Template Types List** page.



Edit content types

To edit the name of a content type, in the **Content Template Types List** page, double-click the record that you want to edit. The **Edit Content Template Type** page opens. Change the **Name** of the content type and click the **Save and Close** button () at the top right corner to save the change.

Delete content types

To delete a content type, in the **Content Template Types List** page, select the desired record and click the **Delete** button () at the top right corner of the page. A confirmation dialog appears. Click **Yes** to delete the selected record.

Content Settings

Content tokens (herein referred as content settings) are an easy way to further personalize content in business audience outreach. They can be used in the HTML body of a personalized content item in order to act as a variable that returns an attribute associated with the source entity. More specifically, this can be used to make a single personalized content that when read by the customer will display their name, instead of a generic greeting. This functionality can be used on many different kinds of attributes in order to create a truly impressive experience and display precisely the kind of information a customer needs.

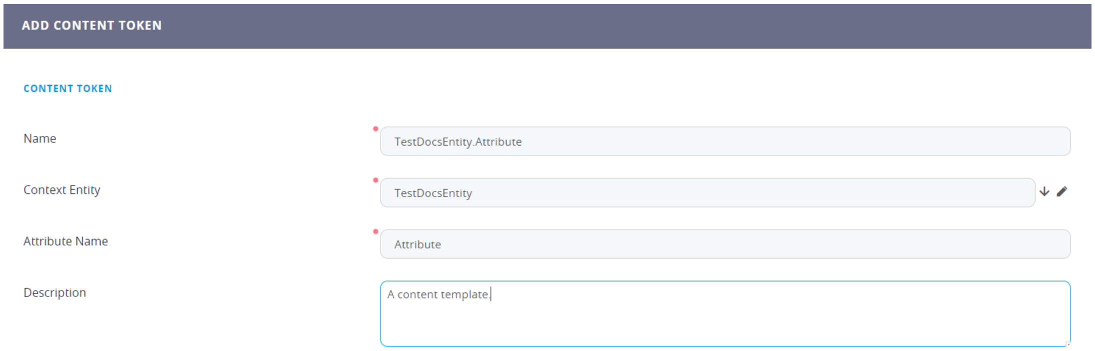
Content settings can be easily managed and empower the business user to channel their creativity towards meaningful content creation.

Add Content Settings

To add a content setting, follow these steps:

1. Click the main menu icon (≡) at the top left corner.
2. In the main menu, click **Hyper-Personalization** > **Content Settings**. The **Content Tokens List** page opens.
3. Click the **Insert** button (+) at the top right corner of the page. The **Add Content Token** page opens.
4. Fill in the fields.

Field	Description
Name	The name of the token that will be used in personalized content. This field is mandatory.
Context Entity	The name of the entity associated with the required data. This field is mandatory.
Attribute Name	The name of the returned data. This field is mandatory.
Description	Description of what the token is and what it might be used for.



5. Click the **Save and close** button () at the top right corner to save the content token

   The record is added to the **Content Tokens List** page.

Edit content settings

To edit content settings, in the **Content Tokens List** page, double-click the record that you want to edit. The **Edit Content Token** page appears. Make the desired changes and click the **Save and close** button () at the top right corner to save the change.

Delete content settings

To delete content settings, in the **Content Tokens List** page, select the desired record and click the **Delete** button () at the top right corner of the page. A confirmation dialog appears. Click **Yes** to delete the selected record.

Managing Personalized Content

Communicating with customers on a personal level is critical, but getting too personal can be very intrusive. Marketers need to be able to keenly interpret available customer data to extract the right insights.

Governance around the frequency of marketing messages and degree of personalization is also essential. In order to support such requirements, and help businesses overcome the challenges of the digital age, FintechOS provides a powerful tool to create and manage customer engagement campaigns, giving you the means to interact with customers in a meaningful manner.

Personalized content templates are essential to the content creation process. They allow you to remain on track by guiding you with useful fields, and minimizing the chance of mistakes by omission, and can also help the content team think strategically and holistically about the content they're creating for each page.

View Personalized Content Templates

To view the list of personalized contents, follow these steps:

1. Click the main menu icon ( ) at the top left corner.
2. In the main menu, click **Hyper-Personalization** > **Personalized Content**.

The **Content Template List** opens. If personalized content has already been created, this page displays relevant information: the ID and name of the template to quickly identify and distinguish between campaigns. The template type is also displayed along with the user who created it, the date, and the content template status.

This page provides you with the means to add, edit, or delete personalized contents.

Add Personalized Content Templates

> **NOTE**
> In order to create a personalized content template, you should first create content types. For information on how to do this, see Creating Personalized Content Types.

To add personalized content, in the **Content Template List** page, click the **Insert** icon ( ) in the top right corner of the page. The **Add Content Template** page opens.

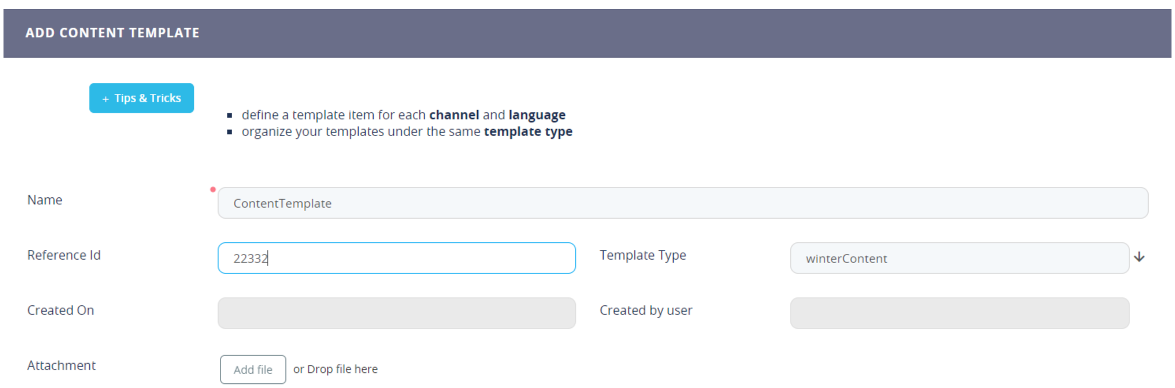
Adding a personalized content template is a two-step process.

Step 1. Define content template

By default, the **Add Content Template** page opens on the **Define** step.

Fill in the fields:

Field	Description
Name	The name of the content template. This field is mandatory.
Reference Id	The number associated with the content template.
Template Type	Select between existing content types in order to categorize.
Attachment	Add an attachment to the content template.



Click the **Save and reload** button at the top right corner of the page to save the record. The page reloads and the **Add Content Template** page opens.

Continue with the next step.

Step 2. Manage content template items

Click **Manage Template Items** and follow these steps:

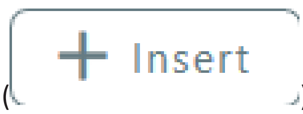
1. Select the **Communication Start Hour**, the hour when the communication can start.
2. Select the **Communication End Hour**, that is the hour when the communication ends.

3. Add content template items to differentiate between different user types and cultures in order to deliver personalized content.

Content templates contain multiple content template items. Each content template item represents the structure of the message to be sent, it contains fields like name and subject. These items also help determine the most important thing about communication campaigns, namely customer personalization done via the culture and channel fields, and can determine the specificity and period of messages.

Another important field is the body, where the template is rendered and can be modified. A very useful tool to have are the tokens, these are used to personalize the message with name, address, etc. The last checkboxes provide support for textual or HTML type of messages or enable analytics via tracking. Content templates are used to provide audiences with personalized content in a quick and efficient manner.

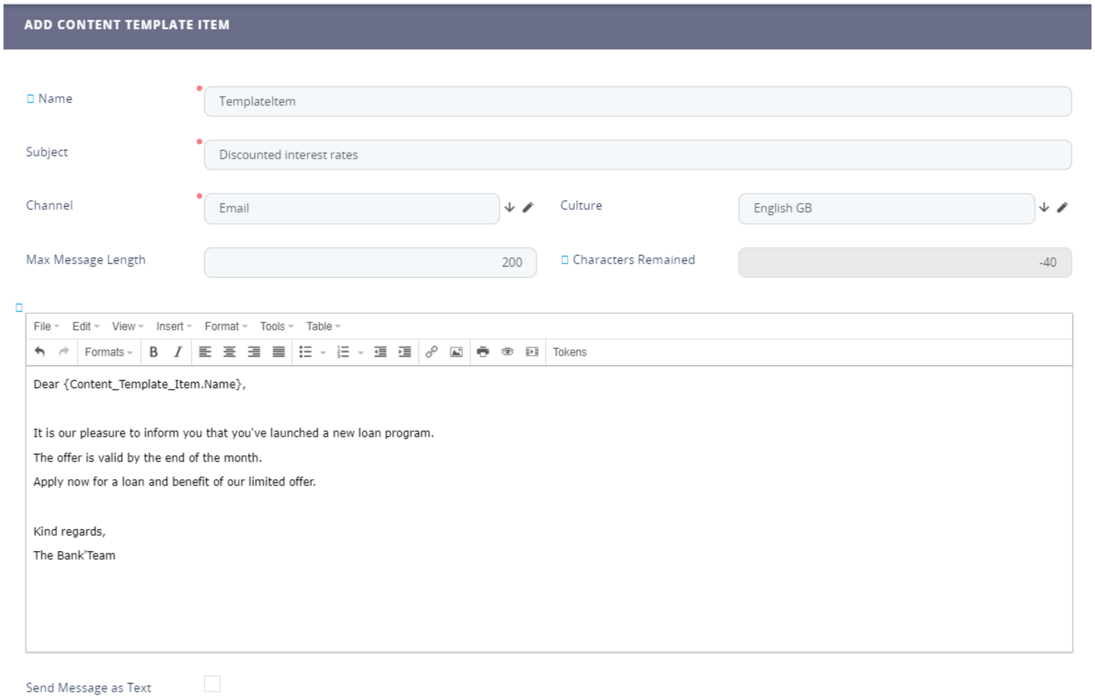
To add a content template item, follow these steps:

1. Click the **Insert** button (

). The **Add Content Template Item** page appears.
2. Fill-in the fields:

Setting	Description
Name	The name of the content template item. This field is mandatory.
Subject	The main content of the message. This field is mandatory.

Setting	Description
Channel	Select a communication channel (e.g., mail, SMS, etc.). This field is mandatory. **NOTE** You need to add channels (main menu > **ADMIN** > **Omnichannel Communication Automation** > **Communication Channels**) in order to be able to select one in this field.
Culture	Select the nationality of the user.
Max Message Length	The maximum length of the message to be sent. It is important for channel SMS.
Characters Remained	The number of remaining characters
Body	The main body that displays the message that will be sent. This field is of type HTML. Use the HTML Editor toolbar to format text as per your preference and insert tokens within the body by clicking **Tokens** from the editor's toolbar and selecting the desired token .
Send Message as Text	Switches between HTML and text.



3. Click the **Save and close** button ( ) at the top right corner to save the content template item.
4. Continue adding as many content template items as you need, then click the **Save and close** button ( ) at the top right corner to save the content template.

Edit Personalized Content Templates

To edit a personalized content template, in the **Content Templates List** page, double click the record that you want to edit. The **Edit Content Template** page opens. In the **Define** step you can edit the details of the content template and in the **Manage Template Items** step, you can change the dates when the content template starts and ends and also add, edit, or remove template items.

Delete Personalized Content Templates

To delete a personalized content template, in the **Content Templates List** page, select the desired record and click the **Delete** button () at the top right corner of the page. A confirmation dialog appears. Click **Yes** to delete the selected record.

How to Extend Personalized Content

You might have communication channels to which you need to send more information to be used on the destination. You can extend the personalized content with the following types of information:

- **Statics** – The values are added on content item and are persisted with the same values when a campaign uses the content.
- **Dynamics** – On content item level, the user will add information as tokens and the values are composed from audience at runtime moment (when a campaign is launched).

In order to extend the information on a desired communication channel (add extended properties), you need to add in message a generic attribute formatted as key/value pairs.

To extend the information on a desired communication channel, follow these steps:

1. Create a new entity and add all the needed attributes. We recommend you to use the following naming convention: `FTOS_CMB_CommChannel_[channel name]`.

> **NOTE**
>
> The new entity should meet the following prerequisites:
>
> - Contains at least one attribute lookup to `ebs.FTOS_CMB_ActionTemplateContent` named `contentItemId`.

- Static attributes are added as standard entity attributes.
- Dynamic attributes are added as lookup to `FTOS_CMB_ContentToken`.

2. On the desired communication channel, choose the newly created entity as value for `extendedPropertiesEntityId`.
3. On the content item, if the selected channel is the one that you set up, add all the desired values to be used by campaigns.

On the `FTOS_DPA_MessageQueue` entity, you will find for each message which uses the below channel, an attribute named `ChannelProviderParams` with all key/value pairs.

EXTENDED PROPERTIES EXAMPLE

Let's assume that you need to communicate from a campaign custom information to an endpoint on a mobile channel.

This section shows you how to extend Personalized Content to communicate from a campaign to an endpoint on a mobile channel the following custom information: first name, last name with some extra details like campaign type, availability date, and maximum credit amount:

1. Create an entity named `FTOS_CMB_CommChannel_MobileApp` with the following attributes:
   - `FTOS_CMB_CommChannel_MobileAppid` - PK
   - `contentItemId` – lookup to `ebs.FTOS_CMB_ActionTemplateContent`
   - `campaignType` – OptionSet
   - `availabilityDate` – Date
   - `maxCreditAmount` – lookup to `FTOS_CMB_ContentToken`

2. Add the Mobile App communication channel (**ADMIN** > **Omnichannel Communication Automation** > **Communication Channels**) and make sure that for the Extended Property attribute you select `FTOS_CMB_ CommChannel_MobileApp`.
3. Create a new content and a new content item by following these steps:
    1. On the content template item, choose the **Mobile App communication** channel.
    2. Click the **Edit Channel Extended Properties** button. The **Edit AppMobile Extended Properties** page opens.
    3. From the **Content Item ID** field, select the campaign type (Notification).
    4. From the **tokenDate** field, select a fixed date (e.g.,30.11.2019) and from the tokens list, select **MaximumCreditAmount**.

        NOTE

        You must add the token from the Audience.

    5. Save the form and return to the content template item.
4. Confirm the template and use it in a campaign.
5. Start the campaign.

For each attendee, you will find a message in the **Message Queue** entity. In **ChannelProviderParams** you will find a key/value pair; for example: {campaignType: notification, availabilityDate: 31.03.2019, maxCreditAmount: 2500}. You can use these values to send a proper message to the mobile app endpoint.

Customer Personas

Customer personas are customers who have a specific profile: demographic, location, age , needs, previous interaction with a business, etc. For example: customers with active contracts, which accepted marketing terms and conditions and which have more than five installments until the end of contract.

In FintechOS enables you to define the customer personas, filtering only the data (entities) you commonly use, leaving out all the structures that are meaningless for the targeted business cases, and audience segmentation needs.

It empowers you with the ability to create business-tailored segments of audience.

Using personalized content and delivery addresses for specific customer personas, you can orchestrate and customize omni-channel campaigns, easily change the rules of queries, and adapt any campaign to your business needs at any time.

To create customer personas:

1. Define the customer persona data model.
2. Create customer persona

Customer Persona Data Model

The customer persona data model enables you to filter only the data (entities) you commonly use, leaving out all the structures that are meaningless for targeted business cases and audience segmentation needs.

FintechOS enables you to define the list of entities that you might want to use for creating advanced audience segmentation (customer personas).

Add Customer Persona Data Model

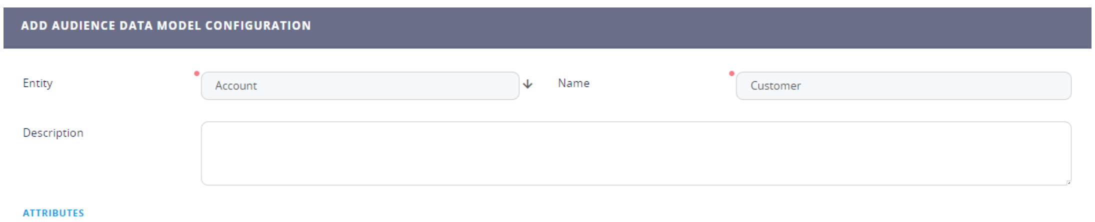
To define the data required for customer personas:

1. Click the main menu icon (☰) at the top left corner.

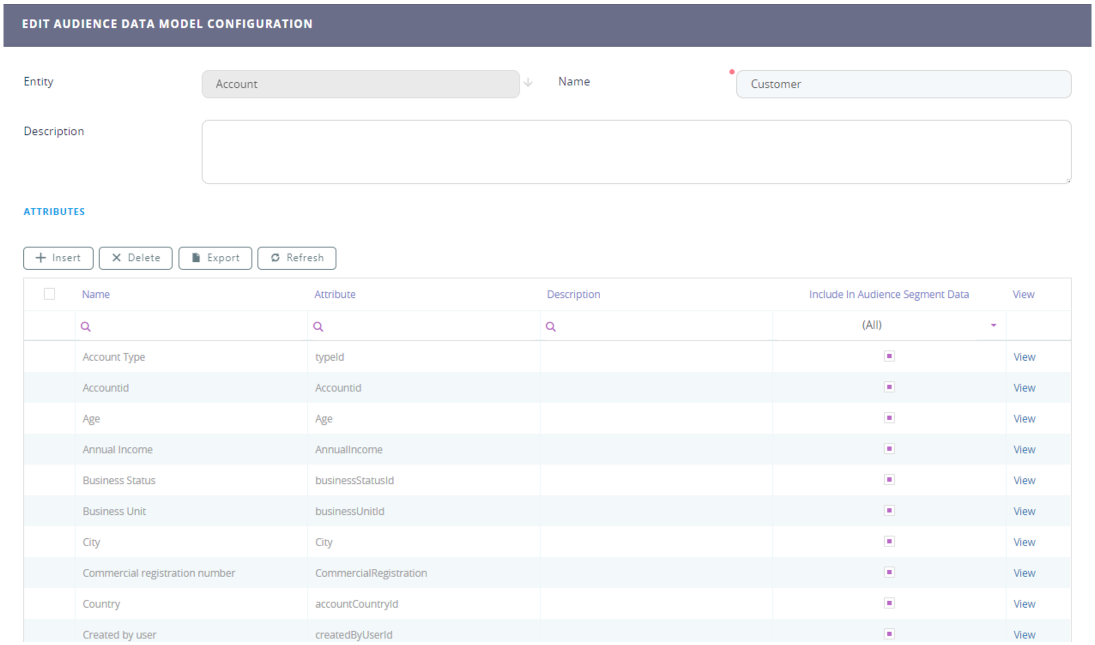
2. In the main menu, click **Hyper-Personalization** > **Persona Data Model Settings**. The **Audience Data Model Configurations List** page opens.

3. Click the **Insert** button (+) at the top right corner of the page. The **Add Audience Data Model Configuration** page opens.

4. Select the **Entity** whose attributes you'll be using when creating the customer personas. The **Name** field will be automatically filled in with the display name of the selected entity.



5. Click the **Save and reload** button at the top right corner to save the persona data model settings. The **Edit Audience Data Model Configuration** page opens and all attributes in the selected entity data model are listed.



6. If for the data segmentation (customer personas), you only need specific entity attributes, in the **Attributes** section, tick the **Include In Audience Segment Data** checkbox for the attributes that you will be using during the creation of customer personas.

> **NOTE**
>
> When defining audience segments, you will have access only to the attributes for which you have ticked the **Include In Audience Segment Data** checkbox.

7. Optionally, you can provide a relevant description to all the attributes on a context entity using inline editing.
8. Click the **Save and Close** button () at the top right corner to save the persona data model settings..

Edit persona data model settings

To edit the name of a content type, in the **Audience Data Model Configurations List** page, double-click the record that you want to edit. The **Edit Audience Data Model Configuration** page opens.

You can edit the entity by changing the description or by editing the entity attributes, then click the **Save and Close** button () at the top right corner to save the change.

Delete persona data model settings

To delete a content type, in the **Audience Data Model Configurations List** page, select the desired record and click the **Delete** button () at the top right corner of the page. A confirmation dialog appears. Click **Yes** to delete the selected record.

Creating Customer Personas

Customer personas apply advanced filtering criteria on the information available in the "Customer Persona Data Model" on page 22 to segment your customer base depending on your communication strategy.

To create a customer persona, follow these steps:

1 Insert a new customer persona record

1. In FintechOS Studio, click the main menu icon () at the top left corner.
2. In the main menu, click **Hyper-Personalization** > **Customer Personas**. The **Audience Segments List** page opens.

3. Click the **Insert** button (+) at the top right corner of the page. The customer persona digital journey appears.

2 Define the customer persona

By default, the customer persona digital journey displays the **Define** step.

1. Type the **Name** of the customer persona. Provide a descriptive name for the customer persona so that you can easily identify the target group at a first glance.
2. Click the **Save and reload** button at the top right corner of the page to save the record.

3 Define audience segments

You can use an audience segment for various audiences. This way you will define a set of conditions once and you will be able to use it in different combinations when defining an audience. Repetitive conditions are easy to use in segmentation, once you created a segment you can simply re-use it anytime later.

A common use case is the audience segment covering the set of conditions for minimum eligibility criteria, that you have to add to all your campaigns. For example, customers with age between 24 – 73, that have Marketing Acceptance, that are not deceased, that have a mobile phone, etc.

HINT
Create simple segments that can be easily combined in various digital audiences later on.

To define an audience segment, follow these steps:

1. Click the **Segment Expression** step.
2. Set conditions to get specific records for specific entity (entities). For more information, see Get Records for Entity.

3. Define aggregate data to use as token or to add new conditions to filter the data set.

   For more information, see Define Aggregate Data

4. Set the tokens that will be used in communication templates. For more information, see Set Tokens for Personalized Content.

Preview your audience segment

Once you have defined and saved your segment expression, you can generate an Excel file that lists all the audience segment data. The preview is generated asynchronously by a job scheduler and you have the option to receive an email notification when the Excel file is ready. To create an audience segment preview:

1. In the audience segment editor, select the **Segment Preview** tab.

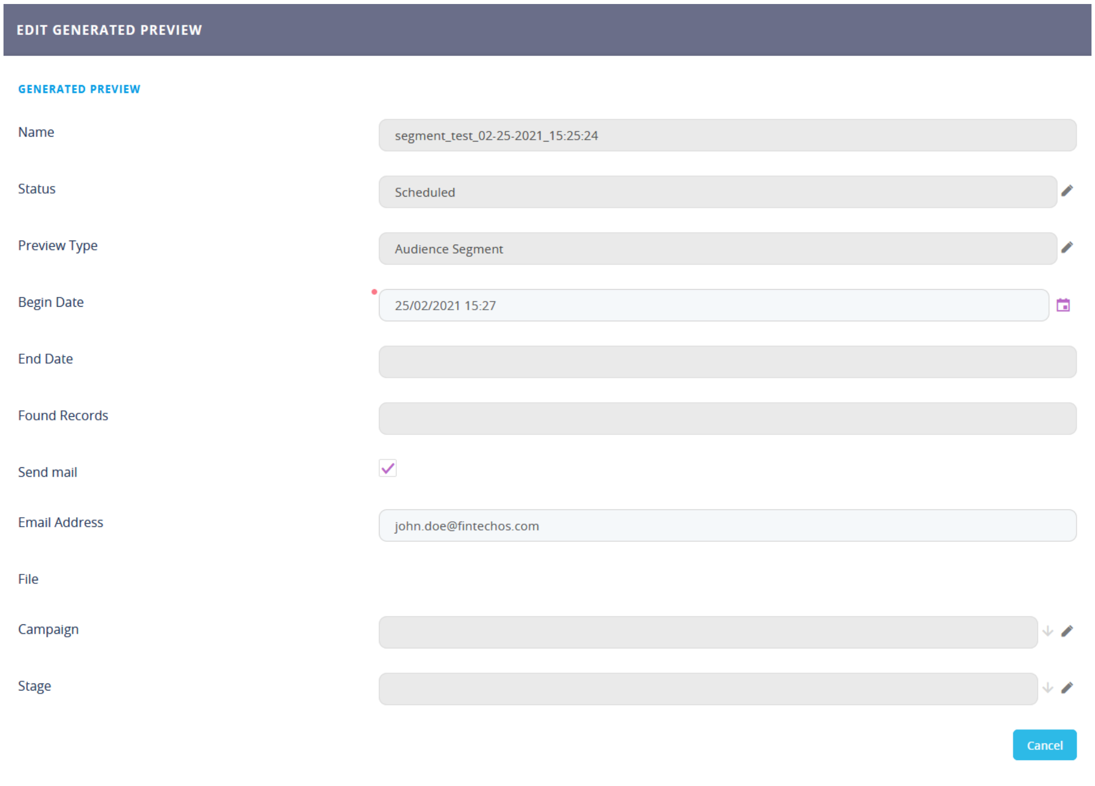
2. Click **Insert** to create a new segment preview.

3. In the Add Generated Preview window, enter a **Begin Date** for when you wish to schedule the processing for the preview and select the **Send Mail** checkbox if you wish to send an email notification when the preview is ready.

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

5. In the Edit Generated Preview page, you can modify the **Begin Date** and **Send Mail** options and customize the **Email Address** where you wish to receive the notification

once the preview is ready.



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

The Segment Preview tab lists all the audience segment previews tasks that have been finished, are in progress, or are scheduled to run in the future.

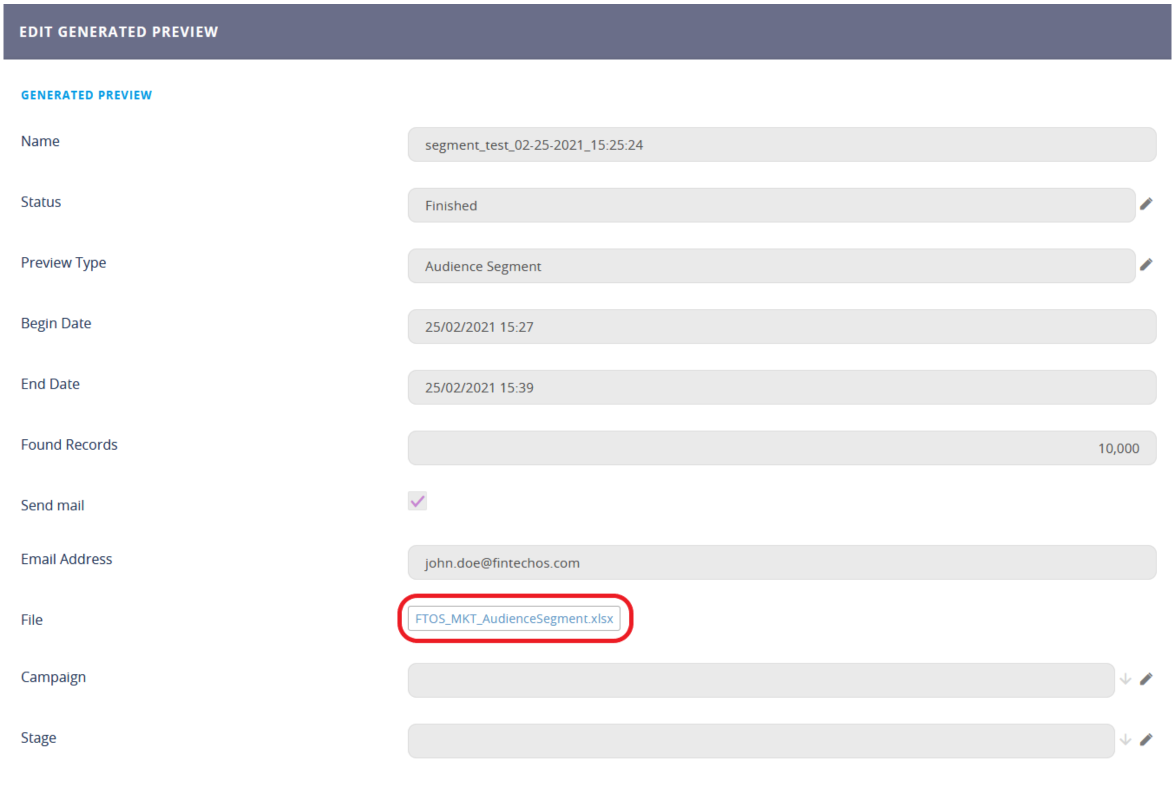
EDIT AUDIENCE SEGMENT

GENERATED PREVIEWS

+ Insert | ✕ Delete | Export | Refresh

Name	Status	Begin Date	End Date	Preview Type	Found Records	Created On
segment_369c2773-6...	Finished	24/02/2021 17:06	24/02/2021 17:11	Audience Segment	10,000	24/02/2021 17:06
segment_369c2773-6...	Finished	24/02/2021 17:24	24/02/2021 17:24	Audience Segment	10,000	24/02/2021 17:24
segment_369c2773-6...	Finished	24/02/2021 20:08	24/02/2021 20:08	Audience Segment	10,000	24/02/2021 20:08
segment_369c2773-6...	Finished	24/02/2021 20:11	24/02/2021 20:12	Audience Segment	10,000	24/02/2021 20:11
segment_369c2773-6...	Finished	24/02/2021 20:15	24/02/2021 20:15	Audience Segment	10,000	24/02/2021 20:15
segment_02-25-2021_...	Finished	25/02/2021 10:44	25/02/2021 10:44	Audience Segment	10,000	25/02/2021 10:44
segment_undefined_0...	Finished	25/02/2021 11:20	25/02/2021 11:20	Audience Segment	10,000	25/02/2021 11:20
segment_undefined_0...	Finished	25/02/2021 11:47	25/02/2021 11:48	Audience Segment	10,000	25/02/2021 11:47
segment_test_02-25-2...	Finished	25/02/2021 12:04	25/02/2021 12:04	Audience Segment	10,000	25/02/2021 12:04
segment_test_02-25-2...	Finished	25/02/2021 14:46	25/02/2021 14:47	Audience Segment	10,000	25/02/2021 14:47
segment_test_02-25-2...	Finished	25/02/2021 14:47	25/02/2021 14:47	Audience Segment	10,000	25/02/2021 14:47
segment_test_02-25-2...	Finished	25/02/2021 15:24	25/02/2021 15:25	Audience Segment	10,000	25/02/2021 15:25
segment_test_02-25-2...	Finished	25/02/2021 15:27	25/02/2021 15:39	Audience Segment	10,000	25/02/2021 15:31

Once a preview generation is finished, if you select it from the list, you will be able to download the Excel file containing audience segment preview data.



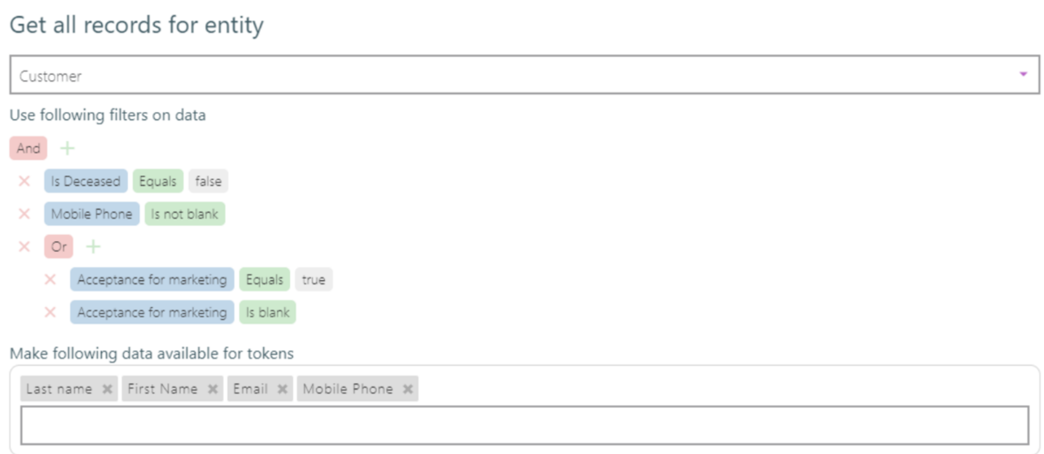
Customer Personas Examples

SEGMENT WITH GROUP CONDITION FILTER

Customers not deceased, with valid mobile phone, who accepted marketing terms and conditions.

Entity	Part	Expression
Customer	Filters	(isDeceased equal true AND MobilePhone is not blank AND (AcceptanceForMarketing equals true OR AcceptanceForMarketing is blank))
	Tokens	Phone, Email, First Name, Last Name

Entity	Part	Expression
Aggregates	Defined	-
	Filters	-

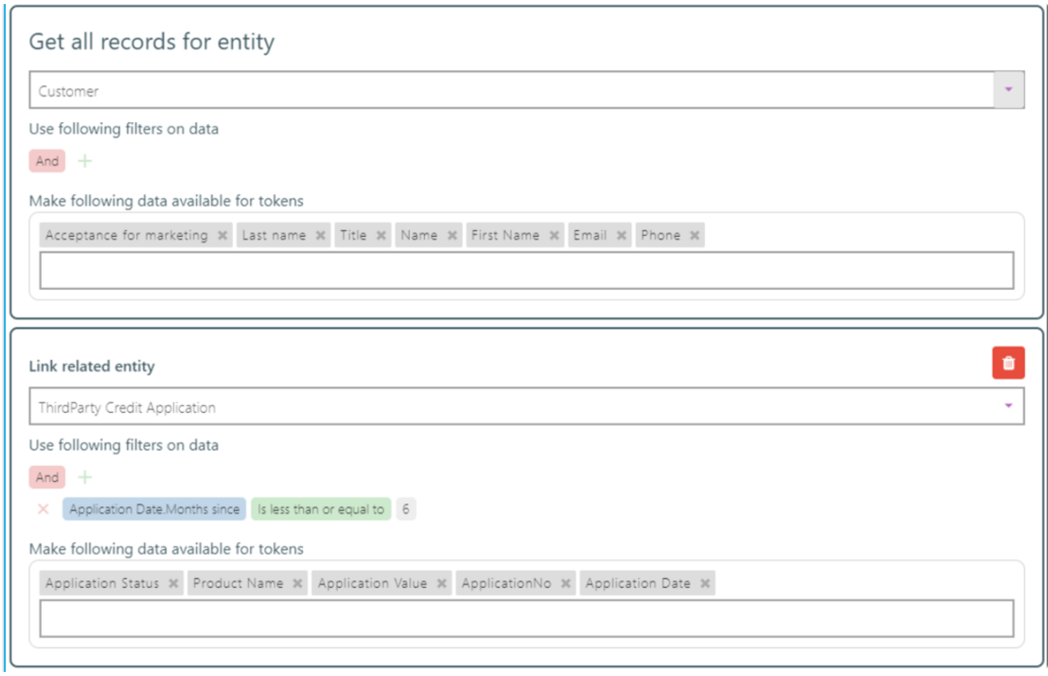


SEGMENT WITH MORE LINKED ENTITIES AND FILTERED BY THE SECOND ENTITY

Customers with applications in the past 6 months.

Entity	Part	Expression
Customer	Filters	-
	Tokens	Phone, Email, First Name, Last Name
Credit Application	Filters	ApplicationDate.MonthsSince is less than or equal to 6.
	Tokens	Application Status, Product Name, Application Value, Application No, Application Date
Aggregates	Defined	

Entity	Part	Expression
	Tokens	

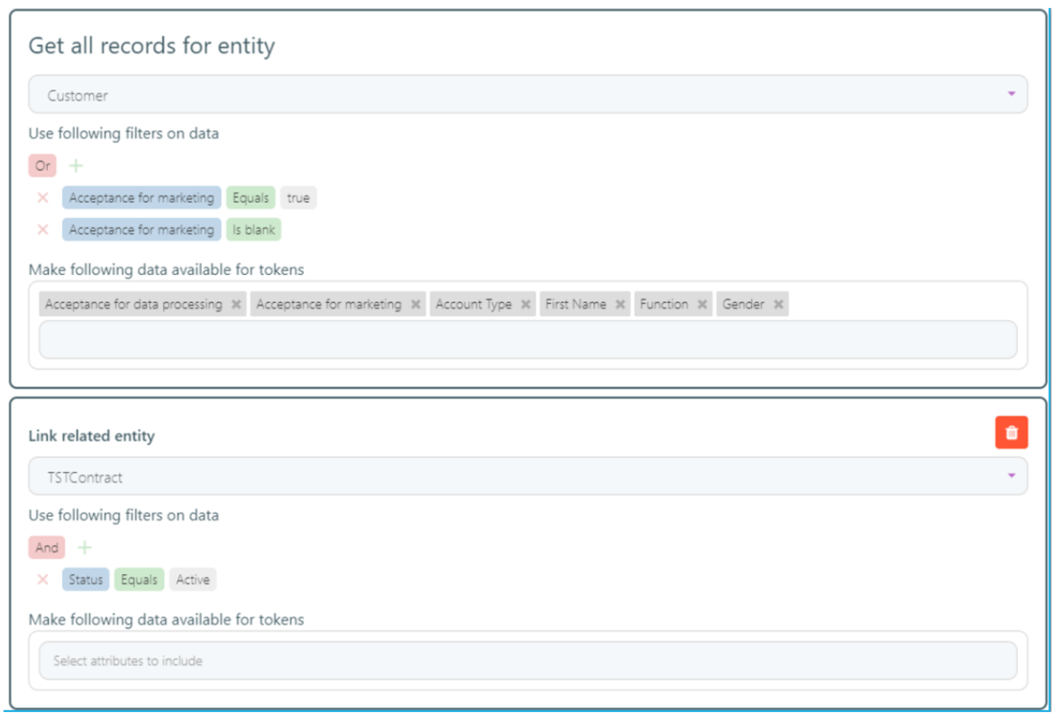


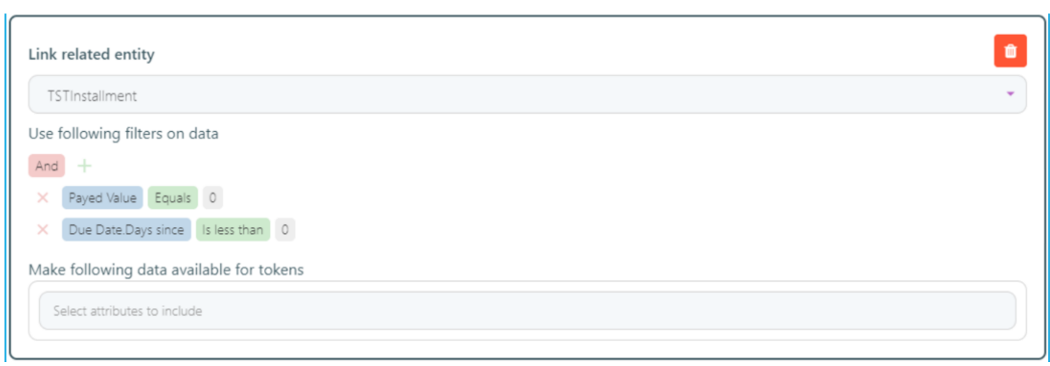
SEGMENT WITH AGGREGATES DATA

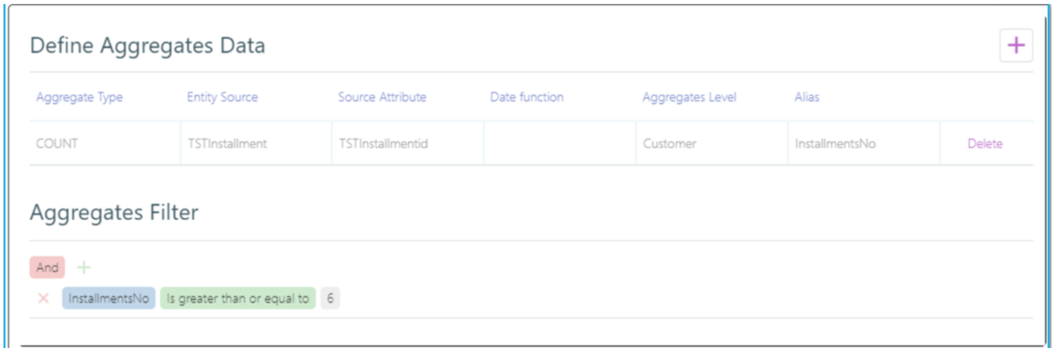
Customers with active contracts, which accepted marketing terms and conditions and which have more than five installments until the end of contract.

Entity	Part	Expression
Customer	Filters	AcceptanceForMarketing equals true OR AcceptanceForMarketing is blank.
	Tokens	Phone, Email, First Name, Last Name
Contract	Filters	Status equals active
	Tokens	-

Entity	Part	Expression
Installment	Filters	PayedValue equals 0 AND DueDate.DaysSince is less than 0.
	Tokens	-
Aggregates	Defined	Count(Installments) as InstallmentsNo.
	Tokens	InstalmentsNo is greater than or equal to 6.







Get Records for Entity

To set up a query and define a segment, for each level, select the entity and set all the conditions that will be applied on the selected entity.

In the entity section, you can add all entities involved in the query. Entities start with the main entity and continue with related entities, one for each level. Usually, the first entity is the Customer entity, but can be any entity from the data model.

NOTE

- When defining a segment, the first entity selected to define conditions and tokens becomes the context entity of that segment.
- Only one related entity can be linked to a parent entity. You cannot add several related entities to the same parent entity. For example, if you select the Customer entity as your context entity, you can only add conditions for “Loan Applications” or for “Loan Agreements”, not for both in the same segment.

We recommend users to create two segments using the following route:

Customer

→ Loan Application

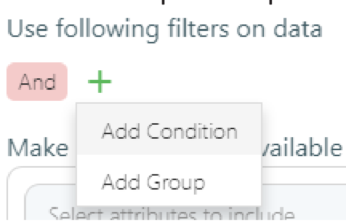
Customer

→ Loan Agreements

Correct use cases:

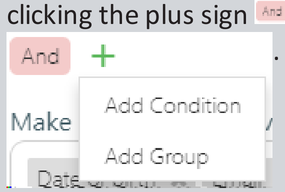
- You can link Customer -> Contract -> Installments. That means three deep levels, one entity on each level (customer on the first, contract linked by customer on the second and installment linked by contract on the third).
- You cannot link Customer -> Contract, Financial Assessment because both Contract and Financial Assessment are linked by the same entity, Contract.

You can set complex conditions using simple or nested group conditions. The figure below shows the Customer entity filtered by age between 18 and 74 and acceptance for marketing equal true.
You can set up a complex filter by clicking the plus (+) sign and **Add Group**



A new nested group will be added to the filter condition you can add a new expression similar to: ((a>=10 or b='condition') and c=true).

The table below provides all the settings you can do in the entity section:

Setting	Description
Get all records for entity	Select the main entity that will be the first level of query. On the second level of query, you can insert only one related entity.
Use following filters on data	Add filters on the selected entity. You can add a condition by clicking the plus sign  and selecting **Add Condition**  . A new condition will be inserted. 

Setting	Description
Condition sign	The AND condition is displayed by default; however, you can select another condition: OR, NOT AND and NOT OR.
Deleting a condition	Click the X sign to delete an inserted condition.

Setting	Description
Condition attribute 	The next field represents one of the entity's attributes. You can select it by clicking on the field and opening a list with all the attributes. The date type attributes are marked with an arrow and you can select one of these functions: • Days since – the count of the days which have past from the date until now. • Months since – the count of the months which have past from the date until now. • Years since – the count of the years past from the date until now. • Year of – the year of the date. • Month of – the month of the date. • Date of – returns only the date part (without time) from the date. • Weekday of – the weekday number of the date. • Has anniversary today – returns true if today has the same day and month as the date. • Days until – the count of the days from today until the future date • Months until – the count of the months from today until a future date • Years until – the count of the years from today until a future date. • Day Of – the day of the date. • Days until Anniversary – the count of the days from today

Setting	Description
	until the date. • For "since" functions, if the date is a future date, then the return count will be negative. • For "until" functions, if the date is a past date, then the return count will be negative.
Condition operator Equals	Select the conditional operator by clicking on the label and selecting the desired one from the list. For the date type attributes there are two more operators: @Equals and @Does not equal, that compare the date with some predefined parameters such as current_year, current_month, current_day, current_weekday. The values for these parameters are evaluated at runtime.
Condition value	The last part of a condition is represented by value. There are different types of values for each type of attribute and operator. You can add a simple text or number, an interval of numbers, values from other entity for lookup attribute type, option set items and values based on current date as those above.
Group condition	Add a group condition by clicking the plus sign And + and selecting **Add Group** . You can also add multiple levels of groups (nested groups).
Make following data available for tokens	Select attributes from the selected entity and use them as tokens in digital content templates to tailor the communication with targeted customers. An attribute can be searched typing the first letters or browsing it in the list.
Add Entity	Add a related entity to current query.
Links related to entity	The list is populated with entities related to the main entity and gives you the possibility to choose only one. If more than one related is needed for the same entity, you should create another segment.

Define Aggregate Data

In the **Define Aggregates Data** section, you can define the data to use as token or to add a new condition to filter the dataset. To add aggregate data, next to the **Define Aggregates Data** section title, click the **Add a row** icon. An empty row is added in the table. Using inline editing, set the following fields:

Field	Description
Aggregate Type	Select an aggregate function applied over the dataset: SUM, MAX, MIN, COUNT, AVG
Entity Source	Represents one of the selected entities, the source for the aggregate data. The drop-down list is populated only with the entities selected in the Get all records for entity section.
Source Attribute	Select one of the entity source attributes. It is used to calculate the aggregate function.

Field	Description
Date function	If the source attribute is a datetime attribute, you can use a date function to obtain different kind of information starting with the date: • Days since – the count of the days which have past from the date until now • Months since – the count of the months which have past from the date until now • Years since – the count of the years past from the date until now • Year of – the year of the date • Month of – the month of the date • Date of – returns only the date part (without time) from the date • Weekday of – the weekday number of the date • Has anniversary today – returns true if today has the same day and month as the date • Days until – the count of the days from today until the future date • Months until – the count of the months from today until a future date • Years until – the count of the years from today until a future date. • Day Of – the day of the date. • Days until Anniversary – the count of the days from today until the date. • For “since” functions, if the date is a future date, then the return count will be negative. • For “until” functions, if the date is a past date, then the return count will be negative.

Field	Description
Aggregates Levels	Represents one of the query levels used by the function to aggregate. It works like a group by clause.
Alias	Alias that you can use in aggregates filter.

You can add segmentation conditions based on aggregated attributes. This is similar to filtering entities' attributes. You can define aggregated fields only by using the related entities added in the entity conditions definition section.

Example of aggregated fields:

- The total number of active contracts the customer has – use "Count" Function for "Loan Agreement", aggregated at the customer level. Conditions for the Contract status = Active will be defined in the initial condition definition area at the "Loan Agreements" level.
- The rejected applications at the customer level - use "Count" Function for "Loan Application", aggregated at the customer level. Conditions for Loan Application Status = Rejected will be defined in the initial condition definition area at the "Loan Applications" level.

Example of a condition added for an aggregated field:

- The number of active contracts <= 1 – to select the customers that have at least 1 active contract
- Number of Rejected Applications = 0 – to select the customers with no rejected applications

Set Tokens for Personalized Content

In the **Return Following Tokens** section, select all the tokens that will be used in personalized content. The section allows inline editing records.

> **NOTE**
> In order to set tokens for personalized content, you need to first create the content tokens. For information on how to add content tokens, see Set Tokens for Personalized Content.

To set a token to be used in personalized content, follow these steps:

1. Next to the **Return Following Tokens** section title, click the **Add** icon (+). An empty line is added to the list.
2. In the empty line, click in the **Source Name** column and select the entity which contains the attribute whose value will be returned in personalized content.
3. Click in the **Attribute** column and select the attribute whose value will be returned in the personalized content.
4. Press **ENTER**. The alias of the attribute you selected at the previous step will be automatically displayed in the **Alias** column.

Return Following Tokens

Entity Source	Attribute	Alias	
Customer	Account Type	Customer.Account_Type	Delete
Customer	Last name	Customer.Last_name	Delete
Customer	Name	Customer.Name	Delete
Customer	First Name	Customer.First_Name	Delete
Customer	Email	RECEIVER_EMAIL	Delete
Customer	Mobile Phone	RECEIVER_PHONE	Delete
TSTContract	CTR Date	TSTContract.CTR_Date	Delete
TSTContract	CTR Amount	TSTContract.CTR_Amount	Delete
TSTContract	CTR Type	TSTContract.CTR_Type	Delete

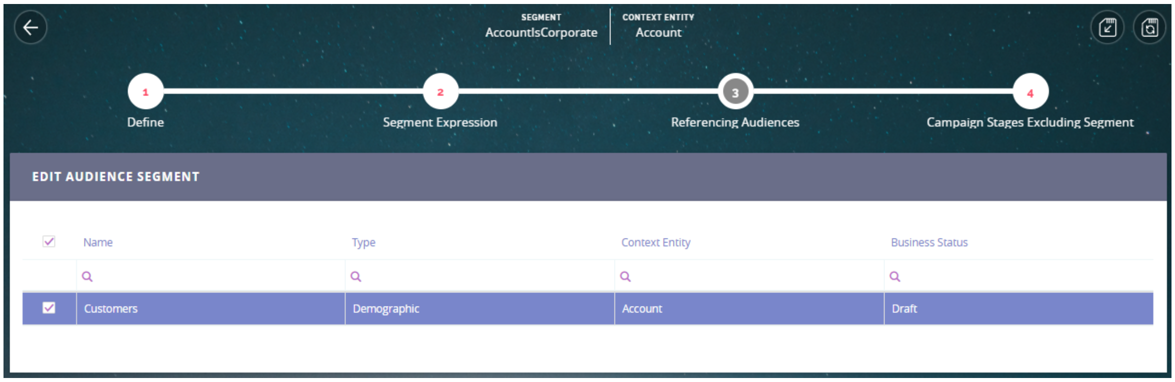
Follow the steps above to set all the token that you want to use.

5. Click the **Save and Close** button () at the top right corner to save the content type.

IMPORTANT!
If you add the customer persona to audiences which will be used in campaigns, you should provide two tokens, as follows: the email and phone information. You can do so by adding for the Email and Mobile Phone attributes the alias RECEIVER_EMAIL and RECEIVER_PHONE.

Viewing Audiences that Use Current Customer Persona

To view the list of audiences that use the current customer persona, in the customer persona configuration page, click the **Referencing Audiences** step.



NOTE
For the **Referencing Audiences** list to show any records, you should add the segment to at least one digital audience.

The **Referencing Audiences** list provides the following details (field values):

Field	Description
Name	The name of the audience.
Type	The audience type.
Context Entity	The entity used to combine all the segments into an audience.
Business Status	The audience status.

Viewing Campaign Stages Excluding Segment

To view the list of campaigns that exclude the data returned by the current segment, in the customer persona configuration page, click the **Campaign Stages Excluding Segment** step.

NOTE

For the **Campaign Stages Excluding Segment** list to show any records, you should exclude the segment from at least one campaign.

The Campaign Stages Excluding Segment list provides the following details (field values):

Field	Description
Name	The campaign stage name.
Start Date	Campaign stage start date.
End Date	Campaign stage end date.
Schedule Type	The campaign stage schedule type as it has been defined into a campaign.
Recurrence Type	Campaign stage recurrence type.
Business Status	The state of the campaign stage state.
Created On	Campaign stage creation date.
Created by	The user who created the campaign stage.

Audiences Management

Audiences are groups of people with specific interests, intents, demographics or education levels and can be reached based on who they are and how they have interacted with the business. The resulting list of individuals based on the defined conditions in the definition of customer personas and audiences will represent the target group of a campaign.

FintechOS provides you with three types of audiences:

- **ImportedList**. If the campaign has started and activities have been sent and you need to correct the list, you should redo the campaign.

NOTE
Once activities have been generated, excluding the preview ones, you can no longer delete the list.

- **Static**. The audience is selected and the list is generated. Once the campaign is started, it behaves similar to audience of type ImportedList.
- **Dynamic**. Every time a campaign is executed, the audience will also be executed, meaning that new members and member instances will be generated in case new content settings have been exposed by the audience.

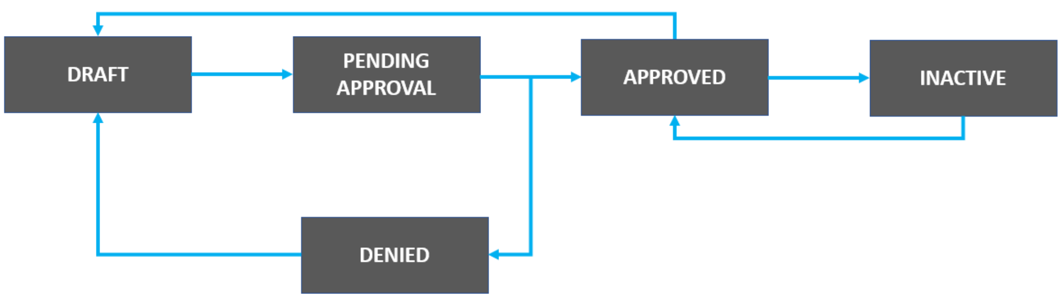
IMPORTANT!
Campaigns with dynamic audience always take into account how the audience looks like, the customer personas and personalized content at the moment the campaign stage is run.

The table below describes the states of an audience:

State	Description
Draft	The first state of an audience. Only in this state, an audience can be modified.

State	Description
Pending Approval	In this state, an audience is waiting to be approved or denied.
Approved	The audience has been approved to be used in campaigns. You can only use approved audiences in campaigns.
Denied	The audience has not been approved to be used in campaigns.
Inactive	The audience has been approved but has been removed.

The figure below presents the audience state transitions:



This section covers the following topics:

- "Viewing Audiences" on page 51
- "Creating Audiences" on the next page
- "Viewing Campaigns Referencing Current Audience" on page 55

Creating Audiences

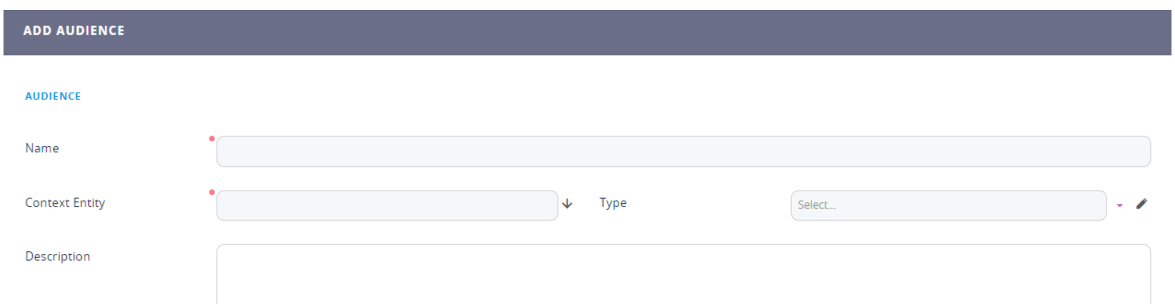
An audience represents a combination of multiple customer personas, that have the same persona data model settings (i.e. the audience segments are based on the same entity).

NOTE
Before creating audiences, you should create at least one persona data model setting and at least one customer persona.

To create an audience that you can later use in your campaigns, follow these steps:

Step 1. Insert audience

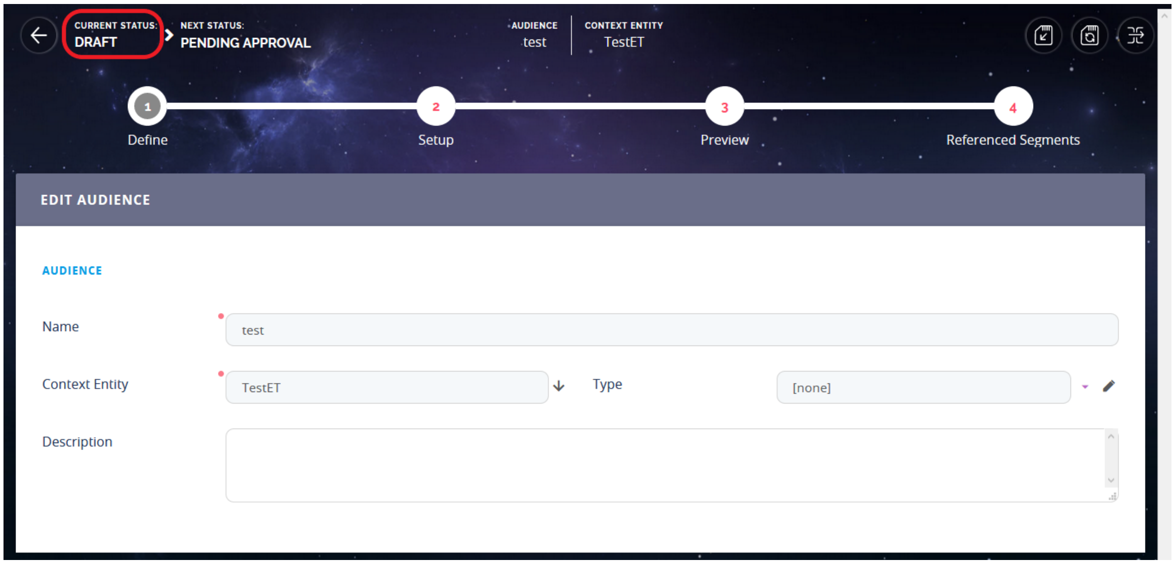
In the **Audiences List** page, click the **Insert** button ( ) at the top right corner of the page. The audience configuration page opens.



Step 2. Define the audience

The audience configuration page opens by default on the **Define** tab.

Type the **Name** of the audience and select the **Context Entity**, that is the entity you added the customer persona data model, then click the **Save and reload** button at the top right corner of the page to save the audience. The audience will have the status **Draft**:



You can now set up the audience.

Step 3. Set up the audience

Click the **Setup** tab.

You can combine the desired customer personas using union, intersect or except, directly or creating subgroups.

> **NOTE**
> You cannot combine in the same audience definition customer personas which have context entities . Audiences can be defined only by combining customer personas with the same context entity.

The table below provides all the settings you can do in the Setup section:

Setting	Description
Include	Allows you to combine segments using union and intersect operators.

Setting	Description
Include Operator	To combine segments, you should select at least one intersect or union operator  . Intersect operator adds only common data from combined segments to audience. Union operator adds all data from all combined segments to audience.
Add Audience Segment	Allows you to add an audience segment by clicking the plus (+) sign and selecting Add Audience Segment. After selecting the desired audience segment, it will be inserted into the digital audience.
Add Group	Allows you to add a group of audience segments by clicking the plus (+) sign and selecting Add Group.
Delete an audience segment	Click the X sign to delete an inserted audience segment.
Choosing another audience segment	Allows you to use another audience segment by clicking on audience segment and selecting another one from the drop-down list.
Exclude	Allows you to combine segments using union and intersect operators. The resulted data will be used to exclude records from the audience. You can combine more audience segments with union and intersect and you can also create nested groups of audience segments.

Audience Setup Examples

AUDIENCE WITH SEGMENTS COMBINED IN NESTED GROUPS

Customers with some eligibility conditions, that have cash contracts OR no application in the last 3 months.

Frame	Segments Expression
Include	Minimum Eligibility Segment INTERSECT (Cash Contract Segment UNION No Application in the last 3-month Segment)
Exclude	-

AUDIENCE WITH EXCLUDE SEGMENTS

Audience with clients over 40 years old with children and annual income between 50000 and 85000, that don’t have contracts and accepted marketing terms and conditions.

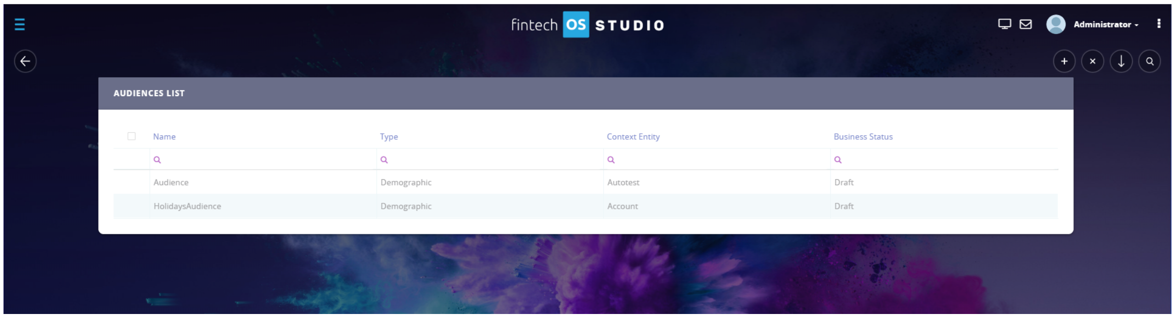
Frame	Segments Expression
Include	Clients Over 40 Segment INTERSECT Clients with children and income between 50000 and 8500 Segment
Exclude	Client with contract Segment UNION Client without Data Processing Acceptance Segment

View Referenced Segments

To view the list of segments used in the audience, click the **Referenced Segments** tab. All the segments listed have been used when setting up the audience (**Setup** section).

Viewing Audiences

To view the list of defined audiences, in FintechOS Studio, click the main menu icon ( ) at the top left corner and click **Hyper-Personalization** > **Audiences**. The **Audiences List** page opens listing all audiences that have been created by you. If none, the list will show no data.



Edit audiences

NOTE
You can only modify audiences that are in the initial state, that is **Draft**.

To edit an audience, in the **Audiences List** page, double-click the record that you want to edit. The audience configuration page appears. You can edit audience settings from the following two sections: **Define** and **Setup** and you can also change the audience status. Make the desired changes and click the **Save and Close** button () at the top right corner to save the changes.

Preview audiences

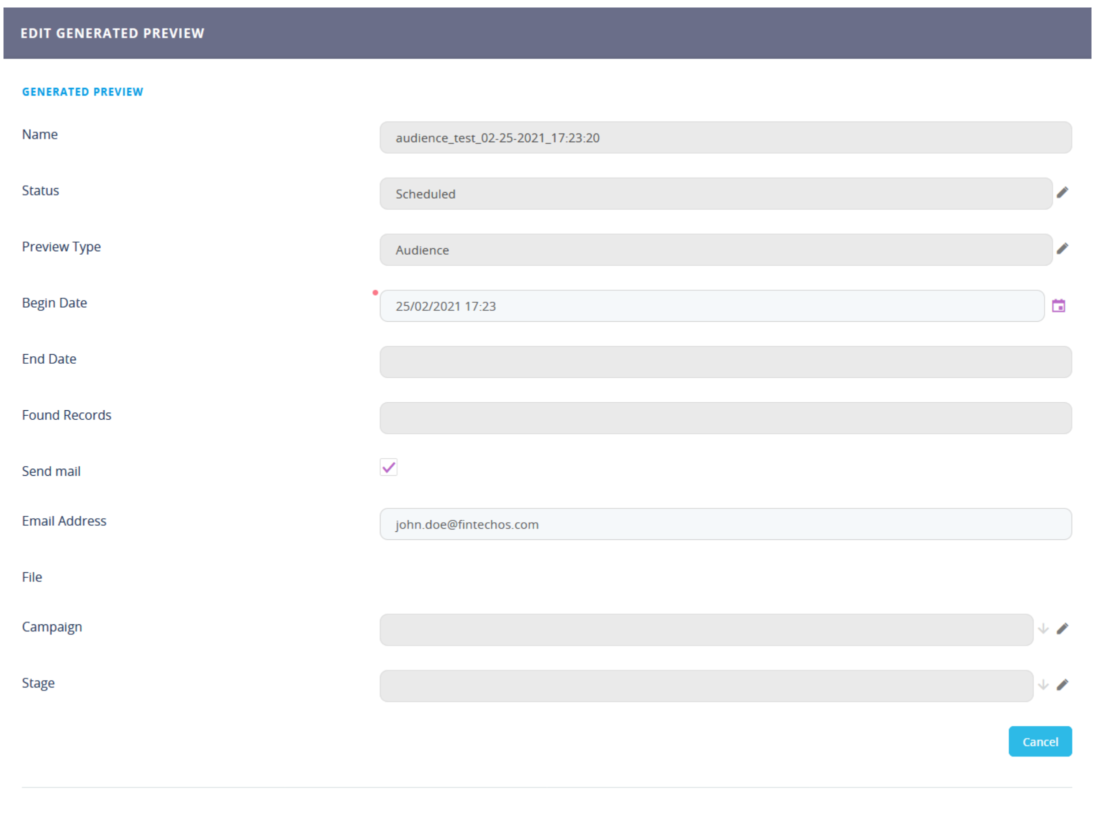
Once you have defined and saved an audience, you can generate an Excel file that lists all the audience data. The preview is generated asynchronously by a job scheduler and you have the option to receive an email notification when the Excel file is ready. To create an audience preview:

1. In the audience editor, select the **Preview** tab.
2. Click **Insert** to create a new audience preview.
3. In the Add Generated Preview window, enter a **Begin Date** for when you wish to schedule the processing for the preview and select the **Send Mail** checkbox if you wish

to send an email notification when the preview is ready.

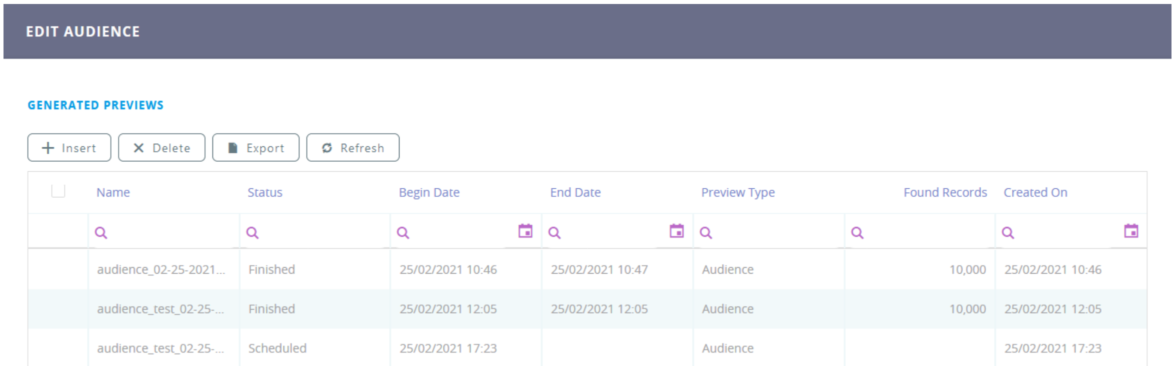
4. Click **Save and Reload** at the top right corner of the page.

5. In the Edit Generated Preview page, you can modify the **Begin Date** and **Send Mail** options and customize the **Email Address** where you wish to receive the notification once the preview is ready.

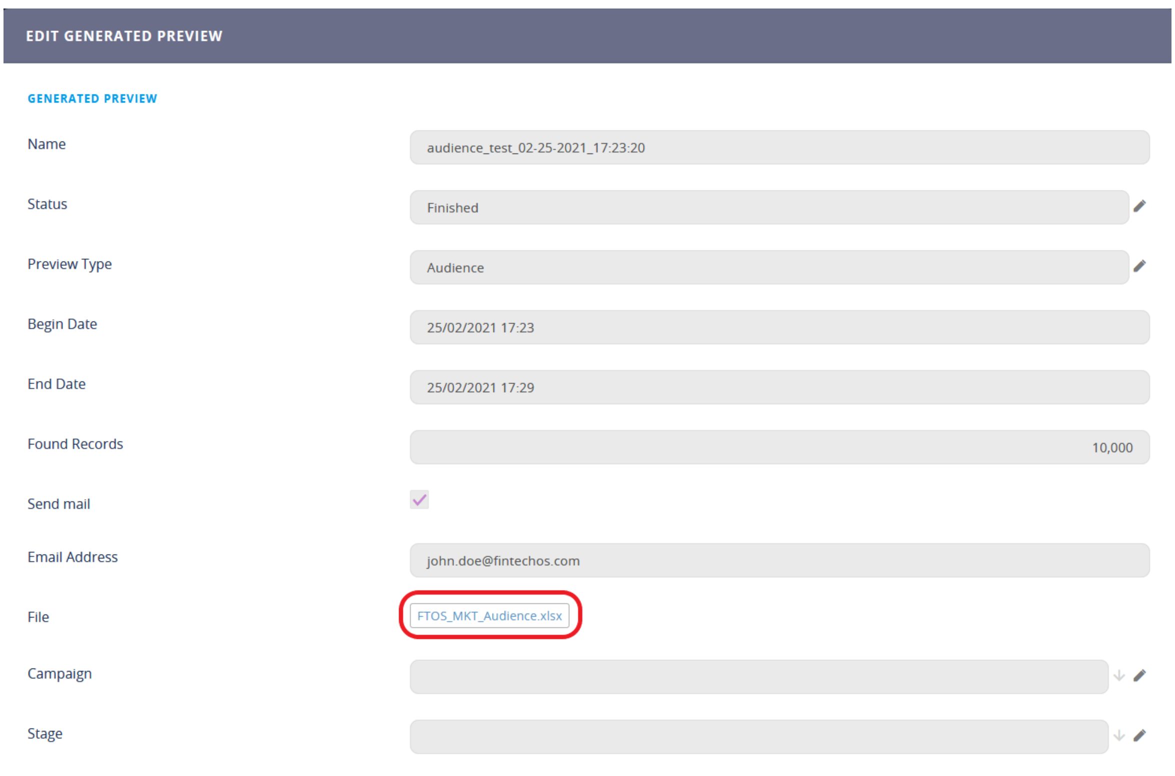


6. Click **Save and Close** at the top right corner of the page.

The Segment Preview tab lists all the audience previews tasks that have been finished, are in progress, or are scheduled to run in the future.



Once a preview generation is finished, if you select it from the list, you will be able to download the Excel file containing audience preview data.



Delete audiences

To delete an audience, in the **Audiences List** page, select the desired record and click the **Delete** button () at the top right corner of the page. A confirmation dialog appears. Click **Yes** to delete the selected record.

Viewing Campaigns Referencing Current Audience

To view the list of campaigns that use a specific audience, in the audience configuration page (**Audiences List** page, double click on the desired audience), click the **Referencing Campaigns** tab.

HINT
For the **Referencing Campaigns** list to show any records, you should be using the digital audience in at least one campaign.

The **Referencing Campaigns** list provides the following attributes:

Attribute	Description
Name	The name of the campaign.
Campaign Type	The type of campaign.
Campaign Subtype	The subtype of campaign.
Start Date	The date when the campaign will start.
End Date	The date when the campaign will end.
Business Status	The state of campaign.

Attribute	Description
Template	The personalized content used in campaign.