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ARIS RISK & COMPLIANCE MANAGER
SEMANTICS VERIFICATION FOR EXPORTING DATA

VERSION 10.0 – SERVICE RELEASE 16

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Contents

1 Introduction

When modeling in ARIS, certain conventions must be adhered to. If these conventions have not been observed, the synchronization of data from ARIS into ARIS Risk & Compliance Manager is canceled. You can run the report **Check for compliance with ARIS Risk & Compliance Manager modeling conventions** to check data before you transfer data to make sure that guidelines have been met. When you run this master report, the subordinate semantics reports (Page 5) run automatically.

You can use the resulting log to correct the modeling errors, which ensures that the synchronization to ARIS Risk & Compliance Manager is performed correctly. For a detailed description, from the conceptual design and modeling to the handling of synchronization, refer to the **ARCM - Modeling Conventions manual**.

The following descriptions of the reports for semantics verifications are based on the standard definitions of the configuration file **ARCM-Semantics_Properties.js** and the reports.

2 Use semantics reports

2.1 Installation of semantics reports

By default, the ARIS Risk & Compliance Manager semantics reports are available in the report category **ARIS Risk & Compliance Manager**. The master report **Check for compliance with ARIS Risk & Compliance Manager modeling conventions** executes all individual semantic reports. Only the master report can be run by report wizard.

2.2 Run semantics reports

You can run the report **Check for compliance with ARIS Risk & Compliance Manager modeling conventions** to check data before you transfer data to make sure that guidelines have been met. When you run this master report, the subordinate semantics reports (Page 5) run automatically.

Prerequisite

- You need the **Read** access privilege for the groups in which the database items are saved.
- The items were saved.
- You have access to this script. Access to scripts can be restricted to certain user groups.

Procedure

1. Start ARIS Architect.
2. Click **ARIS >** 📇 **Explorer**. The **Explorer** tab opens.
3. Click ⚙ **Navigation** in the bar panel if the **Navigation** bar is not activated yet.
4. Right-click the relevant group or database.
5. Click **Evaluate > Start report**. The **Report Wizard** opens.
6. Select the **ARIS Risk & Compliance Manager** category and the **Check for compliance with ARIS Risk & Compliance Manager modeling conventions** report.
7. Click **Next**.
8. Select the output settings.
9. Click **Finish**.

All available reports are started. The result is a cumulative report on the results of all individual reports that is output as a text file.

2.2.1 Example of a report without error messages

```
**************************************************************
Error report on semantic verification of control test definitions
**************************************************************


No errors found.
```

2.2.2 Example of a report with error messages

```
**************************************************************
Error report on semantics verification for hierarchy structures
**************************************************************


Hierarchy structure of the "Regulations" checked. Contains errors!

Required attribute(s) not defined!!

    Technical term - (Untitled)
        Required attribute(s) not defined: AT_NAME
        Required attribute(s) not defined: AT_AAM_SIGN_OFF_RELEVANT

    Exists in:
        Group: 1.5 Regulations
        Model: Regulation hierarchy

Several parent nodes found!

    Technical term - (Untitled)
    Exists in:
        Group: 1.5 Regulations
        Model: Regulation hierarchy
                Parent 1: Technical term
                Parent 2: Regulations
```

3 What additional components do you need for the semantics reports?

The logic of the semantics verification (Page 2) is divided into four components.

THE REPORTS FOR PERFORMING THE RELEVANT VERIFICATIONS

- **Verify semantics of hierarchy structures**
- **Verify semantics of risks**
- **Verify semantics of controls**
- **Verify semantics of control test definitions**
- **Verify semantics of users**
- **Verify semantics of user groups**
- **Verify semantics of questionnaire templates**
- **Verify semantics of audit templates**

THE JAVASCRIPT FILES THAT PROVIDE THE BASIC FUNCTIONALITY OF THE REPORTS AVAILABLE

- **arcm-common.js** (**Common files** section)
- **arcm-mapping.js** (**Common files** section)
- **aris2arcm-mapping.xml** (**Common files** section)
- **ARCM-Semantics_BaseDataFunctions.js**
- **ARCM-Semantics_BaseReportAndOutputFunctions.js**

THE JAVASCRIPT FILE FOR CONFIGURING THE VERIFICATIONS

- **ARCM-Semantics_Properties.js**

THE MASTER REPORT FOR EXECUTING ALL AVAILABLE REPORTS IN ONE STEP

The **Check for compliance with ARIS Risk & Compliance Manager modeling conventions** report runs all assigned reports, bundles the results and outputs them.

4 What semantics reports are available?

Report	Context	Executable by report wizard
Check for compliance with ARIS Risk & Compliance Manager modeling conventions	Database, group	Yes
▪ **Verify semantics of hierarchy structures**	Group	No
▪ **Verify semantics of risks**	Group	No
▪ **Verify semantics of controls**	Group	No
▪ **Verify semantics of control test definitions**	Group	No
▪ **Verify semantics of user groups**	Group	No
▪ **Verify semantics of users**	Group	No
▪ **Verify semantics of questionnaire templates**	Group	No
▪ **Verify semantics of survey schedulers**	Group	No
▪ **Verify semantics of audit templates**	Group	No
▪ **Verify semantics of policies**	Group	No

5   What verifications are defined for audit templates?

This description relates to the default definition of the configuration file and reports.

REPORT NAME

Verify semantics of audit templates

VERIFICATIONS TO BE PERFORMED

The report verifies whether:

- the **Synchronize ARCM** attribute is set to **true**. Only audit templates for which this attribute is activated are considered.

- an audit is connected to exactly one audit owner group, exactly one audit reviewer group, and no more than one audit auditor group.

- an audit step is connected to exactly one audit step owner group.

- no more than one connection of the **is within the scope of** type exists for a hierarchy type in the model.

- an audit step is connected to exactly one superior audit step or exactly one audit via a connection of the **belongs to** type, so that a unique tree structure is provided.

- an audit template or an audit step template exists only once in a model.

- the start date of the preparation of an audit occurs before or is identical with the audit period.

- the audit step period occurs within the audit period or whether start and end date of audit step period and audit period are identical, with the end date of the audit period being calculated from the start date and maximum total time taking into consideration the value specified for the **Weekend off** attribute.

- the mandatory attributes for the following objects are specified:
  - **Audit template**:
    - **Name**
    - **Start date**
    - **Maximum total time**
    - **Start date of audit preparation**
    - **Start date of control period**
    - **End date of control period**

- **Audit step template**:
    - **Name**
    - **Start date**
    - **Maximum total time**
    - **Desired processing time**
- hierarchy types (risk category, application system type, function (process), organizational unit, or technical term) are connected to the task allocation diagram using the **is within the scope of** connection for the purpose of defining the scope of an audit template or audit step template.
- the value of the maximum total time and the relevant processing time is not 0000:00:00:00.
- the value of the relevant processing time does not exceed the value of the maximum total time.

6 What verifications are defined for controls and control execution definitions?

This description relates to the default definition of the configuration file and reports.

REPORT NAME

Verify semantics for controls and control execution definitions

VERIFICATIONS TO BE PERFORMED

CONTROLS

The report verifies whether:

- the required attributes are set:
  - **Name**
- the control is unique within the modeled business controls diagram.
- a control has an occurrence in no more than one business controls diagram.
- the **Synchronize ARCM** attribute is set to **true**. Only controls for which this attribute is activated are considered.
- the controls are connected to a risk for which the **Synchronize ARCM** attribute is set to **true** (does not apply if the verification was started on a risk diagram for which the **Synchronize ARCM** attribute is set to **true**).
- the controls are each connected to a maximum of one control manager group.

CONTROL EXECUTION DEFINITIONS

The report verifies whether a control execution definition is linked to the control. If so, verifies whether:

- the required attributes are set:
  - **Name** and
  - **Control documentation frequency** and
  - **Time limit for documentation of control execution in days** and
    This attribute is not mandatory if the **Control documentation frequency** attribute has the value **Event-driven**.
  - **Start date** and
    This attribute is not mandatory if the **Control documentation frequency** attribute has the value **Event-driven**.
  - **Length of documented period**

- a control execution definition is linked to only one organizational unit.

- a control execution definition is linked to only one group (there must be only one Control execution owner group).

- the **Event-driven control documentation allowed** attribute is set to **true**, when the value **Event-driven** is set for the control documentation frequency.

- the start date is before the end date.

- the control execution definition is unique within the modeled business controls diagram.

- a control execution definition has a single assigned control. A control can have multiple control execution definitions but each control execution definition can only ever have one control.

- a control execution definition occurs in no more than one business controls diagram.

7 What verifications are defined for hierarchy structures?

This description relates to the default definition of the configuration file and reports.

REPORT NAME

Verify semantics of hierarchy structures

CONTEXT

According to the default definition, the verification uses the hierarchy structures with the following models:

PROCESS

EPC, **Value-added chain diagram**, and **Function allocation diagram**

ORGANIZATIONAL UNIT

- **Organizational chart**

REGULATIONS

- **Technical terms model**

Special for Regulatory Change Management

The report verifies whether:

- the **Review-relevant** attribute is selected. If so, the following mandatory attributes and conditions are checked:
    - **Review frequency**
    - **Time limit for the execution of the review in days**
    - **Start date of review**
    - The technical term must be connected to precisely one hierarchy owner group.

TESTER

No models can be specified for the tester hierarchy. The models that were specified for the organizational unit are used.

APPLICATION SYSTEM TYPE

- **Application system type diagram**

RISK CATEGORY

- **Risk diagram**

VERIFICATIONS TO BE PERFORMED

The report verifies whether:

- the required attributes are specified for all hierarchy structures:

    - **Name**

- each element of the hierarchy has a maximum of one parent node.

- a hierarchy element is connected to no more than one sign-off owner group (not relevant for application system type and risk category hierarchy).

- there are no overlaps between tester hierarchy and organizational hierarchy. An organizational unit must not belong to the tester hierarchy and the organizational hierarchy at the same time.

Only trees are permitted for structuring the hierarchy in ARIS Risk & Compliance Manager, no net structures.

8   What verifications are defined for policy definitions?

This description relates to the default definition of the configuration file and reports.

REPORT NAME

Verify semantics of policies

(Object type name is **Policy** in ARIS, **policy definition** in ARIS Risk & Compliance Manager)

VERIFICATIONS TO BE PERFORMED

The report verifies whether:

- the **Synchronize ARCM** attribute is set to **true**. Only policy definitions for which this attribute is activated are considered.

- a policy definition is connected to exactly one policy owner group.

- a policy definition is connected to no more than one policy auditor group.

- at least one policy addressee group is connected if the policy is of the **Confirmation required** type.

- the publishing start date is after the start date of the publishing preparation period.

- the end date of the publishing period is after the start date of the publishing period.

- the end date of the publishing preparation period is after the start date of the publishing preparation period.

- the end date of the approval period is after the start date of the approval period.

- the approval period of the approvers is completely within the publishing preparation period of the owners.

- the mandatory attributes for the following objects are specified:

  - **Policy definition:**

    - **Name**

    - **Policy type**

    - **Start date of publishing preparation period**

    - **End date of publishing preparation period**

    - **Latest publishing date**

    - **Start date of approval period**

    - **End date of approval period**

    - **Confirmation duration** if the policy is of the **Confirmation required** type

- **Policy review task**:

  - **Review frequency** if the policy is marked as review-relevant.

  - **Event-driven task allowed** if the policy is marked as review-relevant.

  - **Time limit for task processing** if the policy is marked as review-relevant.

    (This attribute is not mandatory if the **Review frequency** attribute has the value **Event-driven**.)

  - **Start date** if the policy is marked as review-relevant.

    (This attribute is not mandatory if the **Review frequency** attribute has the value **Event-driven**.)

9   What verifications are defined for questionnaire templates?

This description relates to the default definition of the configuration file and reports.

REPORT NAME

Verify semantics of questionnaire templates

VERIFICATIONS TO BE PERFORMED

The report verifies whether:

- the **Synchronize ARCM** attribute is set to **true**. Only questionnaire templates for which this attribute is activated are considered.

- the mandatory attributes for the following objects are specified:

    - **Questionnaire template**:

        - **Name**

    - **Section**:

        - **Name**

    - **Question**:

        - **Question text** and

        - **Question type**:

            - **Single choice** or

            - **Multiple choice** or

            - **Text** or

            - **Numerical (integer)** or

            - **Numerical (floating point number)** or

            - **Date** or

            - **Date range**

        If the question type is **Single choice** or **Multiple choice**, then either an option set or at least one answer options must be assigned (mandatory fields).

        If the **Text**, **Numerical**, **Date**, or **Date range** question type is selected, the **Evaluation by reviewer** field becomes mandatory. If the **Evaluation by reviewer** attribute is set to **Yes**, then either an option set or an answer option must be assigned (mandatory fields).

        Several answer options or one option set can be assigned to a question. You cannot simultaneously assign answer options and an option set. The respective assignment must be removed before another one can be added.

- **Option set**:
    - **Name**
- **Answer option**:
    - **Answer**

- a question only occurs once in a section. It is, however, possible to use a question in different sections.

- an option set is always assigned at least one answer option.

- all connected survey schedulers are connected to at least one interviewee group and precisely one survey reviewer group.

- all connected survey schedulers are connected to a maximum of one survey manager group (the assignment is not mandatory).

- the mandatory attributes for these survey schedulers are specified:

    - **Frequency**

    - **Start date**

        (This attribute is not mandatory if the **Frequency** attribute has the value **Event-driven**.)

    - **Time limit for execution in days**

        (This attribute is not mandatory if the **Frequency** attribute has the value **Event-driven**.)

10 What verifications are defined for risks?

This description relates to the default definition of the configuration file and reports.

REPORT NAME

Verify semantics of risks

VERIFICATIONS TO BE PERFORMED

The report verifies whether:

- the required attributes are set:
    - **Name**
- the **Synchronize ARCM** attribute is set to **true**. Only risks for which this attribute is activated are considered.
- a risk is connected to no more than one risk manager group.
- the risks are unique within the modeled business controls diagrams.
- a risk has an occurrence in no more than one business controls diagram.
- the **Risk Management-relevant** attribute is selected. If so, the following mandatory attributes and conditions are checked:
    - **Assessment frequency**
    - **Time limit for execution in days**

      (This attribute is not mandatory if the **Assessment frequency** attribute has the value **Event-driven**.)
    - **Start date of risk assessments**

      (This attribute is not mandatory if the **Assessment frequency** attribute has the value **Event-driven**.)
- the risk is assigned a single risk owner group and a single risk reviewer group.

11 What verifications are defined for control test definitions?

This description relates to the default definition of the configuration file and reports.

REPORT NAME

Verify semantics of control test definitions

VERIFICATIONS TO BE PERFORMED

The report verifies whether:

- the required attributes are set:
    - **Name**
  - **Test type**:
    - **Test of design** and/or
    - **Test of effectiveness** and
  - Test frequency and
  - **Time limit for execution in days** (the value must be between 1 and 365) and

    (This attribute is not mandatory if the **Task frequency** attribute has the value **Event-driven**.)

  - **Start date of control test definition** and

    (This attribute is not mandatory if the **Task frequency** attribute has the value **Event-driven**.)

  - **Length of control period**.
- the control test definitions are unique within the modeled business controls diagram.
- a control test definition has an occurrence in no more than one business controls diagram.
- the control test definitions are each connected to precisely one tester group and one reviewer group, and then only if each group member is assigned to only one of the two groups.
- the control test definitions are each connected to a maximum of one test manager group (the group assignment is not mandatory)
- the control test definitions are each connected to precisely one organizational unit. Assignment to the organizational hierarchy is required in ARIS Risk & Compliance Manager.
- the tester group connected to the control test definition is also connected to a single element of the tester hierarchy.

- the **Event-driven control tests allowed** attribute is set to **true**, when the value **Event-driven** is set for the test frequency.

- a control test definition is connected to precisely one control for which the **Synchronize ARCM** attribute is specified.

12 What verifications are defined for user groups?

This description relates to the default definition of the configuration file and reports.

REPORT NAME

Verify semantics of user groups

VERIFICATIONS TO BE PERFORMED

The report verifies whether:

- the required attributes are set:
    - **Name**
- an object of the **Role** type is connected to more than one object of the **Role** type. A group can only have a single role in ARIS Risk & Compliance Manager. The report does not verify whether a group is connected to precisely one role, or whether a user group is connected to the **Tester** role with exactly one hierarchy element of the **Tester** type.

13   What verifications are defined for users?

This description relates to the default definition of the configuration file and reports.

REPORT NAME

Verify semantics of users

VERIFICATIONS TO BE PERFORMED

The report verifies whether:

- the required attributes are set:
    - **Login** and
    - **First name** and
    - **Last name** and
    - **E-mail address**
- the user name consists of alphanumeric characters and period (**.**), hyphen (**-**) or underscore (**_**) only.

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