



ARIS Education Package

ARIS Architect Advanced Modeling Exercises-
University Edition

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Software AG
University Relations

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Introduction

Target Group

ARIS Education Package University Edition tutorial is aimed at students who do not have any specific knowledge of Process Model and Design, and who would like to teach themselves how to design, implement and simulate a business process.

Objectives

- Introduction to Business Process Analysis and Management
- Business Process Lifecycle
- Modules of ARIS Architect
- Advanced Modeling functionality
- Modeling with ARIS Architect: Creating library models and process models
- Introduction to ARIS Methodology
- Testing and evaluating models

Procedure

The tutorial comprises successive exercises that build upon each other. As you work through them, the configuration is extended step by step.

Database and other related material

All the documents and database required for the tutorial can be downloaded from the tutorials page of [ARIS community](#).

Go to the BPM Exercises section and download the “BPM Exercises with ARIS: Database & other related material”.

ARIS Community

The [ARIS community](#) contains all manuals and technical references available for AEP - PD&A project. It also provides the ARIS online help topics. These are usually only accessible via the ARIS user interface.

Sequence of reading

To make the best use of the **AEP - PD&A University Edition tutorial**, we recommend reading the documents supplied and performing the exercises in the following order:

- AEP - PD&A Installation Guide
- AEP - PD&A: ARIS Architect Beginner Modeling Exercises- University Edition
- AEP - PD&A: ARIS Architect Advanced Modeling Exercises - University Edition
- AEP - PD&A: ARIS Architect Administration Exercises - University Edition

Sample solution

The AEP - PD&A Architect Advanced Modeling Exercises - University Edition comes with a sample solution which has possible solution to each of the exercises in this tutorial. This solution document is available only to faculty members.

The solution document should not be referred to as the only correct solution to the AEP - PD&A: ARIS Architect Advanced Modeling Exercises. Please talk to your professor to get access to the sample solution.

Important Note

All the Exercises in AEP - PD&A: ARIS Architect Beginner Modeling Exercises- University Edition has to be done using the United Motor Group database.

- Start ARIS Architect & Designer
- Switch to the Explorer tab. Right-click on United Motor Group database
- Use the “Log in with options” and use Filter: “Entire method”, Version context: “Workspace”

If the UMG database doesn't already exist in ARIS Architect, you can find it in the BPM Exercises with ARIS: Database & other related material you downloaded previously (see introduction section)

- Start ARIS Architect & Designer
- Switch to the Explorer tab. Right-click on Local-> Restore Database
- Chose the location of the United Motor Group.adb file (AEP_PDA_Materials\United Motor Group\United motor Group.adb)
- From the drop down select Restore as “Non Versionable database” and click on “Finish”

Information on how to use this guide

This chapter provides information on how to use this manual. In this manual, menu items, file names, etc. are identified by the following notational and formatting conventions.

Notation/Formatting	Example
Menu items, key combinations, dialog boxes, file names, model types, model names etc. are shown in bold .	Click on Help to access the Help menu items and open further information sources.
Entries via the keyboard, menu item selections are shown within double quotes " ".	Enter "system" as the user name and "manager" as the password. Select Model Types: "EPC" and Object Types: "Event", "Function".
Connection types are shown in <i>italics</i> and are <u>underlined</u> .	This symbol uses the connection type <u><i>is predecessor of</i></u> .
Sequences of menus and menu items are in bold and separated by forward slashes.	Right-click on the chart background and select Display options/Show absolute indicator values .
Sequence of actions and selections are separated by an arrow→ and are in bold.	Go to Configuration→Method→Model types .
Entries with user-defined content are highlighted in bold type and enclosed in angle brackets.	Enter the path < Directory >\PPM.
One-line example texts, e.g. a long directory path, that need to be shown on several lines due to a lack of space are separated by the ↵ (arrow) symbol at the end of the line.	D:\Program Files\ppm\↵ xml\Adapter

Particular text sections are specially identified:

Warning



Warnings indicate important instructions, where loss of data, semantical error or a safety risk could arise if they are not observed carefully.

Note

Notes will provide you with additional information.

Tip

Tips indicate references to explanatory notes, e.g. in manuals or in the online help.

See also

This refers to further information on the same topic or related topics within the document.

Hint



Hints provide additional information to optimize your results.

United Motor Group (UMG) scenario

United Motor Group, a global automaker, has teamed up with **Software AG** consultants to launch an **ARIS Value Engineering** project, using the business process transformation method. After assessing UMG's strategic positioning and defining objectives, the team identified critical success factors, which need to be improved to achieve the defined strategy. Streamlining the business processes is the key to fulfill this objective.

UNITED MOTOR GROUP FACT & FIGURES

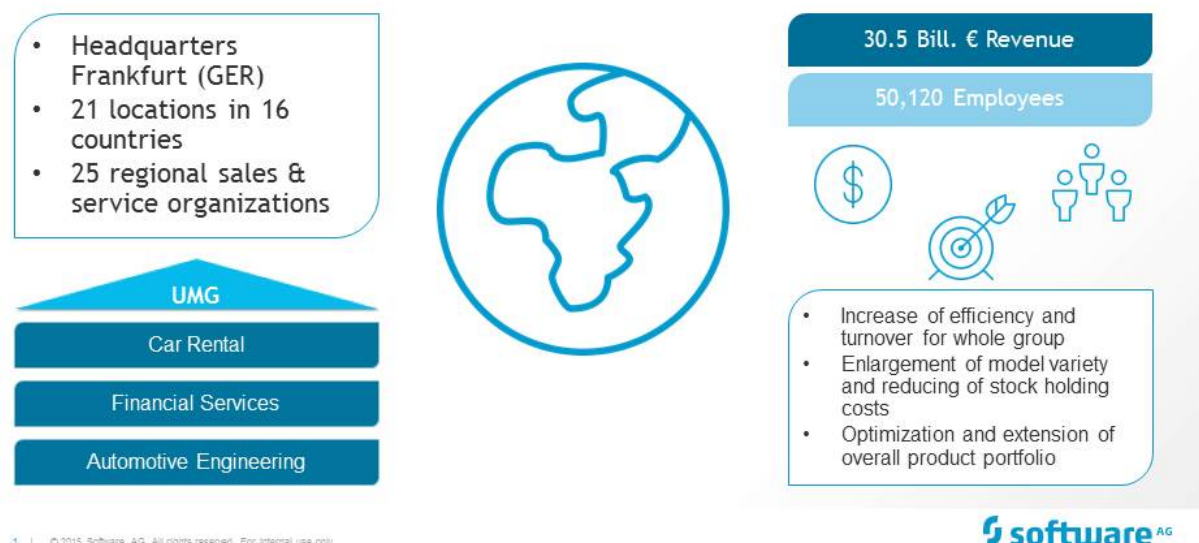


Figure 1 – Profile of United Motor Group

To create the necessary transparency with regard to business workflows, organizational structures and system landscapes, **ARIS Architect & Designer** has been selected as the modeling platform.

Note

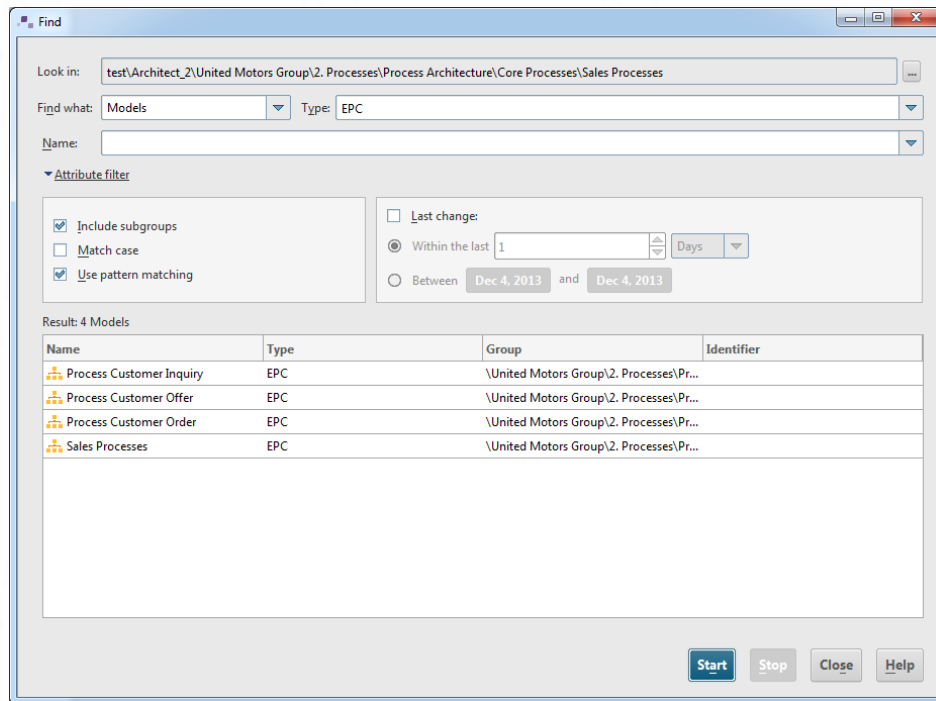
Before getting started with the exercises, please make sure that you have read all the previous sections thoroughly.

Exercise 1 – Generate Model

Not every object provided in an **Event-driven Process Chain (EPC)** is required by every member of a project, therefore it is useful to be able to generate additional models from the content established within the database. You would like to have access to all the information given in the **Sales Processes** group, but **ONLY** want to see functions. In this case the ARIS functionality **Generate Model** is used to have ARIS place only function objects in a **Function Tree** model type.

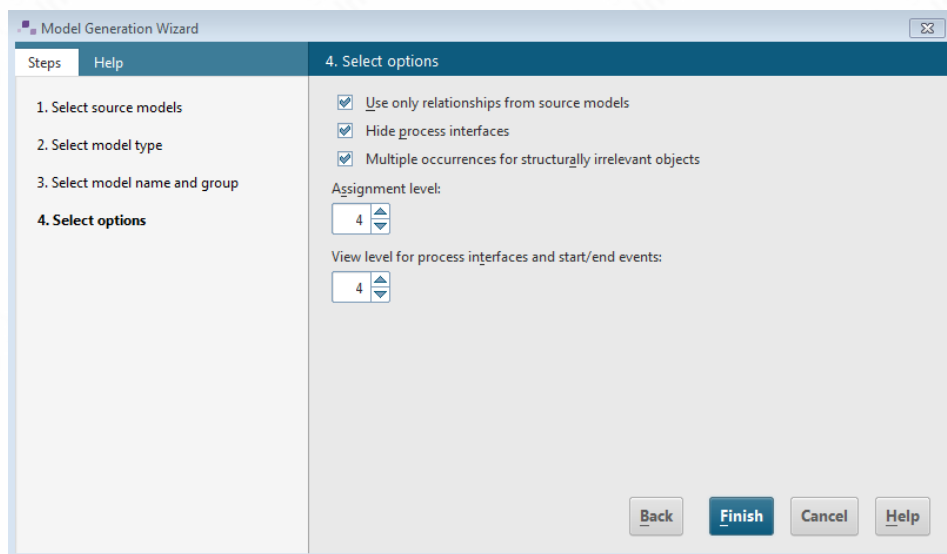
Procedure

- 1) Start **ARIS Architect & Designer**.
- 2) Open the Explorer tab and log in to **Architect_2** database. Right-click **Architect_2** → **Log in with options**. Use the filter “Entire Method”, Versioning state: “Workspace”. Navigate to **United Motor Group / 2. Processes / Process Architecture / Core Processes** group.
- 3) To select the source models, search for EPC models in the **Sales Processes** group.
 - a. Right-Click on the group → **Find**;
 - b. Find what: “Models”; Type: “EPC”, Include subgroups→**Start**;
 - c. Select the 4 EPCs within the results box of the Find window → **Right-click** → **Contents**→ **Generate Model** → **Next**.



- 4) Select source models → **Next**

- 5) Select model type: "Function Tree" → **Next**
- 6) Select model name and group: Name: "Sales - Function Tree"; Group: "Sales Processes" → **Next**
- 7) Select options → **Finish**
- 8) Switch to the Explorer tab and open the **Core Business Processes** VACD that can be found in the **United Motor Group / 2. Processes / Process Architecture / Core Processes** group.
- 9) Click on **Generate model** in the **Contents** sub-tab
 - a. Select model type: "Function Tree" → **Next**;
 - b. Select model name and group: Name: "Sales Top down functionality"; Group: "Sales Processes" → **Next**;
 - c. Select options: select the options as indicated in the window below → **Finish**.

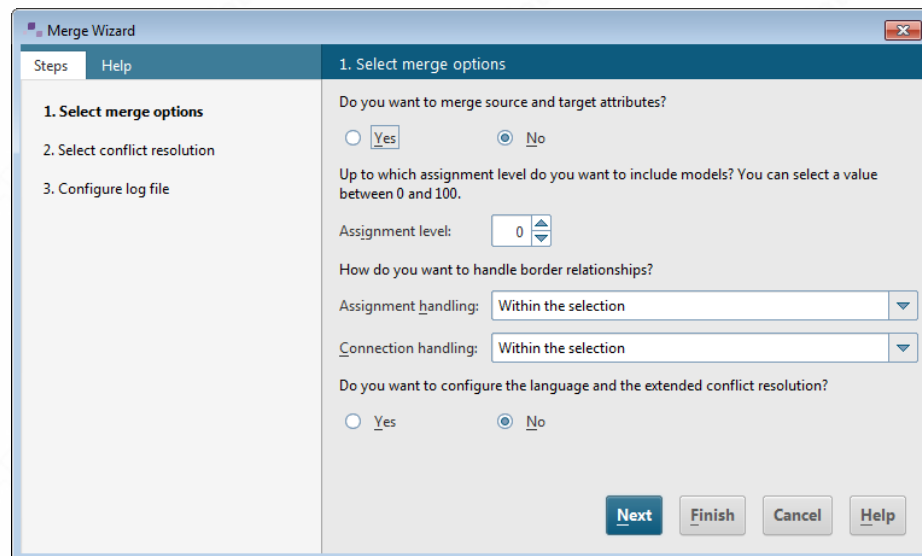


Exercise 2 – Merge an ARIS entry model

The Entry Model (Start model – Structuring model) that was created in the **United Motor Group** database is a great model to use as a starting point for your project database. We want to use this already created entry model as the project entry model in the **Architect_2** database. Therefore, we will merge the start model from the **United Motor Group** database into the **Architect_2** database as follows.

Procedure

- 1) Log in to **Architect_2** database. Log in to **United Motor Group** database as well.
(Username: “system”, password: “manager”; Filter: “Entire Method”, Versioning state: “Workspace”)
- 2) Select the **Start model** structuring model in the **United Motor Group** database, left-click and drag it into the **Architect_2** database. The Merge Wizard will appear.
 - a. Select merge options: select the options as indicated in the window below
 - b. → Next;



- c. Select conflict resolution: select the options as indicated in the window below
→ Next;

The screenshot shows the 'Merge Wizard' dialog box, Step 2: Select conflict resolution. The 'Steps' pane on the left lists three steps: 1. Select merge options, 2. Select conflict resolution (highlighted), and 3. Configure log file. The main area asks 'How do you want to handle conflicts?' and contains four dropdown menus: 'Models', 'Objects', 'Connections', and 'Font formats', all set to 'Source overwrites target'. Below these are two checked checkboxes: 'In the event of a conflict, always select group containing source' and 'Apply access privileges to new groups'. At the bottom are buttons for 'Back', 'Next' (highlighted), 'Finish', 'Cancel', and 'Help'.

- d. The model has been placed in the main group (**United Motor Group**), since in the source database it was a part of the main group as well. When opening it you will notice that the assignments have not been transferred.

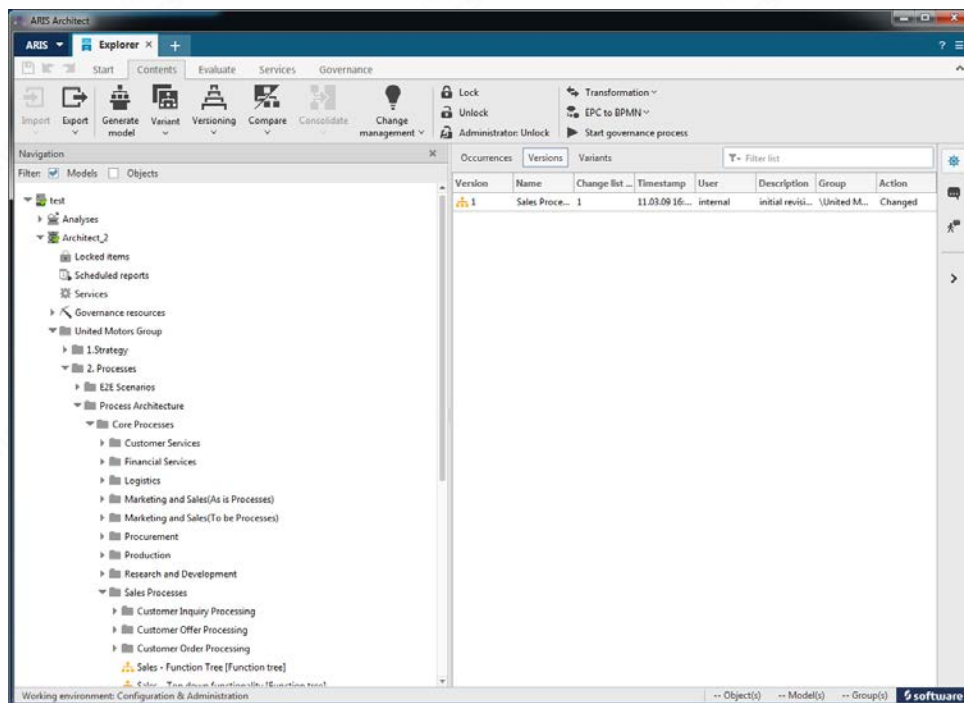
The screenshot shows the 'Merge Wizard' dialog box, Step 3: Configure log file. The 'Steps' pane on the left lists three steps: 1. Select merge options, 2. Select conflict resolution, and 3. Configure log file (highlighted). The main area asks 'What kind of information would you like to log during the merge procedure?' and has three radio button options: 'Errors and warnings' (selected), 'Errors, warnings, and detailed information', and 'Merge preview - Create log file without data transfer'. Below this is a text box for the log file path, containing 'C:\Users\fro\ARIS90\log\Merge.log', and a checked checkbox for 'Overwrite existing file'. At the bottom are buttons for 'Back', 'Finish' (highlighted), 'Cancel', and 'Help'.

Exercise 3 - Create and Compare Versioned Models

After reviewing the **Sales Processes EPC** your team has decided on some changes to be made to this EPC. Your objective is to create a new version of the **Sales Processes EPC** and then compare these models utilizing the **Compare Models** feature of **ARIS Architect & Designer**.

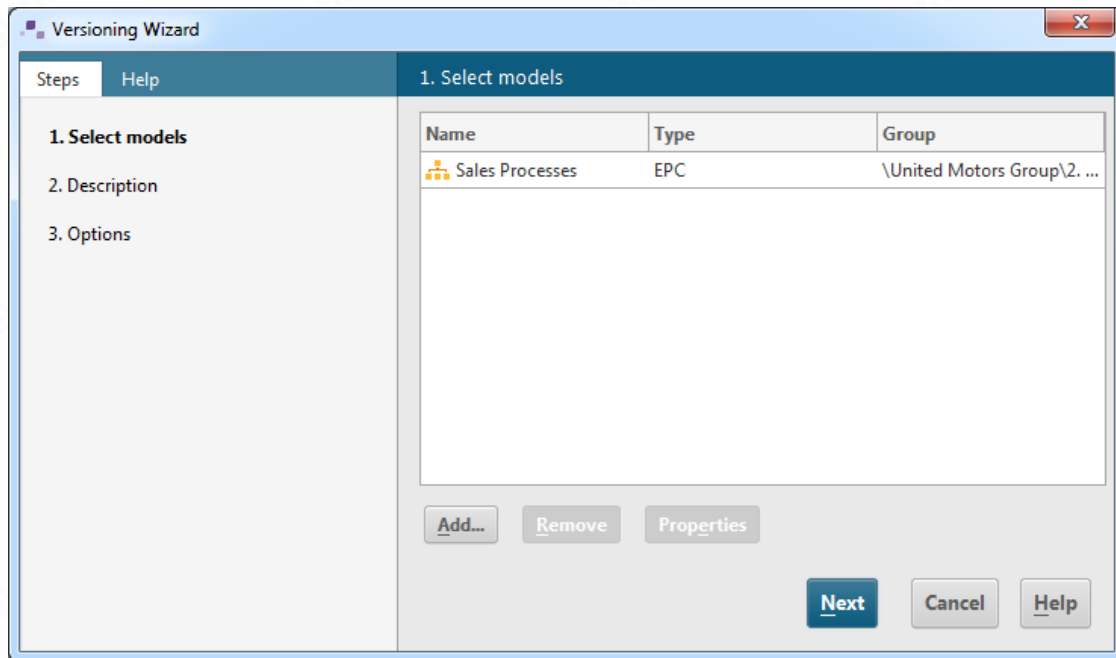
Procedure

- 1) Switch to the Explorer tab.
- 2) Within the **Architect_2** database, select the **Sales Processes [EPC]** which can be found in the **United Motor Group / 2. Processes / Process Architecture / Core Processes / Sales Processes** group. Select the **Versions Information** tab (on right side) and notice there is already an older version of this model.



- 3) Open the **Sales Processes [EPC]** from the Explorer tab.
- 4) Add the following objects as occurrence copies. They are already located in the database.
 - a. **Performance Management Systems** (Application system type object) supports **Process Customer Contact** and **Process Customer Order**.
 - b. **ERP Systems** (Application system type object) supports **Process Customer Inquiry** and **Process Customer Offer**.
- 5) Delete the **Order Processing Germany Organizational Unit** from the **Process Customer Inquiry** function object.
- 6) Save and close the model

- 7) Switch to the Explorer tab.
- 8) Right-click on the **Sales Processes [EPC] → Contents → Version** (the Versioning Wizard will open)



- 9) Select models → **Next**
- 10) Description: "Sales Processes with Application System Type objects and missing Organizational unit" → **Next**
- 11) Options: Assignment handling: "include border items"; Connection handling: "include border items"; Assignment level: "2" → **Finish**
- 12) While the **Sales Processes EPC** is highlighted in the **Explorer** tab, select the **Versions** tab on the right side and select both versions.
- 13) In the Contents sub-tab → **Compare** → **Compare Versions**.
- 14) Click on the objects to see the differences.
- 15) Close the models.

Exercise 4 – Using Standard Reports

In this Exercise you will learn to use Standard Reports.

Procedure

- 1) Select any EPC model.
- 2) Go to **Evaluate** → **Start report**. Report: “Output model information”.
- 3) Run the report “Output model information” on the selected model.
e.g.: Process Customer Order
- 4) The model should contain additional symbols.
e.g.: Application System Types, Persons, and Technical Terms etc.
- 5) Analyze the output document.

Exercise 5 – Content Adaption

In this exercise you will learn to:

- Create an Evaluation filter.
- Run a standard report using the Evaluation filter.

Procedure

Create a new evaluation filter- "EPC evaluation" using the following settings:

- 1) Go to **ARIS Button** (Top left corner) → **Administration** → **Configuration** → **Conventions** → **Filter**.
- 2) Click on **New** → **Filter**.
- 3) Select: Name: "EPC Evaluation"; Type: "Evaluation Filter"
- 4) Model Types: "EPC"
- 5) Object Types: "Event", "Function"
- 6) Connection Types: "activates, calls, creates, is carried out at, is predecessor of, supports"
- 7) Symbols: "Event", "Function"
- 8) Connection Types for EPC models: "event activates function, function creates event, function is predecessor of function"
- 9) Attribute Types for EPC models: "Description/Definition"
- 10) Run the report "Output model information"
- 11) Use the same model that you used in the previous exercise.
- 12) Use the evaluation filter that you created in Step 1.
- 13) Compare the output document with the output document of Exercise 4.

Exercise 6 – Automatic Scheduling of Reports

In this exercise you will learn to:

- Create an automatic schedule to run an ARIS Report for **ARIS MashZone**.
- Copy the file data to the clipboard in readiness for **ARIS MashZone** use.
- View the report result in **ARIS Architect**.

You need to create an automatic schedule in **ARIS Architect & Designer** to run a report every hour for **ARIS MashZone**. You need to ensure that the information can be copied to the clipboard, an essential element of the **ARIS MashZone** data 'pickup' and check the result of the report yourself to verify that the data is correct.

Procedure

1) Creating a new automatic schedule:

- a. Log in to **Architect_2** database, switch to the Explorer tab
 - i. Right click on Scheduled Reports under the database name → **New** → **Create scheduled report**;
 - ii. Provide the Name: "Object Output Information (for MashZone) for the schedule and use the password "manager".
- b. Be sure to read the description of the report to understand what the output will be. This will guide you in your context selection.
- c. You can decide what the context will be -
 - i. E.g.: Functions, Systems, Data - the choice is yours.



Do not select a report script that requires any 'operator input' otherwise the schedule will fail.

- d. Now set a schedule for the scheduled report to run:
 - i. Schedule: Every hour;
 - ii. Start time: Now (Your current time);
 - iii. Start date: Today's date.
- e. When you have selected **Finish**, remember to refresh the screen to see the following status changes in the Schedule:
 - i. Status from Activated to Deactivated;
 - ii. Last Start: Never to Last Start: Today's date and time;
 - iii. Last Duration: 0 seconds to x number of seconds it took for the report to run.

2) Viewing the results:

- a. Display the latest result by clicking **Evaluate** → **Scheduled reports** → **Display result**. Enter a file name → **OK**.

Close the Excel spreadsheet. It is ready to be uploaded into **ARIS MashZone** now. (Working with **ARIS MashZone** is not covered in this course.)

Exercise 7 - Create a list (spreadsheet) of application systems

Using the new spreadsheet model type, creating sophisticated calculations is easier than ever before. There is now no need to switch to a third party spread sheet application to do calculations. Hence, data will always be up-to-date and you might use it to actually update data from within your spreadsheets. On the other hand, you may stick to simple lists, too.

This exercise is to be done in **ARIS Architect & Designer**.

Procedure



Choose appropriate method filter.

Basically every object and attribute type might occur in a spreadsheet model. The "Standard" filter we have used until now is not sufficient for this exercise, as it limits us too much. – In a production environment you should extend the existing filter(s). In our training environment we are simply going to use another filter.

- 1) Log into **United Motor Group** database. Use "Log in with options", Filter: "Entire Method".
- 2) Create a **Spreadsheet model**
 - a. Unfold **United Motor Group** database.
 - b. Unfold **UMG** main group.
 - c. Right-click **4. IT Systems group** → **New** → **Spreadsheet**. Name: "IT Systems Glossary" → **Finish**
- 3) Prepare spreadsheet
 - a. Enter "App. Name" in cell **A1** and press **Enter**;
 - b. Enter "`=ARIS_ATTRIBUTE("AT_DESC")`" in cell **B1** and press **Enter**;
 - c. Click on row header of row 1;
 - d. Apply some formats:
Bold font, pale blue background color, centric horizontal alignment.
- 4) Add **IT systems** to spreadsheet.
 - a. Switch to Explorer tab.
 - b. Unfold **Technologies** group within **4. IT Systems** group;
 - c. Unfold **IT components** group;
 - d. Select **1. Software**;
 - e. Switch to Objects display in the central content panel;
 - f. Enter "aris" into search box right above the list;
 - g. Select all (eleven) entries of result list;
 - h. Right-click selection → **Copy**;
 - i. Switch to **IT Systems Glossary** spreadsheet;

- j. Select cell **A2**;
 - k. Click Paste to create occurrences of all copied objects.
- 5) Maintaining IT system descriptions
- a. Enter “=ARIS_ATTRIBUTEVALUE(A2;B\$1)” into cell B2 and press **Enter**;
 - b. Copy cell B2;
 - c. Select cells B3 through B12 → **Paste**;
 - d. Double-click the cell next to ARIS Connect in column B to start editing;



Editing Formulas vs. Editing Values

Selecting a cell by single click and starting to type will replace formula (and value) of that cell. Thus, it looks like you have changed the attribute without actually doing it. Always use double-click to start editing (attribute) values in a spreadsheet.

- e. Enter the following text (At least some words of it):
“Connect, communicate and collaborate on processes easily on a social network. No BPM experience is required.” and press **Enter**;
 - f. If you like, repeat steps e) and f) for other objects, too;
 - g. Save the spreadsheet.
- 6) Check your results
- a. Switch to Explorer tab;
 - b. Right-click **ARIS Connect object** → **Attributes**;
 - c. If you see the entered text as value of description attribute, everything is alright.

Attributes																					
<div> <div> <div>+</div> <div>📄</div> <div>🔍</div> <div>✂</div> <div>📋</div> <div>🔄</div> <div>↶</div> <div>↷</div> <div></div> <div></div> </div> <div>B I U S</div> </div>																					
Application system type																					
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<div> <div>Application system type</div> <div> <div>Source indication</div> <div>Development effort</div> <div>Analysis attributes</div> <div>Development costs</div> <div>Installation status</div> <div>System attributes</div> <div>Current cost for data center</div> <div>Acquisition costs</div> <div>Workflow</div> </div> </div>	<table> <tr> <th>Attribute name</th><th>ARIS Connect (English (United States) - Alternative ...</th></tr> <tr> <td>Name</td><td>ARIS Connect</td></tr> <tr> <td>Identifier</td><td></td></tr> <tr> <td>Full name</td><td></td></tr> <tr> <td>Description/Definition</td><td>Connect, communicate and collaborate on processes easily on social network. No BPM experience required.</td></tr> <tr> <td>Remark/Example</td><td></td></tr> <tr> <td>Processing code</td><td></td></tr> <tr> <td>Author</td><td></td></tr> <tr> <td>Short description</td><td></td></tr> <tr> <td>Type</td><td>Application system type</td></tr> </table>	Attribute name	ARIS Connect (English (United States) - Alternative ...	Name	ARIS Connect	Identifier		Full name		Description/Definition	Connect, communicate and collaborate on processes easily on social network. No BPM experience required.	Remark/Example		Processing code		Author		Short description		Type	Application system type
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Remark/Example																					
Processing code																					
Author																					
Short description																					
Type	Application system type																				

Exercise 8 – Create a query, including a Spreadsheet

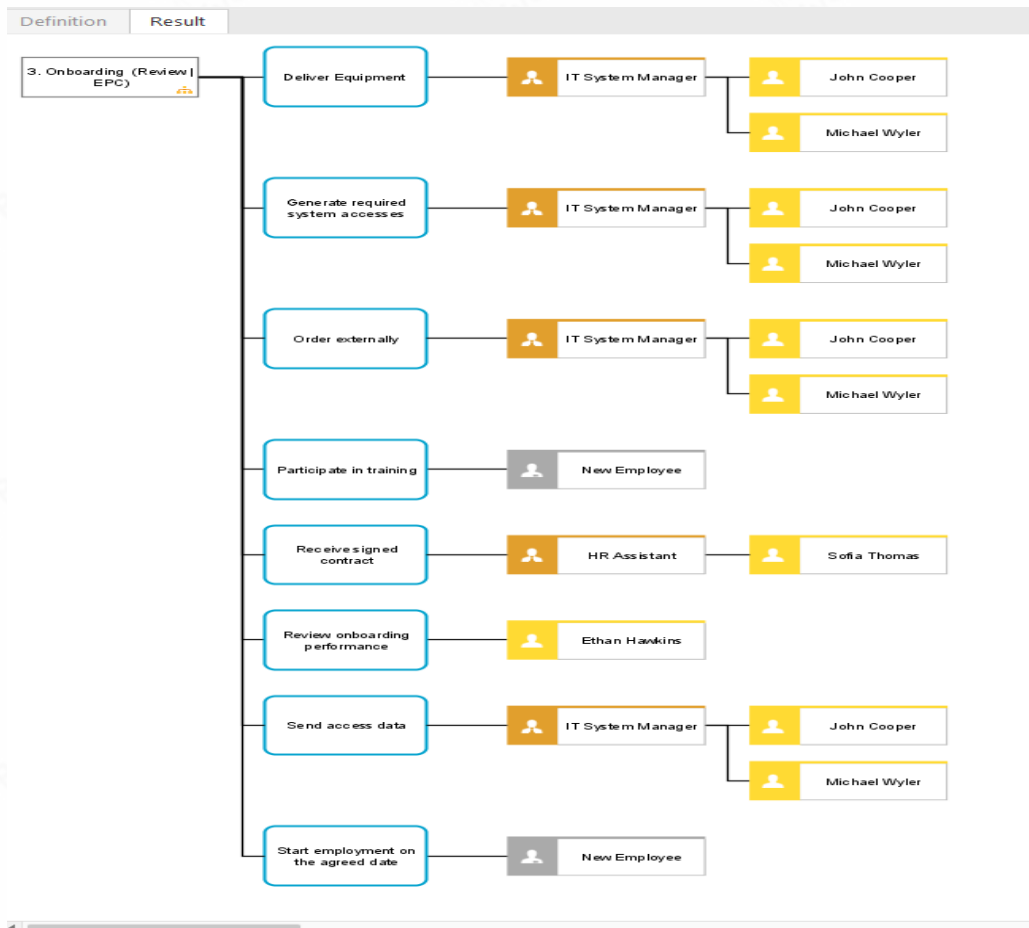
Now, queries are user-friendly to create. As an added value it is possible to write query results to a spreadsheet, which in turn could be used as input for other means (MashZone, etc.).

Procedure

- 1) Create a new query
 - a. Open a New tab.
 - b. Click **Query** in **New** section.
 - c. Select **United Motor Group** database → **Finish**.
 - d. A fresh query register is opened.
- 2) Define Query to find all Persons (directly or indirectly connected), who execute a function of an EPC. The EPC is to be chosen at run-time.
 - a. Enter "ep" into Start item input field;
 - b. Select EPC (MT_EEPC);
 - c. Unfold **contains** -> **Object** in Successors panel;
 - d. Unfold **Function** view;
 - e. Select **Function**;
 - f. Select **Function** in Definition panel;
 - g. Unfold **has relation with** -> **Object** in Successors panel;
 - h. Unfold **Organization** view;
 - i. Unfold **Organizational unit**;
 - j. Select is carried out by;
 - k. Repeat steps i) and j) for **Organizational Unit Type**, **Person**, **Position** and **Role**;
 - l. Select **Organizational Unit** in Definition panel;
 - m. Unfold **has relation with** -> **Object** in Successors panel;
 - n. Unfold **Organization** view;
 - o. Select **Person**;
 - p. Repeat steps l) to o) for connecting from **Organizational Unit Type**, **Position** and **Role** to **Person**;
 - q. Select topmost **Person** in definition panel;
 - r. Press and hold **ctrl** key and select all other **Person** occurrences in Definition panel. Then release **ctrl** key;
 - s. Click **Join** in Start tab;
 - t. Click **Save** icon below **ARIS** app button;
 - u. Enter "Persons involved in executing a process (EPC)" as query name;
 - v. Click **Save**.

3) Testing the query

- Switch to Result panel;
- Enter “onb” as start item name and wait a few seconds;
- Select “3. Onboarding (Review | EPC)” → OK;
- The Result panel should look like this:

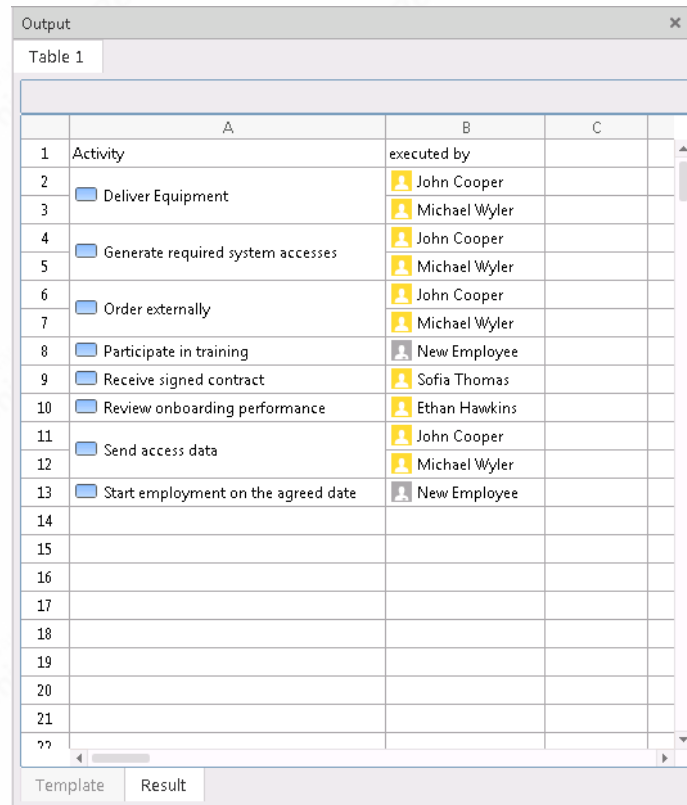


4) Creating the spreadsheet

- Switch to Definition panel;
- Click **Create table view** on Start tab;
- Enter “Activity” in cell A1;
- Enter “executed by” in cell B1;
- Drag-and-drop Function from Definition panel to cell A2;
- Drag-and-drop Person from Definition panel to cell B2;
- Click Save icon below ARIS app button.

5) Testing the spreadsheet

- a. Switch to Result panel of the table view;
- b. Click **Evaluate table** on Start tab;
- c. The Output panel should look like this:



	A	B	C
1	Activity	executed by	
2	<input type="checkbox"/> Deliver Equipment	John Cooper	
3		Michael Wyler	
4	<input type="checkbox"/> Generate required system accesses	John Cooper	
5		Michael Wyler	
6	<input type="checkbox"/> Order externally	John Cooper	
7		Michael Wyler	
8	<input type="checkbox"/> Participate in training	New Employee	
9	<input type="checkbox"/> Receive signed contract	Sofia Thomas	
10	<input type="checkbox"/> Review onboarding performance	Ethan Hawkins	
11	<input type="checkbox"/> Send access data	John Cooper	
12		Michael Wyler	
13	<input type="checkbox"/> Start employment on the agreed date	New Employee	
14			
15			
16			
17			
18			
19			
20			
21			
??			

- 6) Publishing the query
 - a. Close the Query tab;
 - b. Switch to Explorer tab;
 - c. Unfold **Analyses** entry in the Navigation panel;
 - d. Unfold Queries → Unfold Private;
 - e. Right-click "Persons involved in executing a process (EPC)" → **Publish**.
- 7) Running the query on another model (like end-users will do).
 - a. Open a New tab;
 - b. Enter " * " as search term and press **Enter**;
 - c. In the Filters panel select EPC model types;
 - d. Right-click any model name in the result list;
e.g.: Purchase order / release order
 - e. Click **Start query** in Evaluate sub-menu;
 - f. Select "Persons involved in executing a process (EPC)" → **OK**.



Which is the best way to start a query?

You might start a query from nearly anywhere: Search results, an already opened model, the Explorer tab ... - Simply choose the most convenient way.

About

The **AEP - PD&A Architect Advanced Modeling Exercises- University Edition** is a part of a series of three tutorials:

- AEP - PD&A Architect Beginner Modeling Exercises- University Edition
- **AEP - PD&A Architect Advanced Modeling Exercises - University Edition**
- AEP - PD&A Architect Administration Exercises - University Edition

These tutorials are aimed to help students who do not have any specific knowledge of Process Model and Design and who would like to teach themselves how to design, implement and simulate a business process. Finishing all three tutorials will help students further improve their knowledge on Business Process Management, modeling and gain expertise in **ARIS Architect & Designer**.

We hope you enjoyed working with **ARIS Architect & Designer** and **AEP- PD&A Architect Advanced Modeling Exercises- University Edition**.

With this tutorial:

- You learnt the basics of Business Process Management
- You are now familiar with the various modules and functionality of **ARIS Architect & Designer**
- With the successive exercises you familiarized yourself with working on various model types- Value added chain diagrams (VACD), Organizational charts, Application System Type Diagram Event-Driven Process Chain (EPC)
- You are now comfortable with creating, testing and evaluating these models with the help of **ARIS Architect & Designer**

Thank you!