

# Job Manager

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## Synchronization of Jobs with Planning Elements

Version 7.0

# Table of Contents

1	Introduction.....	4
1.1	Application Case .....	4
2	Configuration for Jobs .....	5
2.1	Combination of Workflow and Job Type.....	5
2.2	Configure <i>config</i> Tab .....	6
2.3	Configure Fields for the Position in the Element Tree .....	7
2.4	Link Planning Element Fields with Job Variables.....	9
2.4.1	Dimensions .....	10
2.4.2	Basic Data .....	12
2.4.3	Budget Data .....	13
2.4.4	Timelines .....	13
2.5	Important Notes for the Configuration .....	14
2.6	Check Configuration .....	15
3	Synchronization with BPMN Process .....	16
3.1	Prerequisites and Setup Steps.....	16
3.1.1	Prerequisites.....	16
3.1.1.1	Do timelines need to be synchronized? .....	16
3.1.1.2	Do planned budgets need to be synchronized? .....	18
3.1.1.3	Are there other variables over which general data or dimension values must be synchronized?.....	19
3.1.2	Setup of Process Type .....	19
3.1.2.1	Create Type .....	19
3.1.2.2	Set up Datasheet Layout .....	21
3.1.3	Setup of Workflow.....	22
3.1.4	General Setup of Type .....	23
3.2	Configuration of Process Type.....	24
3.2.1	Automatically Added Variables .....	24
3.2.2	<i>Synchronization</i> Tab .....	24
3.2.2.1	General and dimensions.....	25
3.2.2.2	Timelines and budgets.....	26
3.2.2.3	Planner levels .....	29
3.3	Configuration of Service Tasks for Synchronization with BPMN Workflows .....	30
3.3.1	Select Method .....	30

- 3.3.2 Configure Input Parameters ..... 30
  - 3.3.2.1 body.parent ..... 31
  - 3.3.2.2 body.values ..... 31
- 3.3.3 Add Error Event Handler ..... 33

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# 1 Introduction

This document describes the synchronization between jobs in the *Job Manager* module and planning elements in the *Marketing Planner* module. The target group of this document are exclusively BrandMaker employees, especially consultants who configure the customer system.

## 1.1 Application Case

The synchronization described in this document enables a job or a process to create a new planning element in the Marketing Planner in a defined workflow step and to fill it with data or to keep it synchronized. The planning element is created fully automatically. The position in the element tree results from the data stored in the job/process.

This feature is suitable for use cases in which the unit represented by a planning element in the Marketing Planner, for example a campaign, is the result of a job/process in the Job Manager.

The document distinguishes between two main paths: The synchronization of a job with a classical workflow (see chapter 2) or process with a BPMN workflow (see chapter 3). Use jobs with classic workflow if you need bidirectional synchronization.

## 2 Configuration for Jobs

This chapter describes the configuration settings you need to make for the synchronization feature with jobs. The following substeps are involved in detail:

- Set event to trigger synchronization, see chapter 2.1
- Specify whether planning element is deleted when job is finished or deleted, see chapter 2.1
- Configure *config* tab for linkage fields, see chapter 2.2
- Configure fields for the position in the element tree, see chapter 2.3
- Link planning element fields with job variables, see chapter 2.4
- Check configuration, see chapter 2.6

Please also pay attention to the notes in chapter 2.5.

### 2.1 Combination of Workflow and Job Type

The combination of job type and workflow is defined under *> Administration > Datasheet Engine > Assign Workflows*. At this point you make the following specifications for the synchronization feature:

- Set event to trigger synchronization
- Specify whether planning element is deleted when job is finished or deleted

You can define the following events for synchronization for each workflow step:

- When the form is saved
- When the workflow step is reached
- For both events

You also define whether the planning element is deleted if the job is terminated or deleted.

#### **Set trigger event and specify whether planning element is deleted when job is finished or deleted**

1. Click *> Administration > Datasheet Engine > Assign Workflows*.
2. Find the job type whose combination with a workflow you want to edit.
3. In the line of the job type, click the symbol .

A selection field for assigning a workflow and a list of assigned workflows is displayed.

4. If the desired workflow has not yet been assigned, do this after.

A list of assigned workflows is displayed for the job type.

5. For the workflow whose combination with the job type you want to edit for synchronization, click the symbol .

The *Manage actions of workflow steps* dialog is displayed.

6. In the *Workflow steps* area, define for each step whether synchronization takes place:

- *No action*: No synchronization of the element in Marketing Planner
  - *Synchronize with Planner*: In workflow steps where this selection is set, the data in the Marketing Planner is updated when the job is saved.
7. In the Operations section, define what happens when the job is deleted and canceled.
    - *No action*: The planning element remains unchanged.
    - *Delete*: The planning element is deleted.
  8. Click *Accept*.
- The settings are saved.
9. Click *Cancel*.

The dialog is closed. You have specified the trigger event and the action to be taken when the job is deleted.

## 2.2 Configure *config* Tab

For a successful synchronization, a tab must be created on the data sheet of the job type. On the tab, the mapping between the data of the job and the planning element is created by inserting so-called linkage variables, see chapter 2.3 and 2.4.

Note that the name and technical name of the tab must be exactly *config*.

To prevent users from accidentally damaging the synchronization when editing a job, the tab should be set as invisible for all user groups in the visibility settings.

## 2.3 Configure Fields for the Position in the Element Tree

Planning elements can be created in all levels of the element tree in the Marketing Planner using the synchronization feature. In order to enable the user to set the levels in the job and to ensure correct synchronization afterwards, the following variables must be created in the job type:

- *Source variables* on any tab (one variable per desired level):  
In these variables the user selects the levels one after the other. The variable type is *single selection*, the variable is filled by a custom structure. In the custom structure, the selectable elements of the respective level must be entered correctly. If an element exists on a level, under which no element is to be created by the synchronization feature, this element does not have to be listed in the custom structure.
- *Linkage variables* on the *config* tab (one variable per desired level). The variable type is *Simple text* field. To setup the synchronization successfully, the technical name must be named according to one of the two following options:
  - If all jobs based on the type can only be synchronized with planning elements of a fixed tree level, then the technical name of linkage variables must be named as follows:  
PLANNERLEVELx\_ttt
    - x = the target level in the element tree of the Marketing Planner
    - ttt = the technical name of the source variable
  - If all jobs based on the type can be synchronized with planning elements on various tree levels, then the technical name of linkage variables must be named as follows:  
PLANNERLEVEL\_OPTx\_ttt
    - x = the target level in the element tree of the Marketing Planner
    - ttt = the technical name of the source variable

### Note

For a planning element to be created, the following conditions must be fulfilled:

- The user has made a selection for at least the first level in the second case.
- The user has specified a fiscal year, see chapter 2.4.2.

**Example for synchronization with planning elements on level 5**

In Marketing Planner	Linkage variable (tab <i>config</i> )	Source variable (any tab)
Level 1	<p><i>Type:</i> Simple text</p> <p><i>Example:</i> Technical name = PLANNERLEVEL1_Orga1</p> <p><b>Note</b> If no corresponding variable is defined, no planning element can be created, and no synchronization takes place.</p>	<p><i>Type:</i> Single selection filled by custom structure</p> <p><i>Example:</i> Technical name = Orga1</p>
Level 2	<p><i>Type:</i> Simple text</p> <p><i>Example:</i> Technical name = PLANNERLEVEL2_Orga2</p>	<p><i>Type:</i> Single selection filled by custom structure</p> <p><i>Example:</i> Technical name = Orga2</p>
Level 3	<p><i>Type:</i> Simple text</p> <p><i>Example:</i> Technical name = PLANNERLEVEL3_Region</p>	<p><i>Type:</i> Single selection filled by custom structure</p> <p><i>Example:</i> Technical name = Region</p>
Level 4	<p><i>Type:</i> Simple text</p> <p><i>Example:</i> Technical name = PLANNERLEVEL4_Campaign</p>	<p><i>Type:</i> Single selection filled by custom structure</p> <p><i>Example:</i> Technical name = Campaign</p>
Level 5	<p><i>Type:</i> Simple text</p> <p><i>Example:</i> Technical name = PLANNERLEVEL5_Activity</p>	<p><i>Type:</i> Single selection filled by custom structure</p> <p><i>Example:</i> Technical name = Activity</p>
Lower-level planning element	<p><i>Type:</i> Simple text</p> <p><i>Example:</i> Technical name = PLANNERSUBNODE</p> <p><b>Note</b> As soon as this job variable exists, the planning element is created below the planning element that is already linked to the higher-level job. The creation of the planning element using selected tree levels is thus skipped.</p>	<p>No further configuration is necessary.</p>

## 2.4 Link Planning Element Fields with Job Variables

For correct synchronization of data between Marketing Planner and Job Manager, the fields must be linked to the corresponding job variables. Source and linkage variables are used in the same way as for level selection (see chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**):

- *Source variables* on any tab (one variable per desired field): In these variables the user selects the values for the fields in the Marketing Planner. The variable type and its filling can be found in the tables in the following chapters. Please note that the entries that can be selected in the job must exactly match the designations in the Marketing Planner.
- *Linkage variables* on the *config tab* (one variable per desired field): The variable type is *Simple Text* Field. To setup the synchronization successfully, the technical name must be named according to one of the two following options:
  - For the transmission of value of source variable: FIELDNAME\_iii\_ttt
    - iii = The internal ID of the target dimension in the planning element (only for dimensions)
    - ttt = the technical name of the source variable
  - For the transmission of the display value of source variable: FIELDNAME\_iii\_ttt\_DISPLAYVALUE
    - iii = The internal ID of the target dimension in the planning element (only for dimensions)
    - ttt = the technical name of the source variable

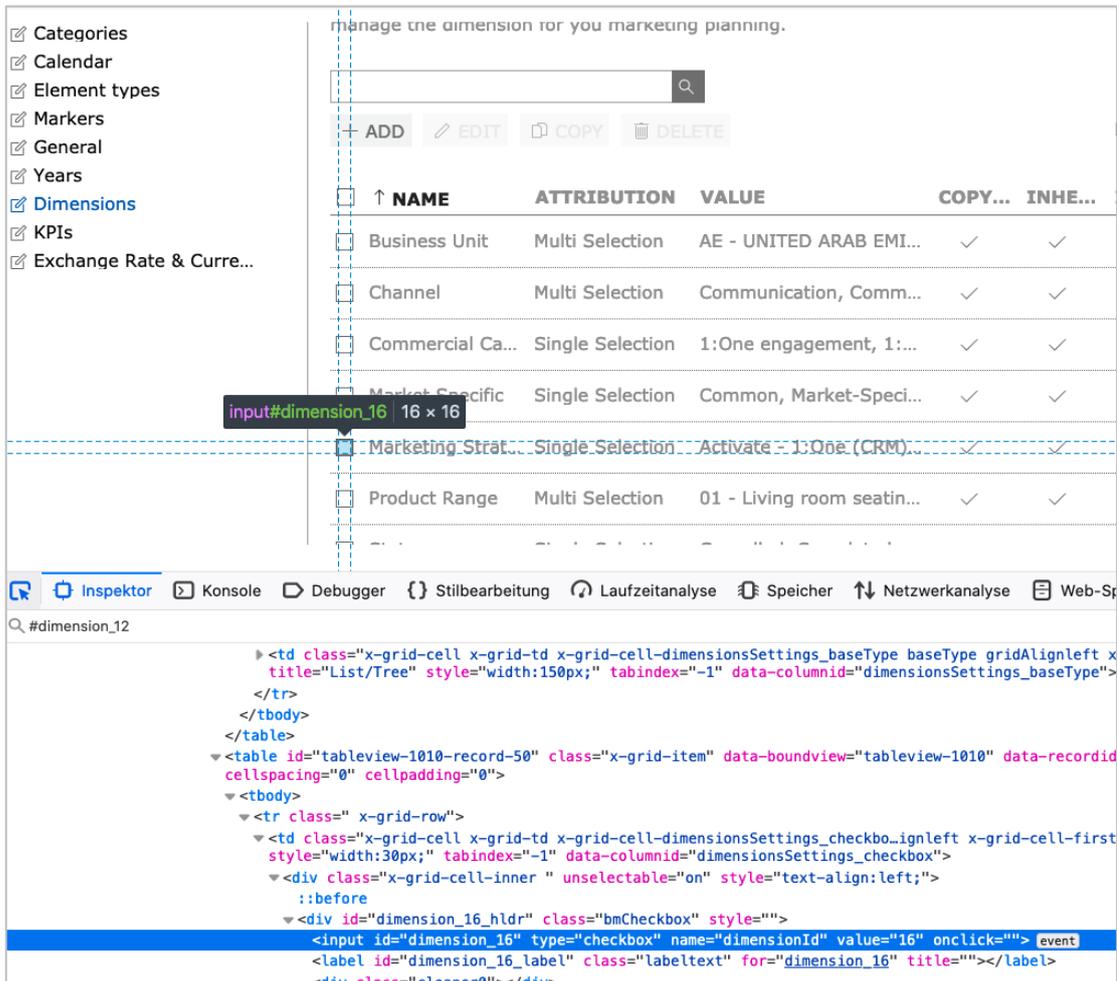
### Note

The internal ID 'iii' of the target dimension cannot be found out via the user interface of the Marketing Planner. To find out the IDs, follow the procedure in chapter 2.4.1.

## 2.4.1 Dimensions

### Determine dimension IDs

1. Log into the application in Firefox.
2. Click > *Marketing Planner* > *Settings* > *Dimensions*.
3. Open the Inspector (FF menu > Web Developer > Inspector).
4. In the inspector, navigate to the checkbox element of the dimension whose ID you want to determine:



The Inspector shows the ID of the dimension: In the above example of the "Marketing Strategy" dimension, the dimension ID is 16.

In Marketing Planner	Linkage variable (tab config)	Source variable (any tab)
Single selection with list structure	Type: Simple text field Example: Technical name = DIMENSIONID_14_agency	Type: Single selection from custom structure Example: Technical name = agency

In Marketing Planner	Linkage variable (tab config)	Source variable (any tab)
Single selection with tree structure	<p>Type: Simple text field</p> <p>Example:                      Technical name 1= DIMENSIONID_33_area                      Technical name 2= DIMENSIONID_33_tool</p>	<p>Type: Single selection from custom structure</p> <p><b>Note</b>                      Several selection fields must be used, which are linked to the same internal ID 'iii', in order to reproduce the levels of the tree structure of the target dimension.</p> <p>Example:                      Technical name 1 = area                      Technical name 2 = tool</p>
Long text	<p>Type: Simple text field</p> <p>Example:                      Technical name = DIMENSIONID_4_description</p>	<p>Type: Multi-line text field</p> <p>Example:                      Technical name = description</p>
	<p>Type: Simple text field</p> <p><b>Note:</b> To synchronize a relation variable, you have two possibilities: You can synchronize the value or the display value. You decide this by the technical name of the linkage variable: If the technical name contains *DISPLAYVALUE_*, the display value is synchronized. Please note the following examples.</p> <p>Example:                      Synchronization of the value: Technical name = DIMENSIONID_4_relation                      Synchronization of the display value: Technical name = DIMENSIONID_DISPLAYVALUE_4_relation</p>	<p>Type: Relation field</p> <p>Example:                      Technical name = relation</p>
Multiple selection with list structure	<p>Type: Simple text field</p> <p>Example:                      Technical name = DIMENSIONID_27_assortment</p>	<p>Type: Multiple selection from custom structure</p> <p>Example:                      Technical name = assortment</p>
Free value	<p>Type: Simple text field</p> <p>Example:                      Technical name = DIMENSIONID_45_message</p>	<p>Type: Simple text field</p> <p>Example:                      Technical name = message</p>

## 2.4.2 Basic Data

In Marketing Planner	Linkage variable (tab <i>config</i> )	Source variable (any tab)
Name	The link between the job name and the name of the planning element takes place automatically.	<i>System variable:</i> Jobname No further configuration necessary.
Fiscal year	<i>Type:</i> Simple text field <i>Example:</i> Technical name = PLANNERYEAR_year	<i>Type:</i> Single selection from custom structure <i>Example:</i> Technical name = year
Note	<i>Type:</i> Simple text field <i>Example:</i> Technical name = PLANNERDESC_description	<i>Type:</i> Multi-line text field or CK Editor <i>Example:</i> Technical name = description
Responsible person	The link between the person responsible in the planning element and the creator of the job takes place automatically.	<i>Systemvariable:</i> Creator No further configuration necessary.
Element ID	<i>Type:</i> Simple text field <i>Example:</i> Technical name = PLANNERNODEID  <b>Note</b> When the planning element is created automatically in the Marketing Planner, the resulting internal ID is written back to the job variable. This variable must exist in the job.	No further configuration necessary.

### 2.4.3 Budget Data

In Marketing Planner	Linkage variable (tab <i>config</i> )	Source variable (any tab)
Planned annual budget	<p>Type: Simple text field</p> <p>Example: Technical name = BUDGETENTRY_annualbudget</p>	<p>Type: Number</p> <p>Example: Technical name = annualbudget</p> <p><b>Note</b> The planned annual budget refers to the current fiscal year. Therefore, the fiscal year must always be set!</p>
Montly budgets	<p>Type: Simple text field</p> <p>Example: Technical name = MONTHLYBUDGET1_aprilbudget</p> <p><b>Note</b> For correct synchronization all 12 monthly budgets must be configured. MONTHLYBUDGET1 addresses the first month of the fiskal year. In this example the fiskal year starts in April. The monthly budget of May is adressed with MONTHLYBUDGET2, of December with MONTHLYBUDGET9, etc.</p>	<p>Type: Number</p> <p>Example: Technical name = aprilbudget</p> <p><b>Note</b> A monthly budget refers to the current fiscal year. Therefore, the fiscal year must always be set!</p>

### 2.4.4 Timelines

In Marketing Planner	Linkage variable (tab <i>config</i> )	Source variable (any tab)
Start Date	<p>Type: Simple text field</p> <p>Example: Technical name = STARTDATE_startdate</p>	<p>Type: Date</p> <p>Example: Technical name = startdate</p>
End Date	<p>Type: Simple text field</p> <p>Example: Technical name = ENDDATE_enddate</p>	<p>Type: Date</p> <p>Example: Technical name = enddate</p>

In Marketing Planner	Linkage variable (tab config)	Source variable (any tab)
Color	<p><i>Type:</i> Simple text field</p> <p><i>Example:</i> Technical name = TIMELINECOLOR_12</p> <p><b>Note</b> When creating the time period in the Marketing Planner, the color value defined here is used. The color values in the Marketing Planner are numbered and can be taken from the configuration there.</p>	No further configuration necessary.
Name	When you create the period in the Marketing Planner, it automatically receives the name of the job.	No further configuration necessary.
ID	<p><i>Type:</i> Simple text field</p> <p><i>Example:</i> Technical name = PLANNERTIMELINEID</p> <p><b>Note</b> When creating the period in the Marketing Planner, the resulting period ID is written back to this job variable. This variable must exist in the job.</p>	No further configuration necessary.

## 2.5 Important Notes for the Configuration

If a sub-job is created with synchronization, the link to the Marketing Planner can only be established if the parent job is also synchronized.

The synchronization feature provides a basic level of error handling. Nevertheless, make sure the following:

- The selection lists defined in the job types must be consistent with the custom objects on which the data source is based.
- The selection lists defined in the job types must exactly match the data for dimensions, colors and element levels configured in the Marketing Planner.

## 2.6 Check Configuration

When you have completed the configuration, you can check it. You can access the check function under > *Administration* > *Datasheet Engine* > *Assign Workflows*.

### Check configuration

1. Click > *Administration* > *Datasheet Engine* > *Assign Workflows*.
2. Find the job type whose configuration you want to validate.
3. Click the icon  in the row for the job type.

A workflow assignment check box and a list of assigned workflows is displayed.

4. Click the icon  for the workflow whose combination with the job type you want to validate.

The Manage Actions of Workflow Steps dialog appears.

5. Click *Check*.

The configuration is checked. This may take a moment.

The result of the check is displayed.

6. If there are errors, note *Field* and *Reason*.
7. Click *Close*.

The result is closed.

8. Click *Cancel*.

The dialog is closed. You have checked the configuration. Correct existing errors and check again if necessary.

## 3 Synchronization with BPMN Process

This chapter describes how to correctly set up synchronization with a BPMN process. The chapter has the following structure:

- Prerequisites and Setup Steps see chapter 3.1: This section describes the requirements that must be met for a successful setup and guides you through all necessary configuration steps. For detailed Information and background information, this chapter links to the following sections.
- Configuration of Process Type see chapter 3.1: This section gives detailed background information on the configuration of the type.
- Configuration of Service Tasks see chapter 0: This section gives detailed background information on the configuration of service tasks.

### 3.1 Prerequisites and Setup Steps

#### Note

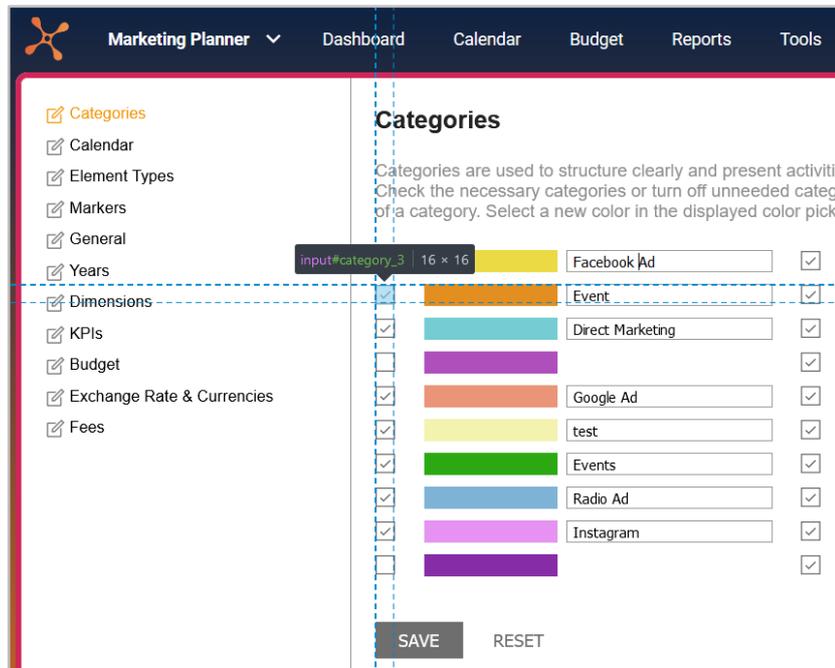
This description focuses on the configuration steps for a successful setup of the synchronization. Of course, you need to make further configurations for the intended function of the job.

#### 3.1.1 Prerequisites

##### 3.1.1.1 *Do timelines need to be synchronized?*

If yes, check whether the custom structure `PM_MAPL_CATEGORY` already exists. If not, execute the following steps:

1. Click > *Marketing Planner* > *Settings* > *Categories*.
2. Open your browser's developer tool, e. g. Inspector in Firefox (FF menu > Web Developer > Inspector).
3. In the developer tool, navigate to the checkbox for the category whose ID you want to determine:



For example, in the above screenshot, the ID of the marked category is 3 and the name is *Event*.

4. Determine the IDs of all needed timeline categories and the corresponding names.
5. Click > *Administration > Data Structures & Workflows > Custom Objects & Structures > Custom Structures*.
6. Create a new custom structure and name it exactly *PM\_MAPL\_CATEGORY*. The Custom structure has no upper structure and is not an affiliate structure.
7. Save the custom structure.
8. Click > *Administration > Data Structures & Workflows > Custom Objects & Structures > Custom Objects* and select custom structure *PM\_MAPL\_CATEGORY*.
9. Create one custom object for every needed timeline category and fill in the IDs and names you determined in step 4 as follows:

<b>Name* :</b>	<input type="text" value="3"/>
<b>Name displayed* :</b>	<input type="text" value="Event"/>

You enter the ID in Name field and the category's name in the *Name displayed* field.

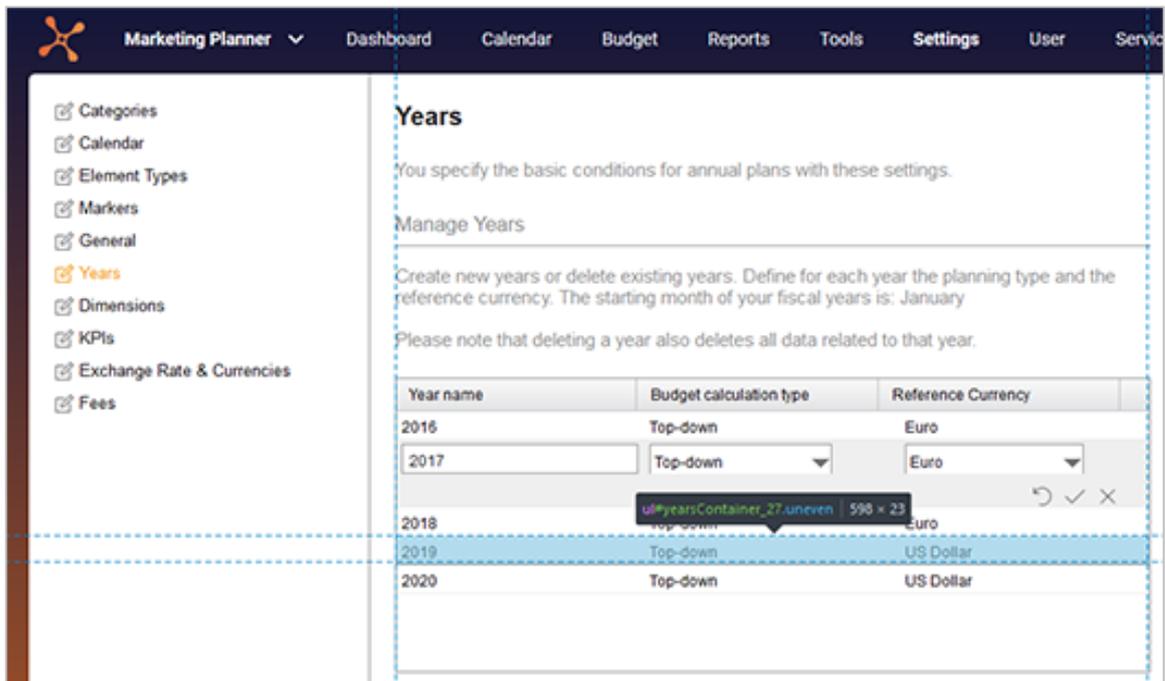
10. Save your changes.

You set up the custom structure. For background information regarding the synchronization see chapter 3.2.2.2.1.

### 3.1.1.2 Do planned budgets need to be synchronized?

If yes, check whether the custom structure *PM\_MAPL\_FY* already exists. If not, execute the following steps:

1. Click > *Marketing Planner* > *Settings* > *Years*.
2. Open your browser's developer tool, e. g. Inspector in Firefox (FF menu > Web Developer > Inspector).
3. In the developer tool, navigate to the complete row of the year whose ID you want to determine:



For example, in the above screenshot, the ID of the year named 2019 is 27.

4. Determine the IDs of all needed years and the corresponding year names.
5. Click > *Administration* > *Data Structures & Workflows* > *Custom Objects & Structures* > *Custom Structures*.
6. Create a new custom structure and name it exactly *PM\_MAPL\_FY*. The custom structure has no upper structure and is not an affiliate structure.
7. Save the custom structure.
8. Click > *Administration* > *Data Structures & Workflows* > *Custom Objects & Structures* > *Custom Objects* and select custom structure *PM\_MAPL\_FY*.
9. Create one custom object for every needed fiscal year and fill in the IDs and names you determined in step 4 as follows:

Name* :	<input type="text" value="27"/>
Name displayed* :	<input type="text" value="2019"/>

You enter the ID in *Name* field and the fiscal year's name in the *Name displayed* field.

10. Save your changes.

You set up the custom structure. For background information regarding the synchronization see chapter.

### 3.1.1.3 **Are there other variables over which general data or dimension values must be synchronized?**

Each DSE variable of *Single Select* type and *Multi Select* type must use a custom structure as data source. Check chapter 3.2.2.1 to find out which data need variable of *Single Select* type or *Multi Select* type. Then set up the custom structures accordingly.

Synchronization with BPMN workflows is based solely on IDs of the values that must be synchronized. This has an impact on the names of the custom objects. In case DSE variable is used for synchronization with BPMN workflows, custom objects of the corresponding custom structure must be built as follows:

- Name: ID of dimension value/currency/timeline category/element type/fiscal year etc.
- Display name: as desired

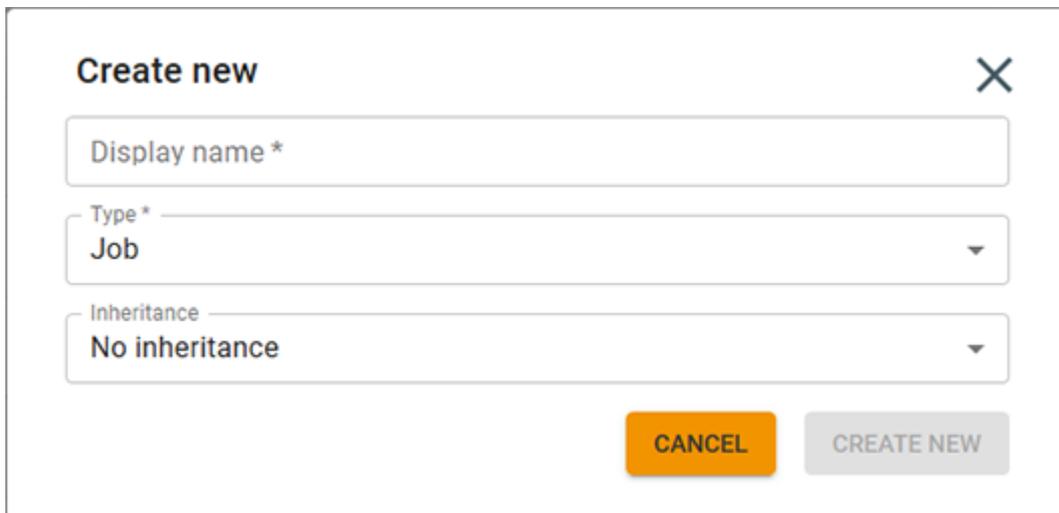
Check the preceding chapters 3.1.1.1 and 3.1.1.2 for examples.

## 3.1.2 **Setup of Process Type**

### 3.1.2.1 **Create Type**

1. Click > *Administration* > *Datasheet Engine* > *Types – New*.
2. Click *Create*.

The following dialog is displayed:



The screenshot shows a dialog box titled "Create new" with a close button (X) in the top right corner. The dialog contains three input fields: "Display name \*" (text input), "Type \*" (dropdown menu with "Job" selected), and "Inheritance" (dropdown menu with "No inheritance" selected). At the bottom, there are two buttons: "CANCEL" (orange) and "CREATE NEW" (grey).

3. Enter a name.
4. In the *Type* selection list, choose *Process*.
5. Click *Create*.

The dialog *Edit Properties* is displayed.

6. Go to *Properties* tab.
7. Edit or add to the properties of the type. Note the chapter 2.3.1 in Datasheet Engine Administration Manual.
8. Activate the *Use for synchronization* switch.

A confirmation dialog is shown.

9. Click *Confirm*.

The *Synchronization* tab is displayed.

10. Go to *Synchronization* tab.
11. Select *General and Dimensions*.
12. Note all general data and dimensions that need to be synchronized.
13. Select *Timelines and Budgets*.
14. Optional: Do timelines need to be synchronized? If yes, then:
  - a. Activate the *Synchronize timelines* switch.
15. Optional: Do planned budgets need to be synchronized? If yes, then:
  - b. Activate the *Synchronize budgets* switch.

16. Select *Planner Levels*.

17. Select fiscal year from the dropdown menu.

The complete element tree of the corresponding fiscal year is displayed on the left side.

18. Select planner level you want to use as target node.
19. Click arrow to move it to the right side.
20. Repeat steps 17 to 19 till all needed data is selected.

21. Go to *Changes* tab.

22. Click *Publish*.

A confirmation dialog is shown.

23. Click *Confirm*.

All changes are published.

24. Click *X* to close the dialog.

You have created the type and published all changes.

### 3.1.2.2 Set up Datasheet Layout

1. Click > *Administration > Datasheet Engine > Datasheet Layout*.
2. Search for the type and open its datasheet layout by clicking the pencil icon.
3. The datasheet layout is opened. Several preconfigured variable are displayed in the Available variable section on the right side.
4. Optional: Do timelines need to be synchronized? If yes, then:
  - a. Move the variable *mapl\_\_timelines* to a visible part of the datasheet layout.
  - b. If necessary, change the variable's display name to user-friendly one.
  - c. If necessary, change the column names to user-friendly ones.
  - d. If you want an error to be shown in job details, add *mapl\_\_timelines\_errors* to the visible part of the datasheet layout.
  - e. If necessary, change the variable's display name to user-friendly one.
5. Optional: Do planned budgets need to be synchronized? If yes, then:
  - a. Move the variable *mapl\_\_planned\_\_budget* to a visible part of the datasheet layout.
  - b. If necessary, change the variable's display name to user-friendly one.
  - c. If necessary, change the column names to user-friendly ones.
  - d. If you want an error to be shown in job details, add *mapl\_\_planned\_\_budget\_errors* to the visible part of the datasheet layout.
  - e. If necessary, change the variable's display name to user-friendly one.
6. Move *Planner Levels* variable to a visible part of the datasheet layout.
7. Create variables for all general data and dimensions that need to be synchronized. Note the necessary variable types according to chapter 3.2.2.1.
8. Move the created variables to the visible part of datasheet.
9. Save the datasheet.
10. Click > *Administration > Datasheet Engine > Publish Changes of Type Configuration*.
11. Click *Publish now*.

A confirmation dialog is shown.
12. Click *Publish now*.

Your changes are published.
13. Click > *Administration > Datasheet Engine > Types – New*.
14. In the row of your process type, click pencil icon.

The *Edit properties* dialog is opened.
15. Click > *Synchronization > General and Dimensions*.
16. For all needed general data and dimensions, select the according variable you created in step 7.
17. Go to *Changes* tab.

18. Click *Publish*.

A confirmation dialog is shown.

19. Click *Confirm*.

All changes are published.

20. Click *X* to close the dialog.

You have set up necessary datasheet layout mapped the variables with general data and dimensions.

### 3.1.3 Setup of Workflow

1. Click > *Administration > Datasheet Engine > Types – New*.

2. In the row of your process type, click pencil icon.

The *Edit properties* dialog is opened.

3. Click > *Workflow Modeler*.

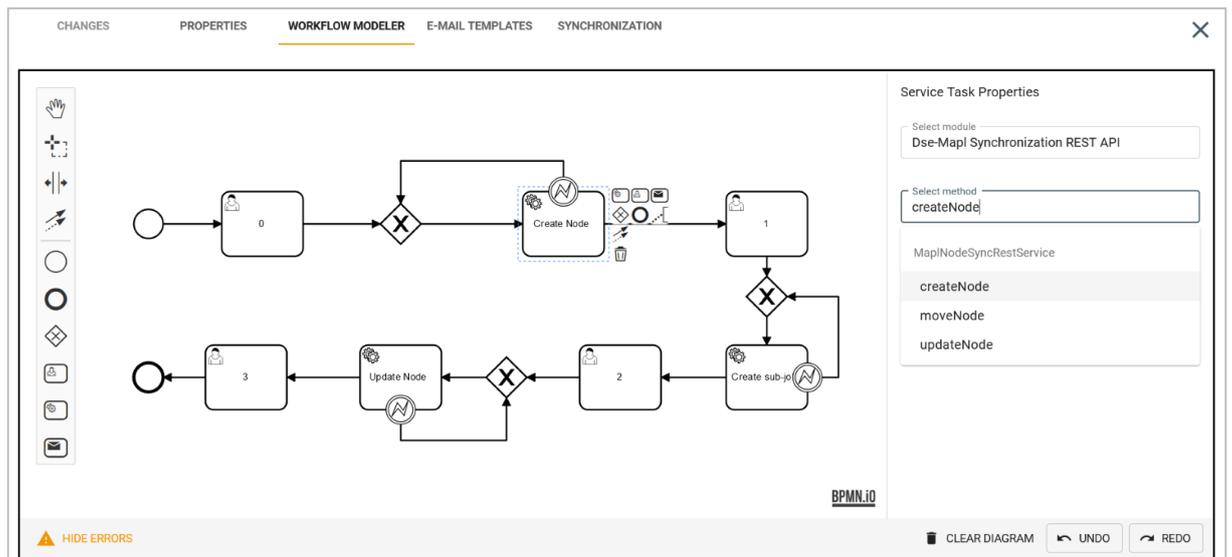
4. Configure workflow.

5. Create or select an existing service task.

6. In *Properties* panel select module *Dse-Mapl Synchronization REST API*.

7. Select method:

- *createNode* creates a new node.
- *updateNode* updates an existing node.
- *moveNode* moves an existing node under another parent.



8. Configure input parameters according to chapter 3.3.2.

9. Add error event handler according to chapter 3.3.3

10. Go to *Changes* tab.

11. Click *Publish*.

A confirmation dialog is shown.

12. Click *Confirm*.

All changes are published.

13. Click *X* to close the dialog.

You have set up the workflow.

### **3.1.4 General Setup of Type**

1. Click > *Administration > Datasheet Engine > Variables Access Rights*.

2. If necessary, search the process type.

3. In the row of your process type, click pencil icon.

The *Define Access and Rights* dialog is displayed.

4. Set up the needed READ and WRITE rights.

5. Define *Planner Levels* variable as required.

6. Click *Save*.

7. Click > *Administration > Datasheet Engine > Publish Changes of Type Configuration*.

8. Click *Publish now*.

A confirmation dialog is shown.

9. Click *Publish now*.

Your changes are published.

## 3.2 Configuration of Process Type

To create synchronization with a BPMN process, create a new process on > *Administration* > *Datasheet Engine* > *Types - New*. In the *Properties* tab activate *Use for synchronization* switch. This switch cannot be deactivated afterwards.

Once it is activated, specific variables are automatically added to the process type (see chapter 3.2.1) and *Synchronization* tab is displayed (see chapter 3.2.2).

### 3.2.1 Automatically Added Variables

Following variables are created automatically in the DSE layout once setting *Use for synchronization* is activated:

- **Planner Levels** (technical name: `mapl__parent__tree`): This variable is used to determine the path where the node is to be created. The variable must be moved to the visible part of the datasheet layout and it is highly recommended to set it as mandatory to ensure flawless synchronization.
- **Mapl node id**, `{"general":{"dseParam"..."}` and `{"updateNode":{"inputMappings"..."}` : These variables are needed for technical reasons. Do not rename or remove them! Do not move them to the visible part of the datasheet layout.

### 3.2.2 Synchronization Tab

The *Synchronization* tab contains the following sections:

- General and dimensions, see chapter 3.2.2.1
- Budgets and timelines, see chapter 3.2.2.2
- Planner levels, see chapter 3.2.2.3

### 3.2.2.1 General and dimensions

On this tab the mapping between the type’s variables and an element’s general information and dimensions is configured.

GENERAL AND DIMENSIONS

TIMELINES AND BUDGETS

PLANNER LEVELS

#### General

Variable	General data
<input type="text" value="No value"/>	name
<input type="text" value="No value"/>	info
<input type="text" value="No value"/>	nodeTypeId
<input type="text" value="No value"/>	currencyId
<input type="text" value="No value"/>	externalId

#### Dimensions

Variable	Dimension
<input type="text" value="No value"/>	Assortment

Selection of variables is constrained by their type as represented in the table below.

Variable type	General information / dimension type
<b>Node General information</b>	
Single inputline Multiline input area	name – Name
Single inputline Multiline input area	info - Description
Single select	nodeTypeId – Element type
Single select	currencyId - Currency
Single select	externalId – External ID
<b>Dimensions</b>	
Single select	List/tree of type Single Selection

Variable type	General information / dimension type
Multi select	List/tree of type Multi Selection List/tree of type Weighted Multi Selection
Single inputline Multiline input area	Freetext of type Free Value Freetext of type Continuous text Structured

### 3.2.2.2 Timelines and budgets

On this tab define whether timelines and budgets must be synchronized.

\*CHANGES
PROPERTIES
WORKFLOW MODELER
E-MAIL TEMPLATES
**SYNCHRONIZATION**

Configure the assignment between job and element data here.

GENERAL AND DIMENSIONS

**TIMELINES AND BUDGETS**

PLANNER LEVELS

Synchronize timelines

Synchronize budgets

### 3.2.2.2.1 Synchronize timelines

If you activate *Synchronize timelines*, variable of *Comfort Grid* type named *mapl\_\_timelines* and variable of *Multiline input area* type named *mapl\_\_timelines\_errors* are automatically created for this process type.

#### mapl\_\_timelines

The comfort grid is preconfigured as it shows the following screenshot.

Type\*            Comfort Grid

Unique Name    mapl\_\_timelines

Technical Name\* mapl\_\_timelines

Display name\*  

Help text  

Variables\*:

Unique Name	Variable Type	Custom Object Source	Edit
name	Single Inputline		
startDate	Date Picker		
endDate	Date Picker		
category	Single Select	PM_MAPL_CATEGORY	
id	Number Inputline		

You can edit variable's display name and column names on > *Administration* > *Datasheet Engine* > *Datasheet Layout*.

#### Attention

It is mandatory to use custom structure *PM\_MAPL\_CATEGORY* for selection of planning element's categories. Please make sure that custom structure with exactly this name does exist in the system, see chapter 3.1.

#### mapl\_\_timelines\_errors

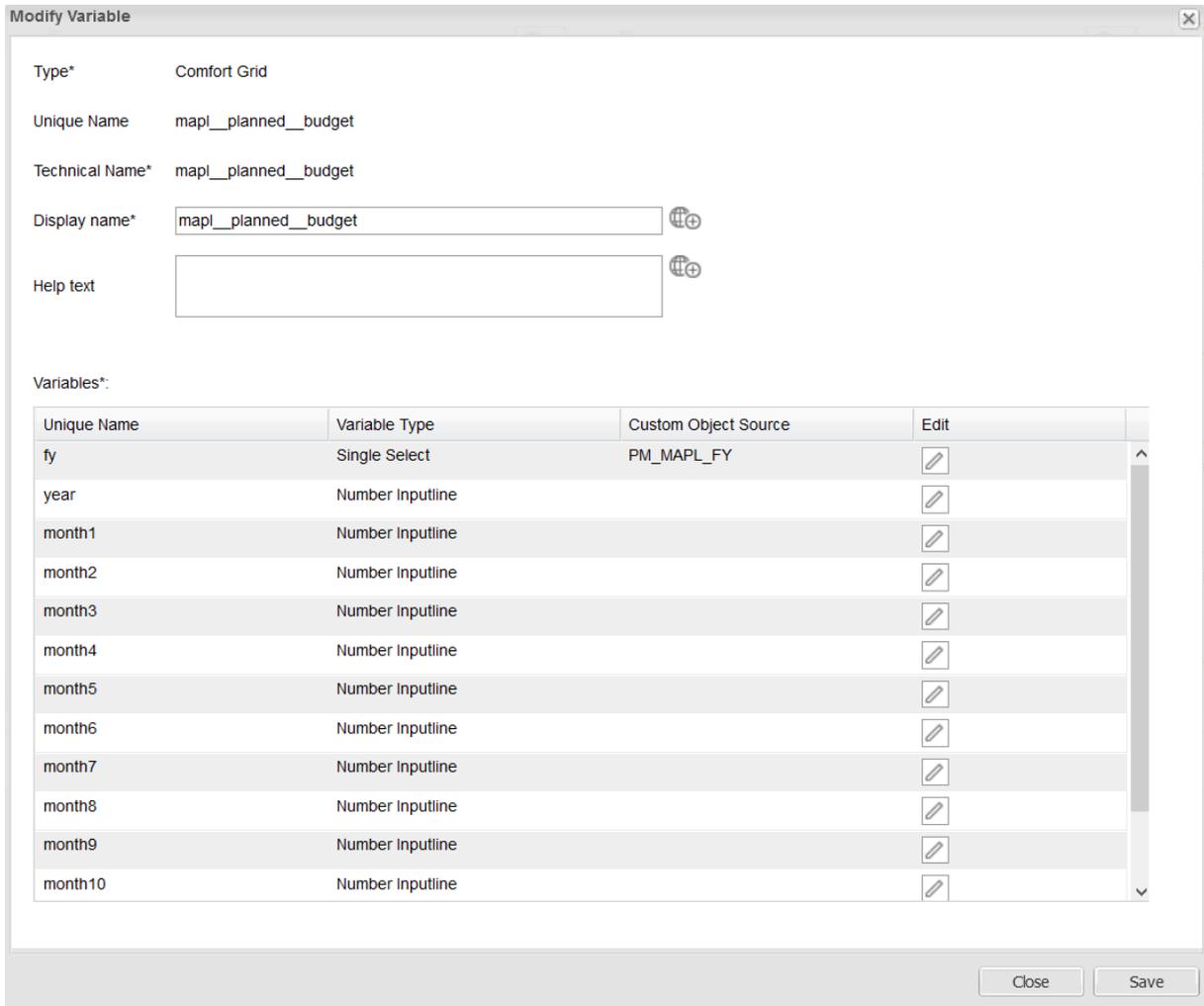
In case there was an error in the synchronization of timelines, error text returned by the service is written in this field. If you want this error text to be shown in job details, you can add this field to the visible part of the datasheet layout. You can also change the display name of this variable.

### 3.2.2.2 Synchronize budgets

If you activate *Synchronize budgets*, a variable of *Comfort Grid* type named *mapl\_\_planned\_\_budget* and a variable of *Multiline input area* type named *mapl\_\_planned\_\_budget\_errors* are automatically created for this process type.

#### mapl\_\_planned\_\_budget

The comfort grid is preconfigured as it shows the following screenshot.



You can edit variable's display name and column names on > *Administration* > *Datasheet Engine* > *Datasheet Layout*.

#### Attention

It is mandatory to use custom structure *PM\_MAPL\_FY* for selection of planning element's fiscal years. Please make sure that custom structure with exactly this name does exist in the system, see chapter 3.1.

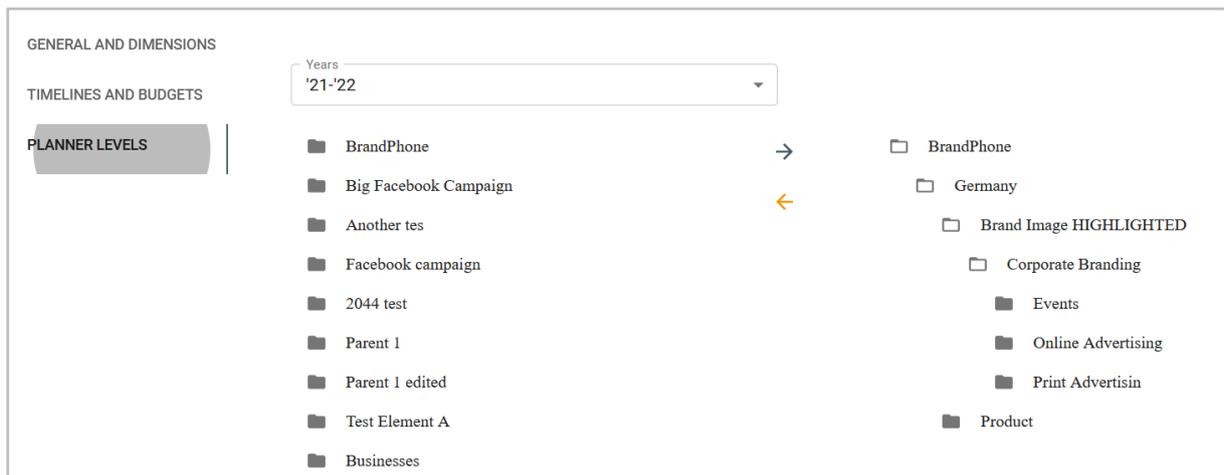
## mapl\_\_planned\_\_budget\_errors

In case there an error occurs in the synchronization of planned budgets, the returned error text is written by the service in this field.

If you want this error text to be shown on the job's datasheet, you can add the variable to the visible part of the datasheet layout. You can also change its display name.

### 3.2.2.3 Planner levels

On this tab, you select which planner levels can be used as parent nodes for the nodes to be created via synchronization.



1. Select fiscal year from the dropdown menu.  
The complete element tree of the corresponding fiscal year is displayed on the left side.
2. Select planner level you want to use as target node.
3. Click arrow to move it to the right side.

The selected structure is displayed in job details in *Planner Levels* variable, see chapter 3.2.1 for details.

#### Note

Grey folder icon means that this element has children and can be expanded. White folder icons means that either the folder is expanded or has no children.

## 3.3 Configuration of Service Tasks for Synchronization with BPMN Workflows

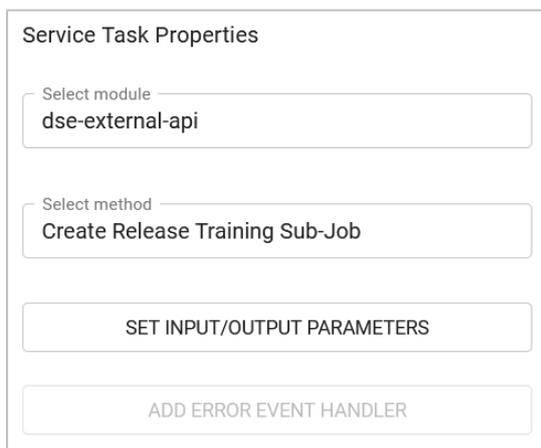
### 3.3.1 Select Method

Synchronization in BPMN workflows is performed with help of Service Tasks. They are configured as follows:

1. Create or select an existing service task.
2. In *Properties* panel select module *Dse-Mapl Synchronization REST API*.
3. Select method:
  - *createNode* creates a new node.
  - *updateNode* updates an existing node.
  - *moveNode* moves an existing node under another parent.

### 3.3.2 Configure Input Parameters

Mapping between parent's variables and sub-job's variables is done via input parameters: select service task and click on *Set input/output parameters* in service task's properties panel on the right side:



The screenshot shows a 'Service Task Properties' panel with the following elements:

- A 'Select module' dropdown menu with 'dse-external-api' selected.
- A 'Select method' dropdown menu with 'Create Release Training Sub-Job' selected.
- A button labeled 'SET INPUT/OUTPUT PARAMETERS'.
- A button labeled 'ADD ERROR EVENT HANDLER'.

Following you find detailed description of each parameter.

Property	Type	Value
body		
body.parent	DseObjectIdFormattedVariableType	Job ID
body.values		
body.values.job__name	SingleInputLineVariableType	Job Name
body.values.creator__		
body.values.creator__.name	Nothing selected	Select a type
body.values.creator__.id	Variable Property	UserVariableType Creator id
body.values.creator__.login	Variable Property	UserVariableType Creator login

Input parameters cannot be configured for these methods. They are set automatically depending on the configuration in the *Synchronization* tab.

### 3.3.2.1 *body.parent*

If job created via service task must be a sub-job, select:

- Type: DseObjectFormattedVariableType
- Value: Job ID

If *body.parent* remains empty, job created via this service task is a normal job, not a sub-job.

### 3.3.2.2 *body.values*

#### 3.3.2.2.1 *body.values.job\_\_name*

In this field name of the job or sub-job is configured.

- constant: You can enter any value directly here and it is used as a sub-job name afterwards.
- singleSelect: You can define any variable of *single select* type as a source for the sub-job name.
- SingleInputLineVariableType: You can define any variable of *single input line* type as a source for the sub-job name.
- MultiLineInputAreaVariableType: You can define any variable of *multiline input area* type as a source for the sub-job name.
- VariableProperty: You can define a property of some variable as a source for the sub-job name.

### 3.3.2.2.2 body.values.creator

In this field creator of the job or sub-job is configured. To configure the actual creator of a job as a creator, fill in fields as follows:

body.values.creator__		
body.values.creator__.name	Nothing selected	Select a type
body.values.creator__.id	Variable Property	UserVariableType Creator id
body.values.creator__.login	Variable Property	UserVariableType Creator login

#### Note

If *body.values.creator* remains empty, then the creator of the job is the system user.

### 3.3.2.2.3 body.values.mapl\_\_parent\_\_tree

The field must be filled in as in screenshot below in case sub-job is created via service task. This ensures that the sub-job's node is created under the parent job's node in Marketing Planner.

body.values.mapl__parent__tree			
body.values.mapl__parent__tree.endDate	Variable Property	MaplParentNodeVariableType	Planner Levels endDate
body.values.mapl__parent__tree.parentNodeid	Variable Property	RealNumberVariableType	Mapl node id intValue
body.values.mapl__parent__tree.startDate	Variable Property	MaplParentNodeVariableType	Planner Levels startDate

The field can be left empty in case the service task triggers creation of a usual job, not a sub-job.

### 3.3.2.2.4 Other values

All other fields are used for mapping between parent job variables and sub-job variables. In case mapping was done, corresponding values are copied from parent job to sub-job.

Example:

body.values.currency	singleSelect	Currency
body.values.audience	Nothing selected	Select a type

- There is mapping for *body.values.currency*: Sub-job's variable *Currency* is filled in with the value of parent job's variable *Currency*.
- There is no mapping for *body.values.audience*: Sub-job's variable *Audience* remains empty, even if this variable is filled in in the parent job.

### 3.3.3 Add Error Event Handler

It is recommended to add an error event handler for all service tasks. Error event handler can lead to any other element in the diagram. This element is executed if an error is returned after execution of service task. In the example in chapter 3.3.1 above *Create node* service task is executed until it has been processed without errors.

**Attention**

If error event handler does not exist and an error occurs while executing service task, then the job is finished by Camunda.