HOPEX for SAP Solution Manager 7.2

User Guide

HOPEX V5

MEGA
SEE THE BIGGER PICTURE

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INTRODUCTION TO HOPEX FOR SAP SOLUTION MANAGER 7.2

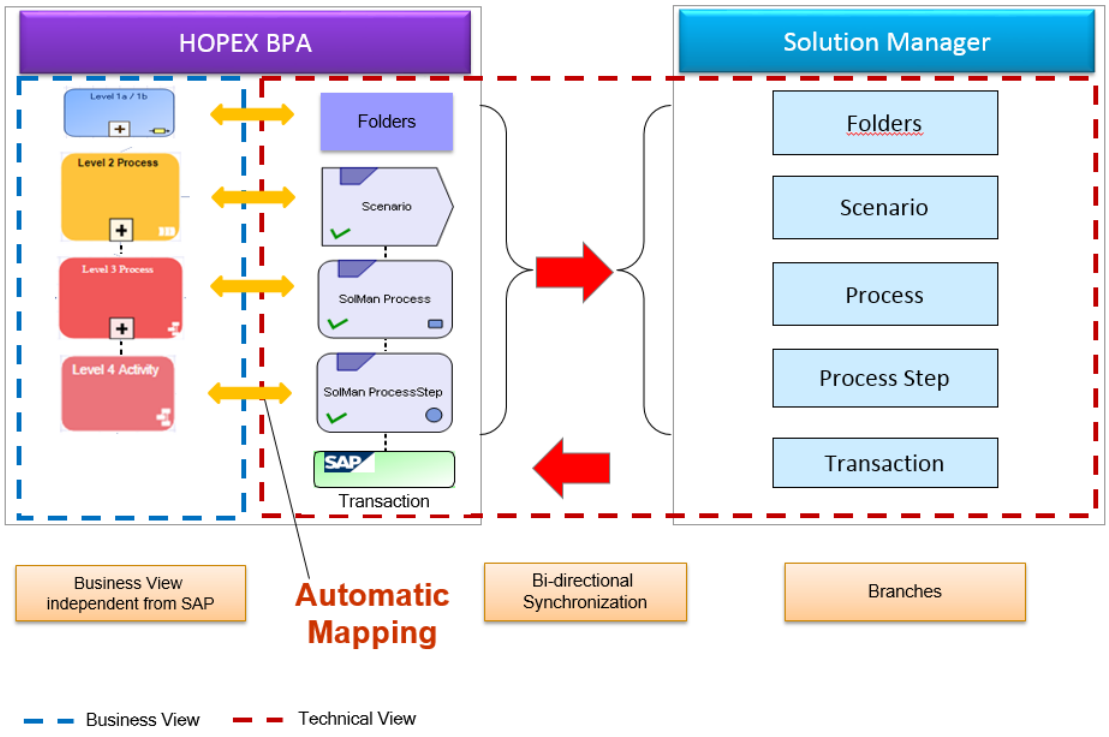
✓ "Product Overview", page 2
✓ "Before Getting Started", page 4
✓ "User Desktop Overview", page 7

PRODUCT OVERVIEW

HOPEX for SAP Solution Manager 7.2 is a solution that enables information sharing between HOPEX Business Process Analysis and SAP Solution Manager 7.2. It implements a use case in which each side owns its own data and pushes it to the other side, thus keeping information aligned and up-to-date:

- HOPEX is the owner of all business process hierarchy, description, and diagrams.
- SAP Solution Manager is the only place where the technical description of these objects, mainly transaction association, is performed.
- In SAP Solution Manager , users can see the process hierarchy and images of process diagrams. In HOPEX users see which SAP transactions are used to execute processes and operations in SAP.

The full use case is described by the following chart:



1. In HOPEX, users describe the entire business process hierarchy. They can use all the artifacts available in HOPEX BPA: Business Processes, Value Streams (former Functional Processes), Organizational Processes and Activities. All these objects (except activities) may be associated with diagrams describing them using BPMN notation.

2. Next, mapping is performed to generate an image of the SolMan process hierarchy in HOPEX. This automatic mapping is a key point in implementation and must be adapted to your process level organization. HOPEX enables a flexible description of process hierarchy, with four different object types and each level can be nested (business process within business process, or org-process within org-process, for example). On the other side, SolMan has a rigid structure, with three object types (process step, process, scenario) that can be grouped into folders. We describe below how this mapping can be configured to fit your process methodology. You should note that for correct mapping behavior, process organization in HOPEX must be standardized, with a number of levels and use of object types that are consistent for all business areas described.
3. This structure then can be pushed in SolMan, in a dedicated HOPEX area, so that SAP users can see this hierarchy. All diagrams describing the processes are sent into SolMan and can be viewed as attachments (images).
4. In SolMan, SAP users can then map technical objects, mainly transactions to this hierarchy. This describes which SAP standard or custom transactions will cover every step, process or scenario.
5. This transaction allocation can then be retrieved in HOPEX, and users can see, on each business object, the SAP transactions that will be used to execute these processes.
6. Additional reports may help HOPEX users to see:
   - Transactions used in a business process branch.
   - Transaction list with associated business objects.
   - SolMan hierarchy mapped to business objects.

BEFORE GETTING STARTED

Versions and Prerequisites

In HOPEX

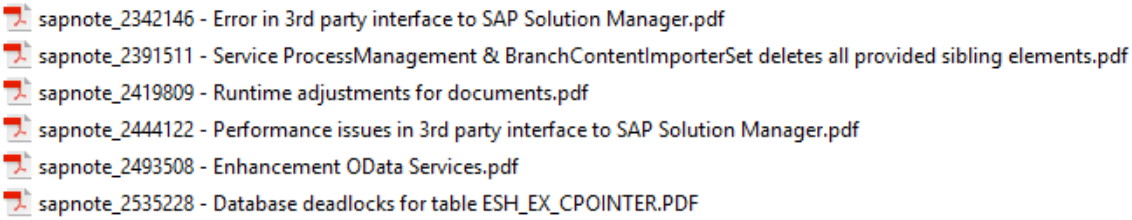
The minimum version of HOPEX required to run HOPEX for SAP Solution Manager 7.2 is HOPEX V1R2 Update 3. A dedicated package must be imported to make this product available.

A dedicated license key SM72 must be provided by MEGA Sales Administration to make this product available in the User Interface.

In SAP Solution Manager

Solution Manager must have at least Version 7.2 with Service Pack 5 (minimum level).

On top of this, the following SAP Notes must be applied, to avoid API or SolMan issues that would impact this connector:



Some preparation and settings are needed before product use.

Configuration Prerequisites

In Solution Manager

In Solution Manager, you can have several Solutions. A Solution represents a global SAP System. With HOPEX synchronization, you can choose the solution for your business objects. Several solutions can be used, but it is recommended you use single solution as the target for all processes.

One key concept in SolMan 7.2 is a branch, which is a component within a solution. In SolMan 7.1, a project was a root object where all information relating to processes and technical information was stored. There is now a new branch concept which will be used by HOPEX for SAP Solution Manager 7.2.

Branch management in Solution Manager is highly dependent on the SAP project scope, rollout and configuration. SAP consulting or third-party integrators should define the best branch strategy for your organization.

Defined branches each contain a Business Processes folder. In this folder, you should create a "HOPEX processes" folder where all objects coming from HOPEX will be stored. Your SolMan administrator should define this folder as read-only for all SAP users, leaving them access to content only to enable transaction mapping. This will prevent creation or modification of process objects by SAP users, which are owned by HOPEX. Of course, the SolMan administrator can have write authorizations to perform manual adjustments for day-to-day operations.

Please refer to your SolMan administrator to define these rights.

In HOPEX

Mapping a HOPEX process structure with a SolMan structure requires analysis to define which HOPEX concept will be mapped with which SolMan concept.

Once performed, this analysis is used to implement this mapping and configure HOPEX for SAP Solution Manager 7.2 tooling.

Configuring SolMan Mapping

Two HOPEX artifacts are used when generating a SolMan hierarchy:

- An extraction operator, which collects all objects related to a root object structure. For example, when mapping a business process, this operator can collect all value streams attached to it, followed by the organizational processes of these value streams and the activities of these organizational processes. You must define your own operator to meet your business processes modeling rules. See "Technical Notes", page 18 for more details.
- A mapping macro, which is called for each object collected by the operator. This macro calculates which SolMan object type will be generated for each HOPEX object. See "Automatic Mapping", page 19 for more details about this mapping macro. A standard macro source code interpreting a one-to-one correspondence between meta-classes (e.g.: business process <-> SolMan Scenario, etc.) is provided as a sample with the product.

Importing a Solution Manager structure

Before performing a mapping or synchronization procedure, a SolMan structure must be imported. A menu option imports basic information from SolMan:

- Branch list
- Document types
- Org units

Another option is used to edit branch information. For each branch, users can select which default document type will be associated with diagram images when these images are pushed into SolMan.

Roles and profiles

The default user profile that has access to SolMan features is the "Process Functional Administrator". As rights and profiles are highly dependent on your organization, no other standard profile has access to HOPEX for SAP Solution Manager 7.2 functions.

However, using standard HOPEX desktop customization, it is quite simple to provide menu options to other roles or profiles in your organization. For example, business process designers can prepare SolMan synchronization, by generating the mapping objects in HOPEX.

However, as interaction with SolMan requires a SAP account, it is recommended that a single user only should have rights to correctly synchronize HOPEX with SolMan.

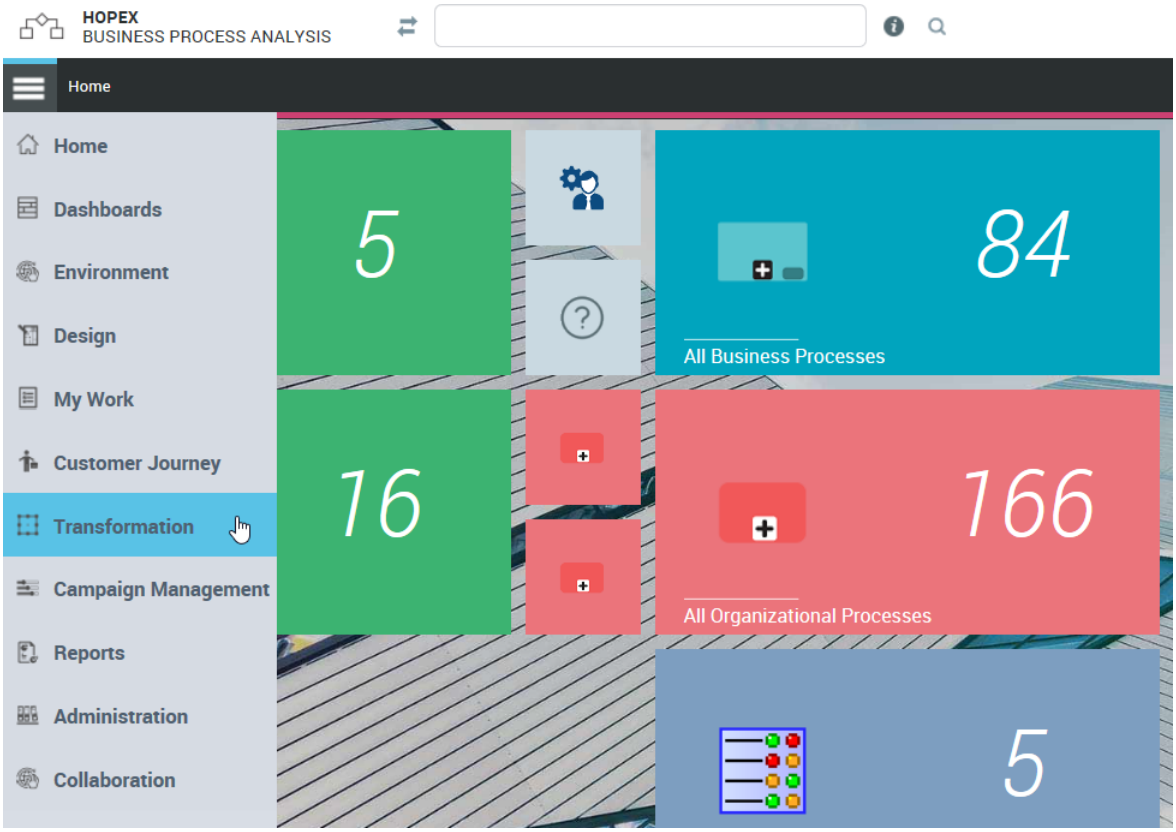
rights to correctly synchronize HOPEX with SolMan.

USER DESKTOP OVERVIEW

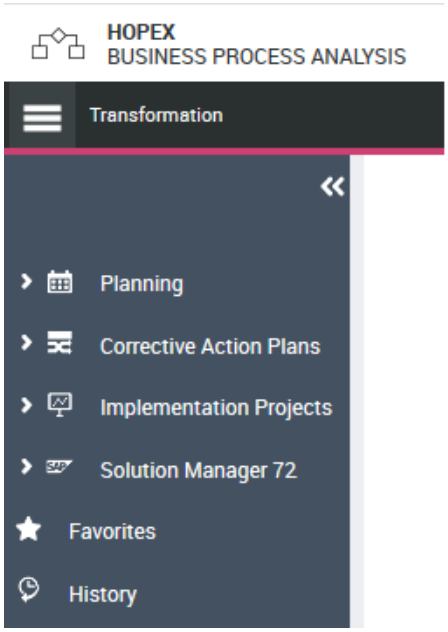
HOPEX for SAP Solution Manager 7.2 functions are available in the BPA desktop of the "Process Functional Administrator" profile.

To access these functions:

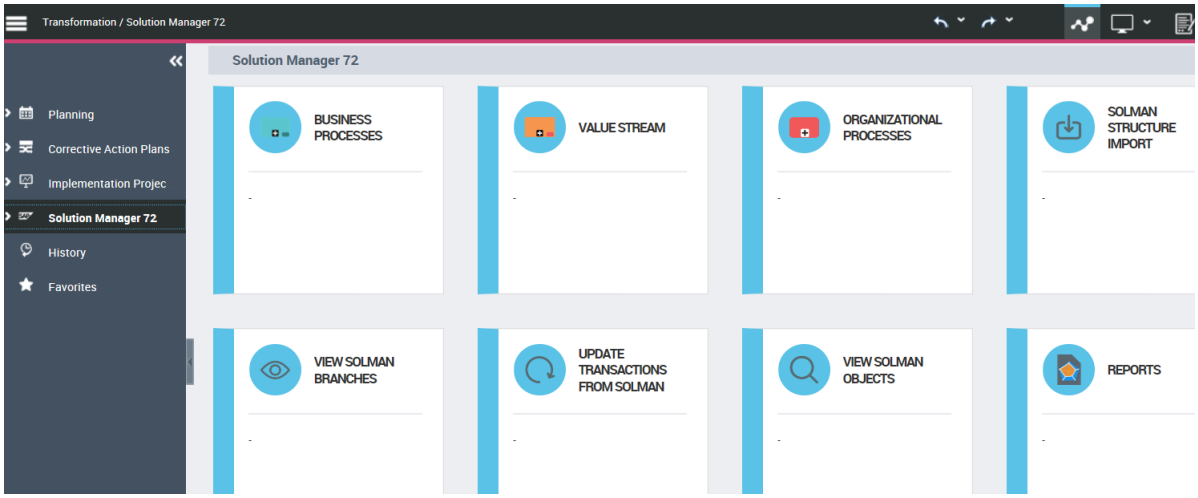
1. Click the navigation menu, then **Transformation**.



2. Click **Solution Manager 7.2**.



The following tiles are available:



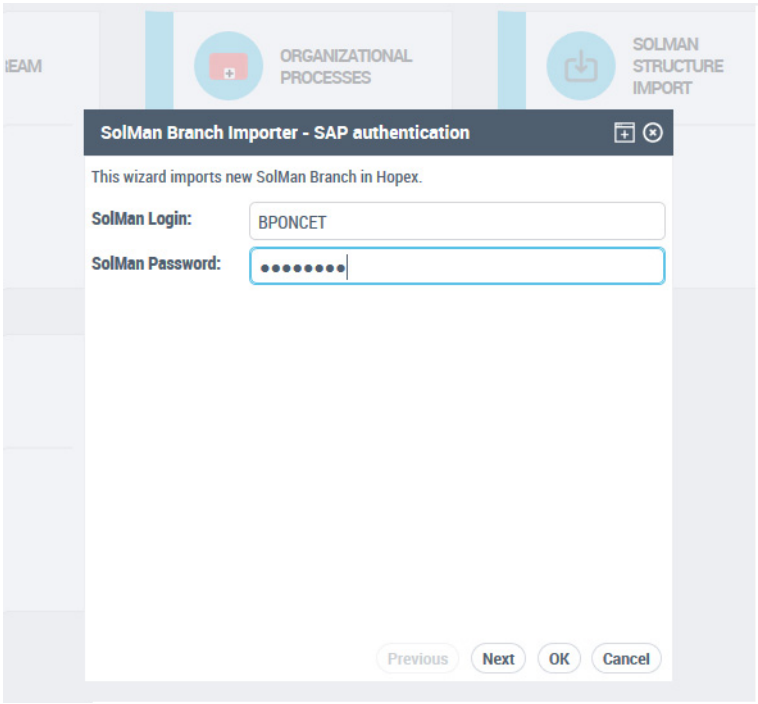
Below is a short description of each tile.

Business Process / Value Stream / Functional Processes

These tiles open a list of business objects of each type. In these lists, some options (detailed in paragraphs 4.1 and 5.1) are used to create SolMan objects and export them to Solution Manager. The user can manage creation of Solution Manager concepts using these lists.

SolMan Structure Import

This command must be launched at the very beginning of use of this product. It imports Solution Manager branch lists. You must enter your SAP SolMan credentials:



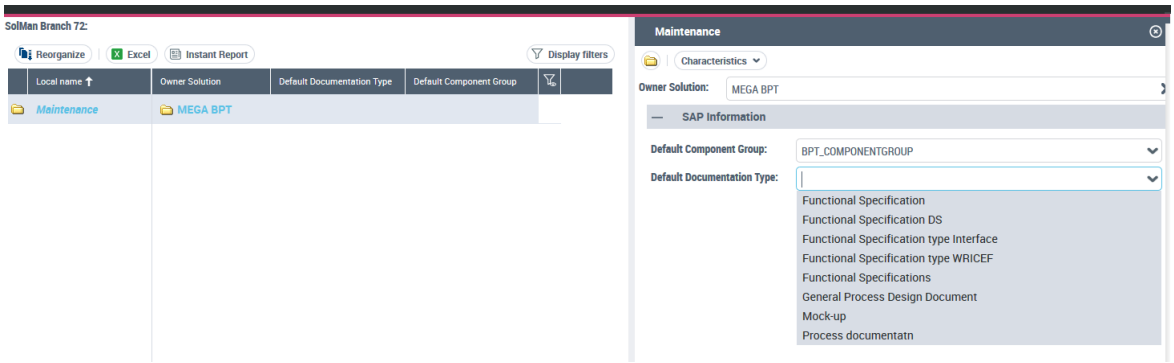
Then choose the Solution from which you want to extract branches.

This wizard imports branches as well as reference data: list of Document types, component groups and sites. It also initializes the folder structure of business processes to enable future storage of HOPEX objects.

View SolMan Branches

Once the branches are imported, you can view the list of SolMan Branches and configure a number of parameters for future synchronization:

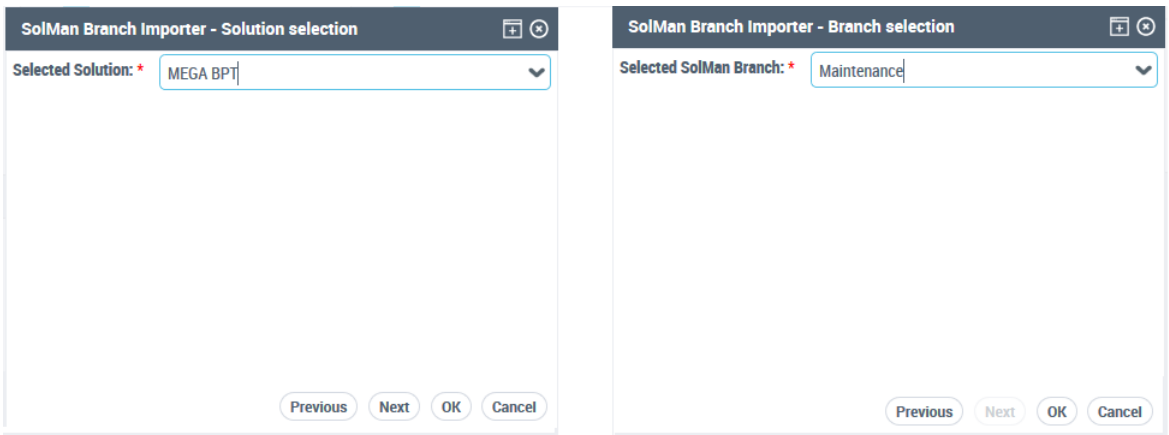
- Default component group
- Default document type



These values are used when creating objects (component group) or diagram images as attachments (document type) in SolMan.

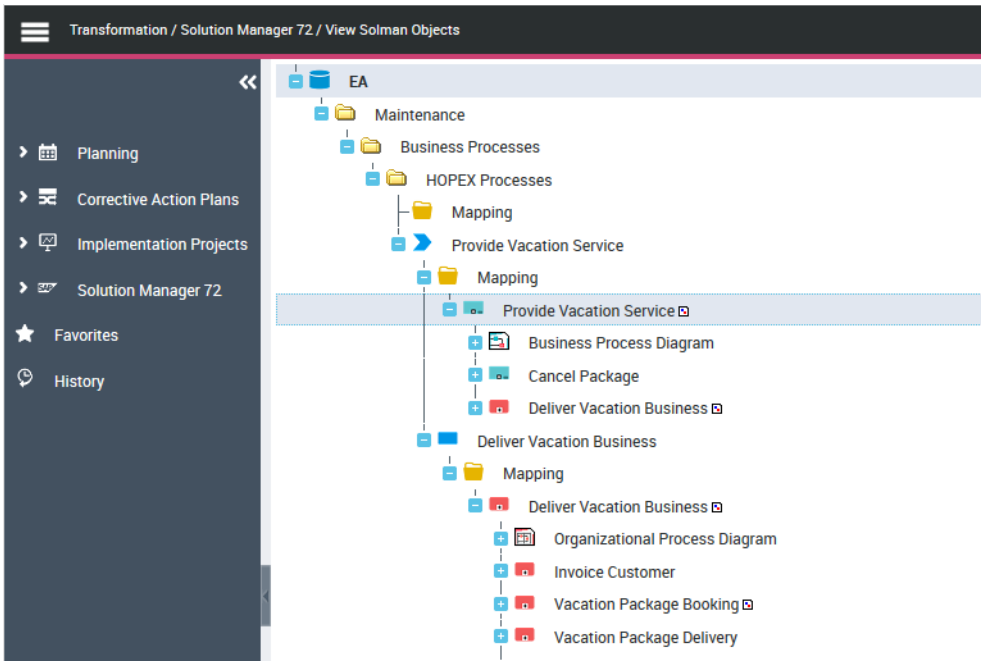
Update Transactions from SolMan

This function retrieves all transaction mapping from a branch of a solution. After SAP authentication (required for each interaction with SolMan), the user chooses a Solution and a branch within the solution. All transactions associated with the entire process hierarchy are retrieved and made visible in HOPEX.



Viewing SolMan Objects

This command opens the tree showing the hierarchy of SolMan objects in HOPEX as well as the business objects associated with this hierarchy. This will be visible after generation of these objects.



Reports

This command gives access to specific reports in the solution. At this stage, a single report showing all transactions and their associated objects is delivered. In this list, you can use all instant report capabilities to analyze SAP transactions within your business process hierarchy.

SOLMAN SYNCHRONIZATION

✓ "Preparing SolMan Synchronization", page 2
✓ "Launching SolMan Synchronization", page 10
✓ "SAP Information In HOPEX", page 14
✓ "Reports", page 17
✓ "Technical Notes", page 18

PREPARING SOLMAN SYNCHRONIZATION

Before synchronizing a process hierarchy with SolMan, you must first generate an image of the SolMan hierarchy. This is done through a "mapping" tool, that generates an image of the objects in the SolMan Hierarchy.

Mapping is performed via a macro that implements the logic of alignment of business object hierarchy with the SolMan hierarchy. As these two hierarchies have very different characteristics, an analysis is needed to define how this process will be done.

In HOPEX, a business process hierarchy can involve four object types: Business processes, value streams (former functional processes), organizational processes and operations.

All three types of processes can also be nested (org processes within org processes for example). This provides a high level of flexibility in describing processes.

In SolMan, there are:

- Only three types of objects: scenarios, processes, and process steps
- Folders that can group these objects
- A strict structure: only processes can be linked to scenarios, only process steps can exist within a process.

The logic of performing this mapping is as follows:

- Mapping starts with a business object (business process, value stream, organizational process)
- A HOPEX operator navigates from this object to collect the sub-hierarchy of objects
- For each object in this hierarchy, the mapping macro is called to determine which SolMan object type is needed, create it and link it properly in the SolMan hierarchy.

As this is an automatic process, process structures (objects used, number of process levels, object type in each level) should be consistent for all processes in the repository.

To run this mapping in a defined customer context, you must:

- If necessary, adjust the extraction operator (one is provided as a standard example)
- Write a macro, possibly based on the example provided with the product, to align with the local configuration of a business process hierarchy.

Paragraph 8.1 gives more technical details about how to implement this operator and this macro.

Mapping Business Objects

When the technical configuration described above is complete, mapping work can start. Mapping can be generated at any level of the business hierarchy: business

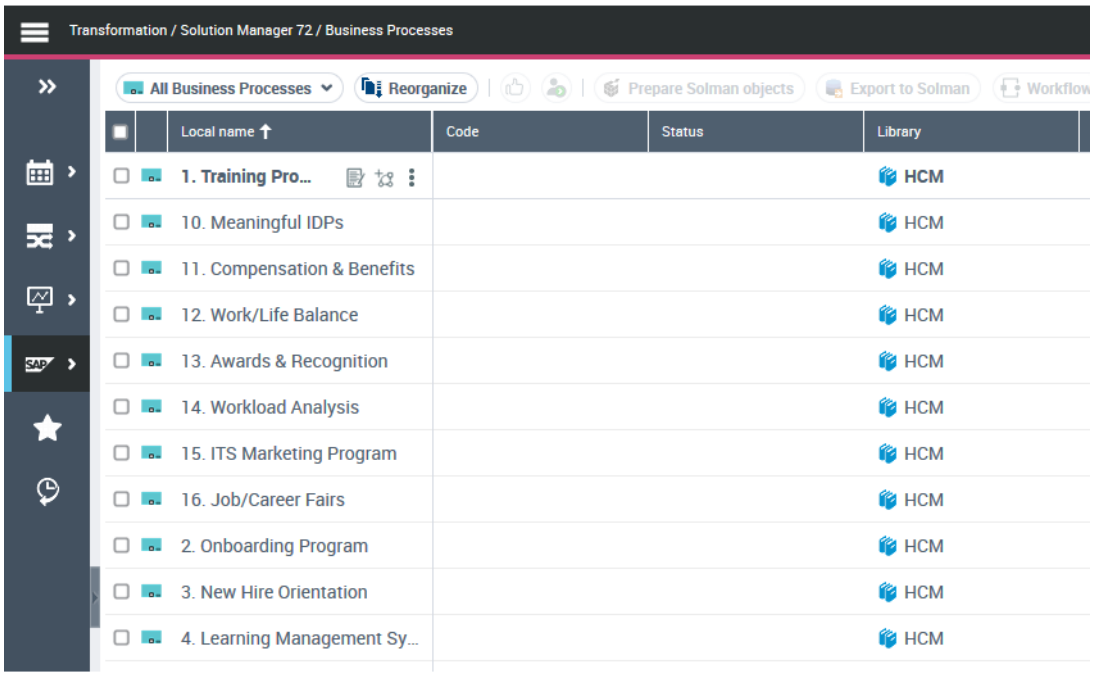
process, value stream or org process. This allows for incremental generation, or updates when local changes have been made.

You should start mapping and generation at the highest level to initialize the hierarchies properly, and then map the objects that have changed.

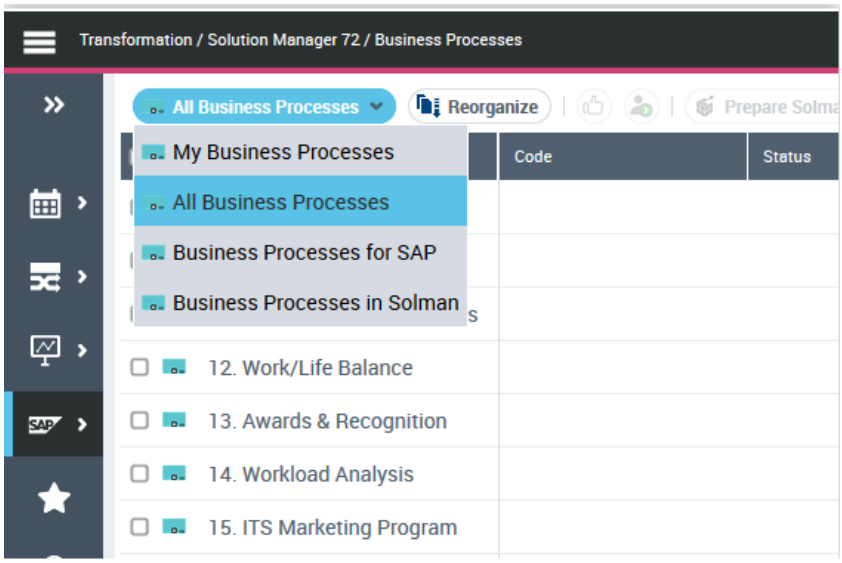
To perform mapping, you must open a list of objects (business processes, value streams, or organizational processes). Here is an example of business processes.

List of Processes

Select Business Processes in the navigation menu to obtain a list of business processes as follows:

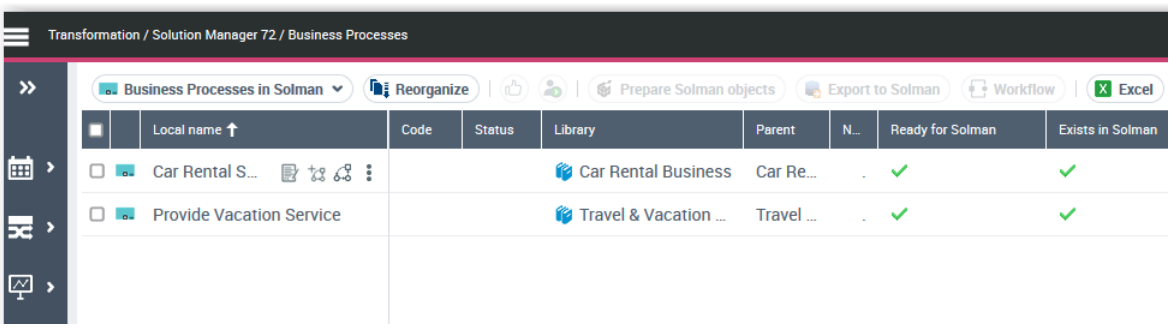


You can filter the processes you want to display as shown below:



- **My Business Processes** lists all processes for which the user is the Process Owner or Designer.
- **All Business Processes** lists all processes in the repository.
- **Business Processes for SAP** lists all the business processes that are already mapped in HOPEX with SolMan objects.
- **Business Processes in SolMan** lists all the business processes for which SolMan objects have been created in SolMan. This list is a subset (or same set) of the objects of the previous list.

In the last two lists, two columns with check boxes display which objects are mapped and which objects have already been transferred into SolMan:

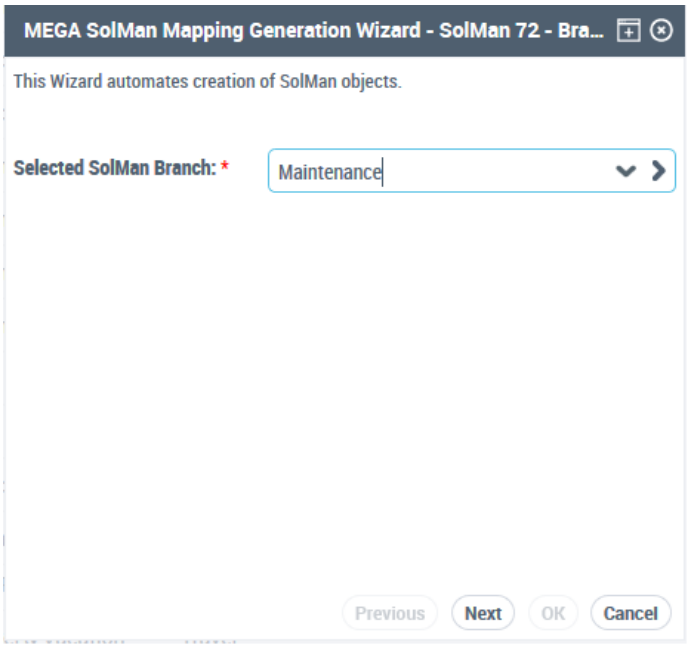


Launching mapping

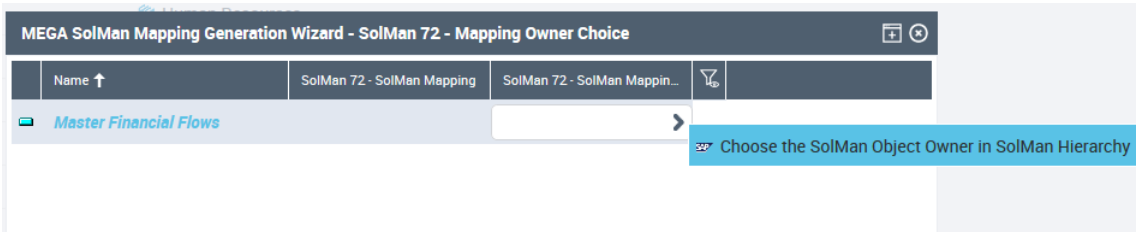
To launch object mapping:

1. Select one or more objects in the list of objects.
2. Click **Prepare SolMan objects**.

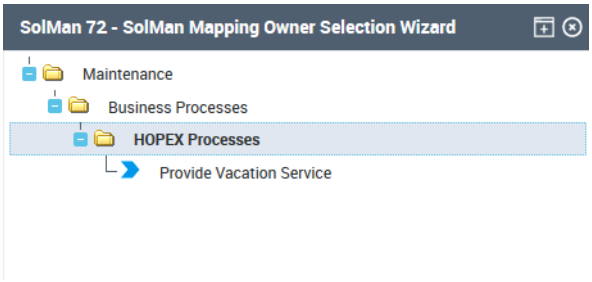
3. Select a branch as a mapping destination:



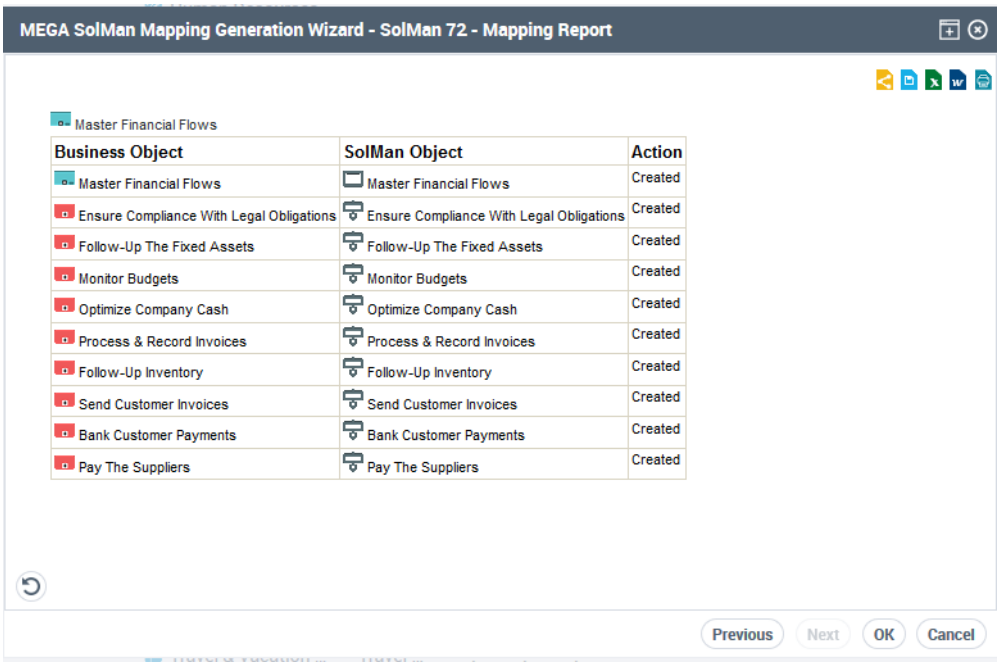
4. For each root object, specify where the object will be attached in the SolMan hierarchy:



You can browse the SolMan Hierarchy to select a level of attachment (here the root HOPEX Processes folder):



5. Then launch the mapping process. The window displays the list of generated objects at the end:

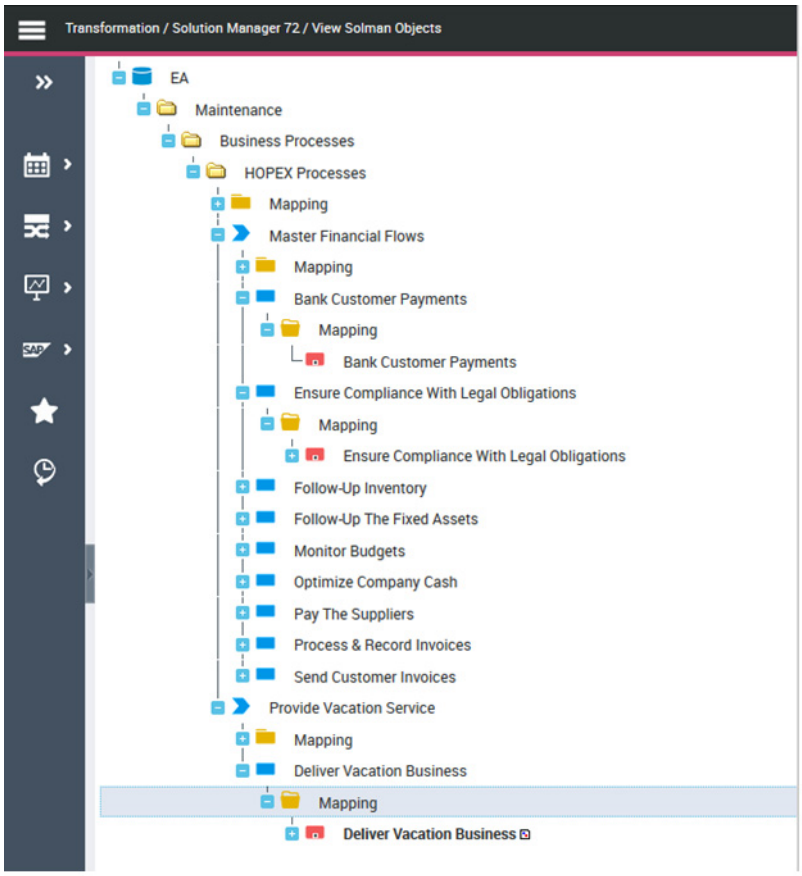


Here you can see which type of SolMan object has been associated with each HOPEX object, and if it already exists, whether it has been created or updated.

Reviewing SolMan Mapping

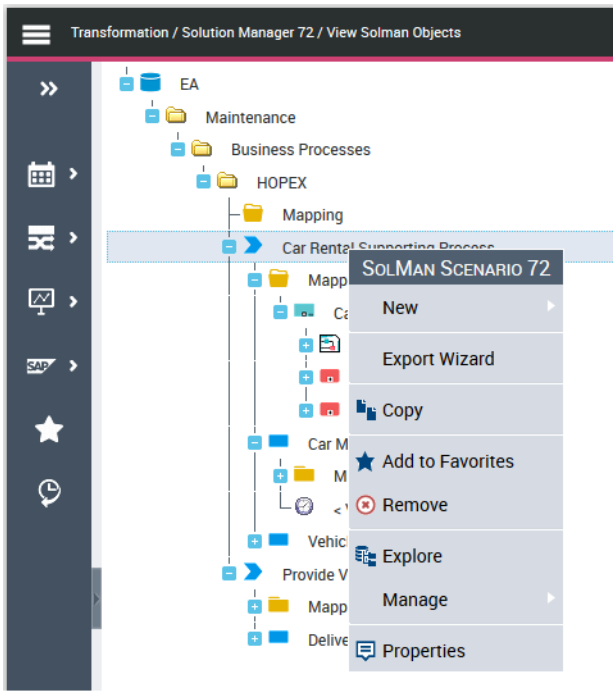
Before synchronizing the hierarchy with SolMan you should review the mapping to check that everything is in order. You can do this by selecting View SolMan Objects

in the navigation menu. You have access to a tree of all SolMan objects within each branch where you can see which business object is mapped on each SolMan object:



Note that this tree is intended to be read-only. You should not change this hierarchy here; hierarchy should only be changed by executing the mapping process. A key user should be allocated rights to change this hierarchy through standard navigation tools.

Standard configuration provides menu options on these objects. Commands (Remove, or changes through Explorer) should only be run by experienced users with an in-depth understanding of the behavior of this component:



Defining the Documentation Type Associated with Exported HOPEX Object

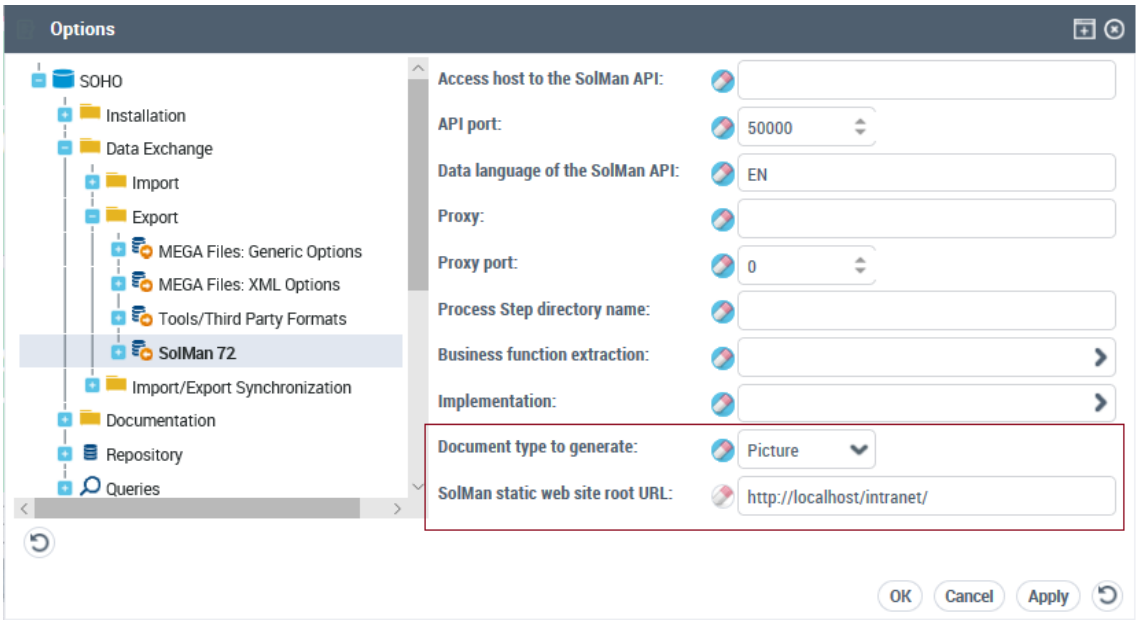
When exporting HOPEX business object into SolMan, an option enables you to generate an image (.png) or a link to a static Web site that describes diagrams related to the business objects (see "Exporting a Business Hierarchy into SolMan", page 10).

After the export, the SolMan objects are created, and for all HOPEX objects that have diagrams, these diagrams will be attached to SolMan objects as images or URL. When you export an object already existing in SolMan, only the diagrams that have changed since the last synchronization are transferred to SolMan.

To specify which type of document (image or url) must be generated :

1. Click **Main Menu** > **Settings** > **Options**.
2. The **Options** window appears.
3. In the left tree, select **Data Exchange** > **Export** > **SolMan 7.2**.
4. In the right pane, select the **Document type to generate** : Picture or URL.

5. For the URL, specify the root URL.



LAUNCHING SOLMAN SYNCHRONIZATION

Prerequisite

See:

- "Before Getting Started", page 4
- "Preparing SolMan Synchronization", page 2.

Exporting a Business Hierarchy into SolMan

Once the mapping process preparation phase is completed, you can transfer the objects to Solution Manager. Thanks to the mapping done previously, the export tool will find the SAP solution and branches that correspond to the objects you want to export.

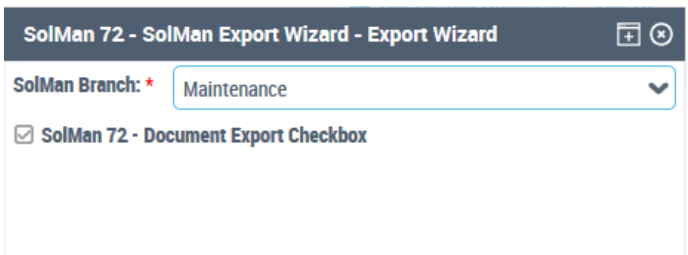
To export HOPEX objects into SolMan, you should use the "(*Objects*) for SAP" list, which contains only the objects already mapped. See for example "List of Processes", page 3.

To export HOPEX objects into SoMan:

1. Click the navigation menu then **Transformation**.
2. In the **Transformation** navigation pane, click **Solution Manager 7.2**.
3. Select the object type you want to export.

   ☛ *For example Business Processes.*
4. Select the "(*Objects*) for SAP" list.

   ☛ *In the case of business processes, select the "Business Processes for SAP" list.*
5. In the list select the objects to export.
6. Click the **Export to SolMan** button.
7. Use the check box to export also diagram images (for more details see "Defining the Documentation Type Associated with Exported HOPEX Object", page 8).

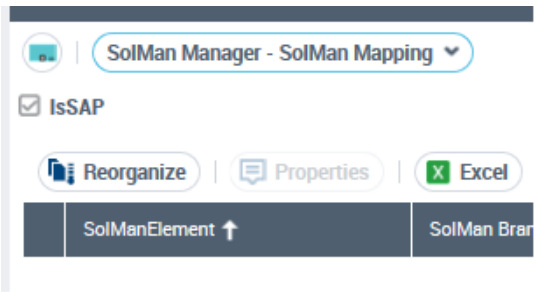


8. Click **OK**.
   The selected objects and their sub-hierarchies are pushed to SolMan.

Exempting objects from SolMan

You may find that some of your business objects are not relevant in SAP, such as operations that are performed by other systems or manual processes.

By default, all objects retrieved by the extraction operator are mapped as candidates to be sent to SAP. You can, however, manually select some objects and declare them to be kept in HOPEX and not sent to SolMan. You can do this in each property page of the object by deselecting the **IsSAP** check box in the **SolMan Mapping** page:

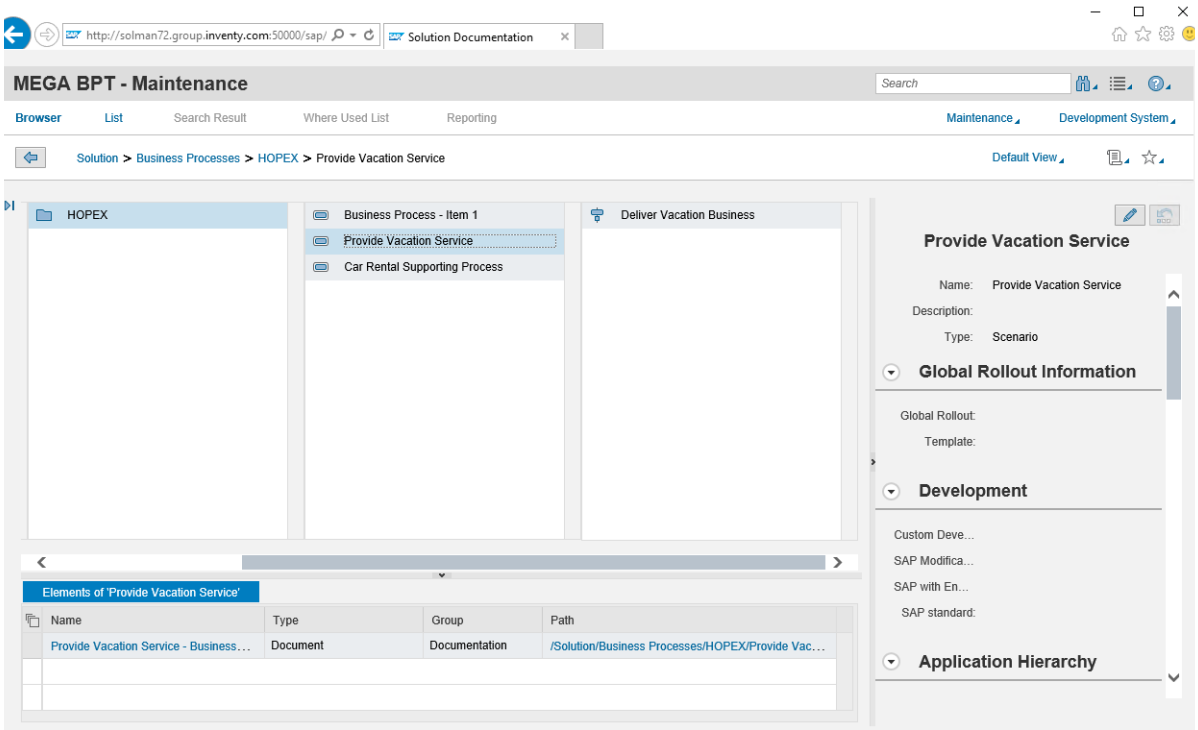


This must be performed before preparing objects for SAP, which will disable object generation and mapping.

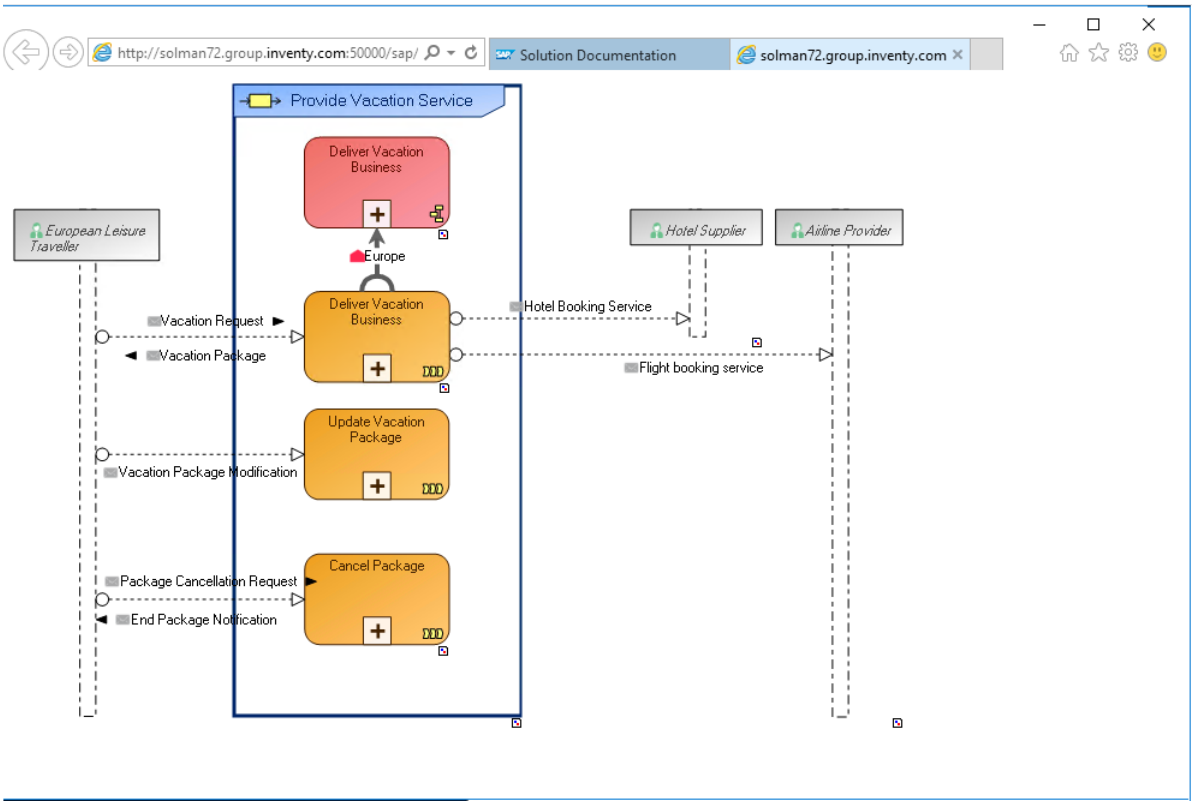
☛ *Please note that in a future upgrade, deselecting those objects will be available in a dedicated page in the mapping wizard. You will then be able to select objects at generation time.*

View in Solution manager

In Solution Manager, you can view the transferred objects in the Business Process Hierarchy:



In the attachments (bottom part of the screen below), you can see a document related to the Business process which is the image of the diagram. Click on it in SolMan to open a browser tab with this diagram:



SolMan users can then attach transactions to the business objects.

Importing SolMan transactions

This option imports all transactions mapped to the business objects of a branch from SolMan.

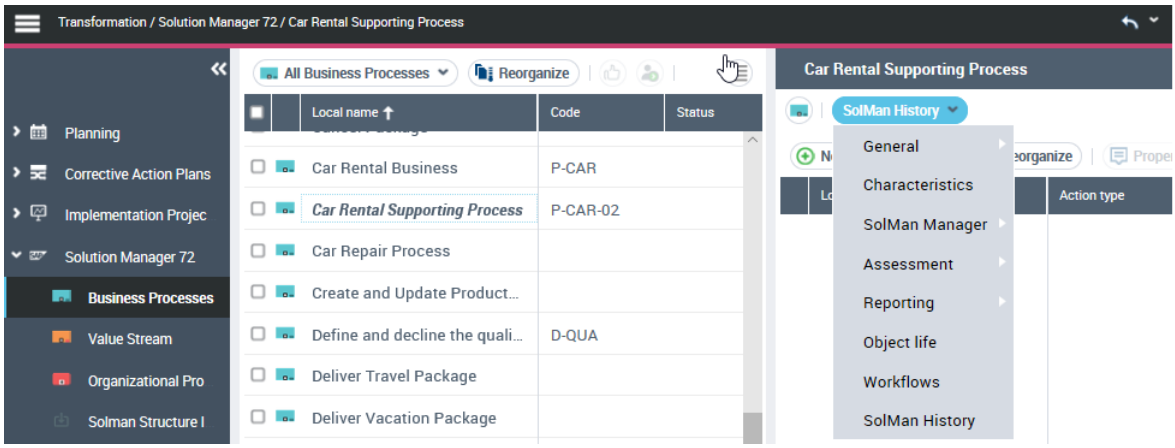
Authenticate and choose the solution and the branch to be imported into HOPEX. Only objects that have been created by the HOPEX synchronization are imported and updated.

SAP INFORMATION IN HOPEX

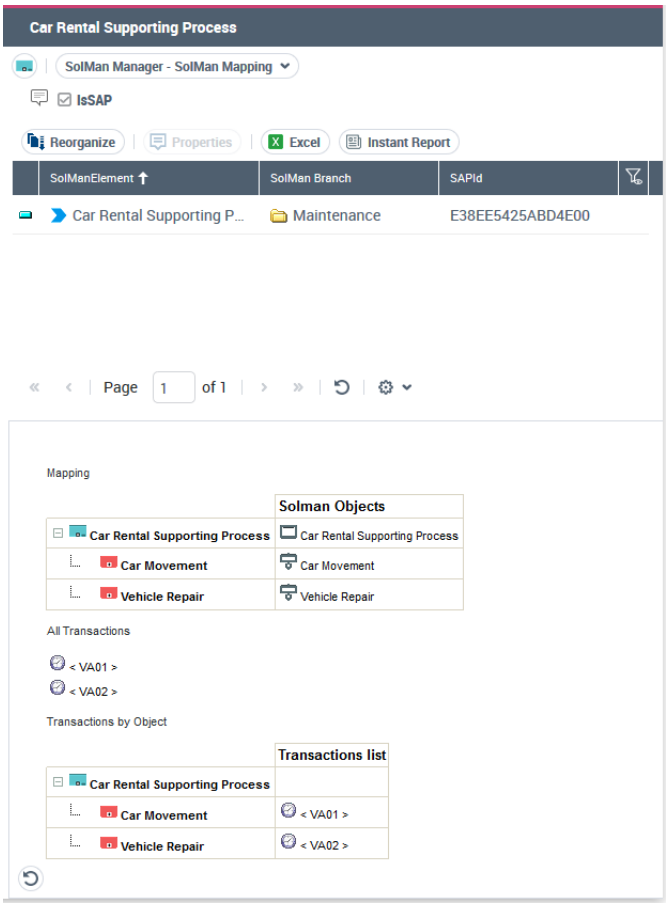
In Property Pages

Property pages dedicated to SAP information are available for business objects that can be synchronized with SolMan:

- SolMan Manager:
  - SolMan Mapping
  - Coverage Report
- SolMan History



The **SolMan Manager** > **SolMan Mapping** page gives you all the details concerning the mapping of this object and its sub-hierarchy:

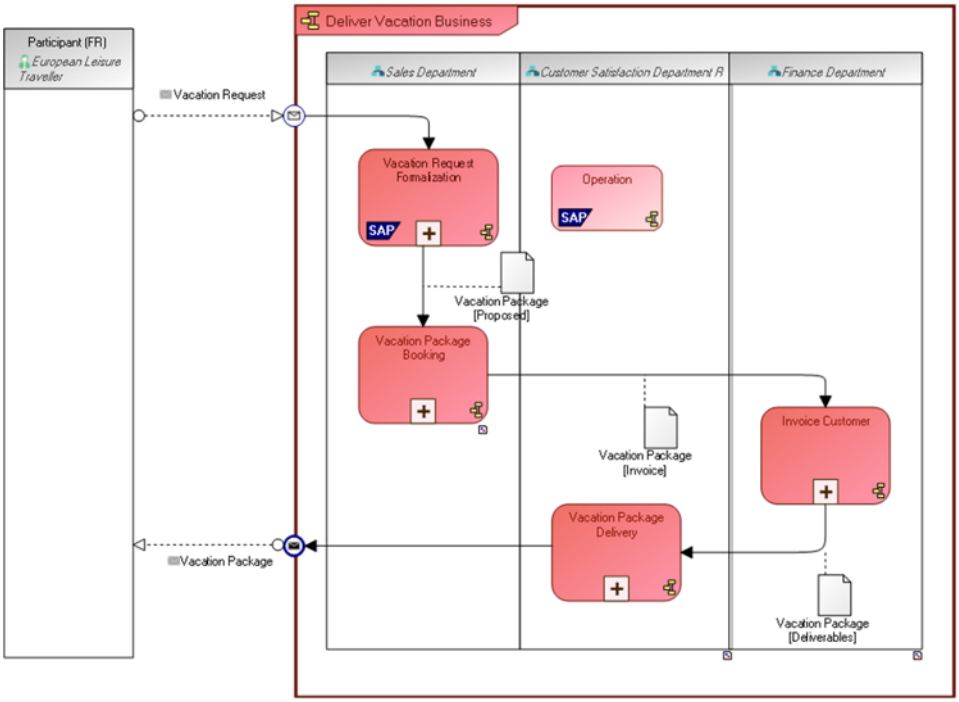


In this report, you can see all the objects that are mapped in SolMan, as well as all the associated transactions presented on a global level (all transactions in the business process) and on an individual level (transactions by object).

The **SolMan History** page specifies who did what and when on the selected object.

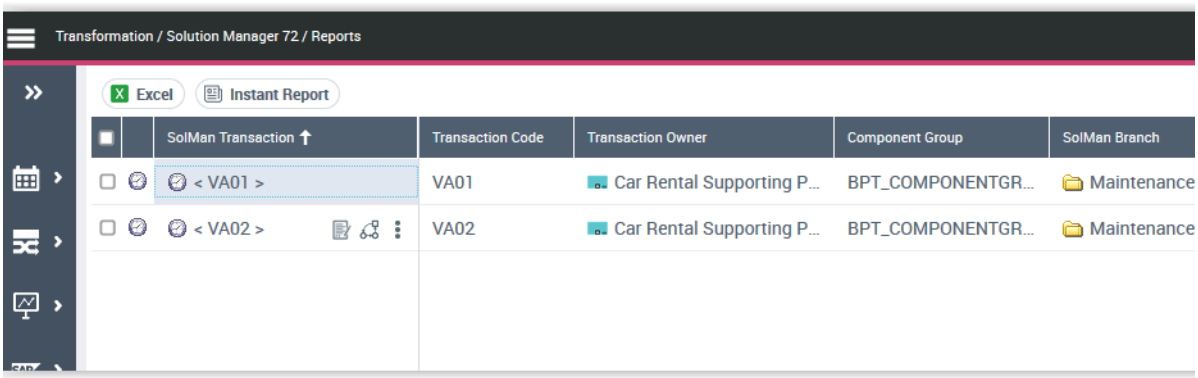
In Diagrams

In BPM diagrams, objects that are mapped to SAP objects are "tagged" with a SAP icon:



REPORTS

The **Reports** navigation pane opens the list of all transactions (a report dataset) that have been imported into HOPEX:

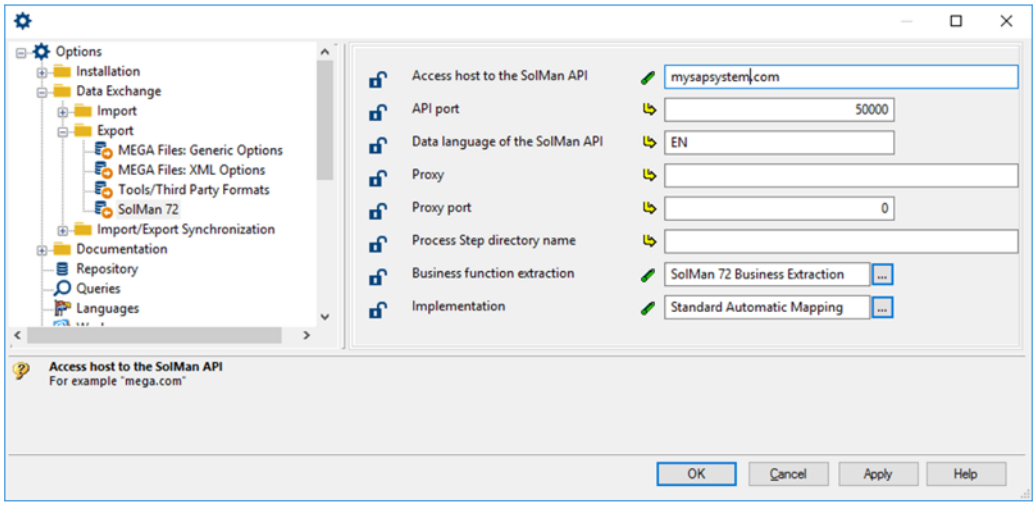


If you have numerous objects in this list, you can use the Instant Report feature to build your own list, chart or matrix on this dataset.

There are also reports attached to each object that you can open directly in the property pages. See "In Property Pages", page 14 for details.

Configuring Access to the SolMan System

All parameters for connecting HOPEX to your SolMan System are in the options available in Windows client:



You must enter the URL of your SolMan system, the API Port (50000 is SAP default value) and EN as the data language for the SolMan API.

Please check with your SolMan administrator to obtain the appropriate values for your local installation.

Automatic Mapping

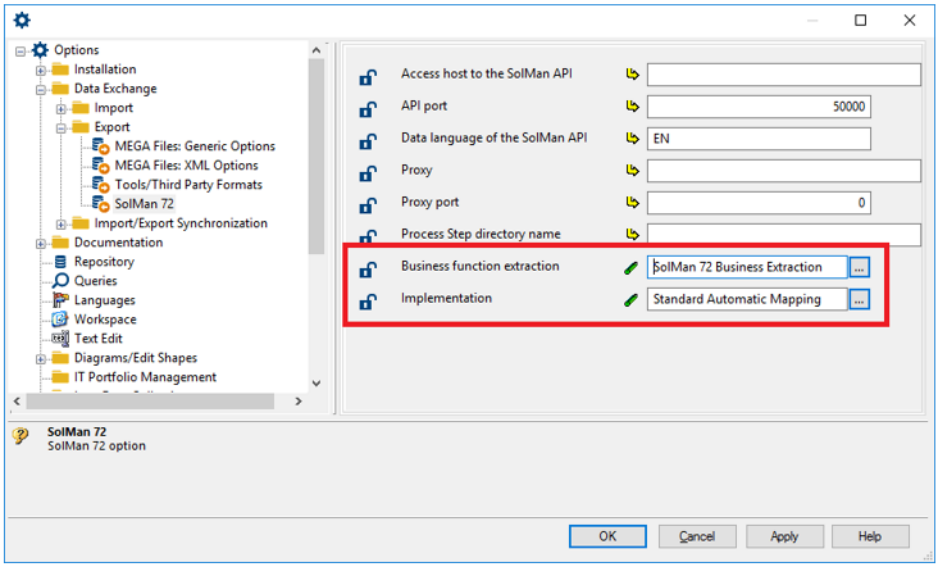
Strategy

First of all, a mapping strategy must be chosen: you must decide how business objects will be mapped with SolMan objects:

- Business objects that must be mapped with "SolMan Folder 72" must be a subclass of "SolMan Folder Mapped Element 72".
- Business objects that must be mapped with "SolMan Scenario 72" must be a subclass of "SolMan Scenario Mapped Element 72".
- Business objects that must be mapped with "SolMan Process 72" must be a subclass of "SolMan Process Mapped Element 72".
- Business objects that must be mapped with "SolMan ProcessStep 72" must be a subclass of "SolMan ProcessStep Mapped Element 72".
- Business objects that must be mapped with "SolMan Organizational Unit 72" must be a subclass of "SolMan Organizational Unit Mapped Element 72".
- Business objects that must be mapped with "SolMan Master Data 72" must be a subclass of "SolMan Master Data Mapped Element 72".

Configuration

Automatic mapping of business objects with SolMan objects require an operator and a mapping macro. Both must be configured in HOPEX options:



The operator is responsible for the entire business hierarchy. It must be configured to extract all business objects to be mapped to SolMan objects. Only the business objects included in the mapping strategy must be extracted by this operator. In

other words, only business objects that are also subclasses of "SolMan Mapping Element 72" should be extracted.

The automatic mapping macro

This macro is responsible for creating the SolMan object (see "Configuring SolMan Mapping", page 5).

The macro ~CN9tyqDFQzO7[Standard Automatic Mapping] can be used to solve simple mapping strategies where each occurrence of a given business MetaClass is always mapped with the same SolMan MetaClass.

The behavior of this macro is configured with an .ini file. This file must be called "sm72mapping.ini" and stored in the user directory.

This .ini file contains a single section: "MappingBToS". Each line must match the following syntax:

```
<Field of the business MetaClass>=<Field of the SolMan MetaClass
(the mapping)>;<Field of the MetaClass that owns the
mapping>;<Field of the MetaAssociationEnd of the owner to the
mapping>
```

For instance, here is a sample configuration that maps:

- Business Process with SolMan Scenario 72
- Organizational Process with SolMan Process 72
- Operations with SolMan ProcessStep 72

```
[MappingBToS]

~pj)grmQ9pG90[Business Process]=~GP1eK3g9Qju6[SolMan Scenario
72];~1R1eUDg9QrM7[SolMan Folder 72];~aWMjeSx9Qj3R[Owned SolMan
Scenario]

~gsUiU9B5iiR0[Organizational Process]=~vR1el4g9QXz6[SolMan
Process 72];~GP1eK3g9Qju6[SolMan Scenario
72];~xWMjxZx9QrNR[Owned SolMan Process]

~OsUiS9B5iiQ0[Operation]=~dR1eT9g9QP97[SolMan ProcessStep
72];~vR1el4g9QXz6[SolMan Process 72];~cZMjObx9QfSR[Owned SolMan
ProcessStep]
```

If the mapping strategy is too elaborate to be handled by the standard macro, a custom implementation must be provided.

This macro must implement a single method:

```
public void DoMapping(final Object oContext)
```

This macro must create or select the right SolMan Object to be mapped with the given business object. The mapping link itself is not defined by this macro and will be automatically defined according to the information provided in this method through the context object.

The context object implements the following interface:

```
public interface IAutomaticMappingContext {
    public MegaObject Element();
    public MegaObject MappingGet();
    public void MappingSet(final MegaObject mgobjMapping);
    public boolean MappingCreatedGet();
    public void MappingCreatedSet(final boolean blnMappingCreated);
    public MegaObject MappingBranch();
    public MegaObject MetaAssociationEnd();
    public IAutomaticMappingContext ParentContext();
    public MegaObject RootSource();
    public MegaObject RootTarget();
}
```

- Element: returns the business object to be mapped
- MappingGet: returns the SolMan objects that have been mapped in this method.
- MappingSet: returns the SolMan Object that has been created or updated for the given business object.
- MappingCreatedGet: returns true if the mapping has been created, false if the mapping has been updated.
- MappingCreatedSet: specifies if the SolMan Object (returned by the MappingSet method) has been created or updated.
- MappingBranch: returns the current "SolMan Branch 72".
- MetaAssociationEnd: returns the MetaAssociationEnd used to extract the current business object.
- ParentContext: returns the context mapping of the current business object parent.
- RootSource: returns the root business object extracted.
- RootTarget: returns the root business object mapping.