



ARIS Risk & Compliance Manager

CONTROL-BASED TEST AND SIGN-OFF MANAGEMENT CONVENTIONS

Version 10.0 - Service Release H

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This document applies to ARIS Risk & Compliance Manager Version 10.0 and to all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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1 Introduction

The documentation of business processes and functions using models in ARIS brings a variety of advantages (consistency, reduction of complexity, reusability, potential for evaluation, integrity, etc.).

This is however only possible if the methodological and functional rules and conventions for modeling in ARIS Architect are adhered to. Only then can all modeled data be transferred to ARIS Risk & Compliance Manager and reused there.

2 Text conventions

Menu items, file names, etc. are indicated in texts as follows:

- Menu items, keyboard shortcuts, dialogs, file names, entries, etc. are shown in **bold**.
- Content input that you specify is shown in **<bold and within angle brackets>**.
- Single-line example texts are separated at the end of a line by the character ↵, e.g., a long directory path that comprises multiple lines.
- File extracts are shown in the following font:

`This paragraph contains a file extract.`

3 Content of document

The sections below explain the standards relating to the usage of descriptive views, model types, object types, relationship and connection types, and attributes.

3.1 Objectives and scope

Objective: Specification of modeling guidelines

Not included in this manual: User documentation

4 ARIS conventions

4.1 Modeling levels and model types

4.1.1 Overview of modeling levels and their model types

The figure below shows the process modeling levels and the suggested process model types to be used within them.

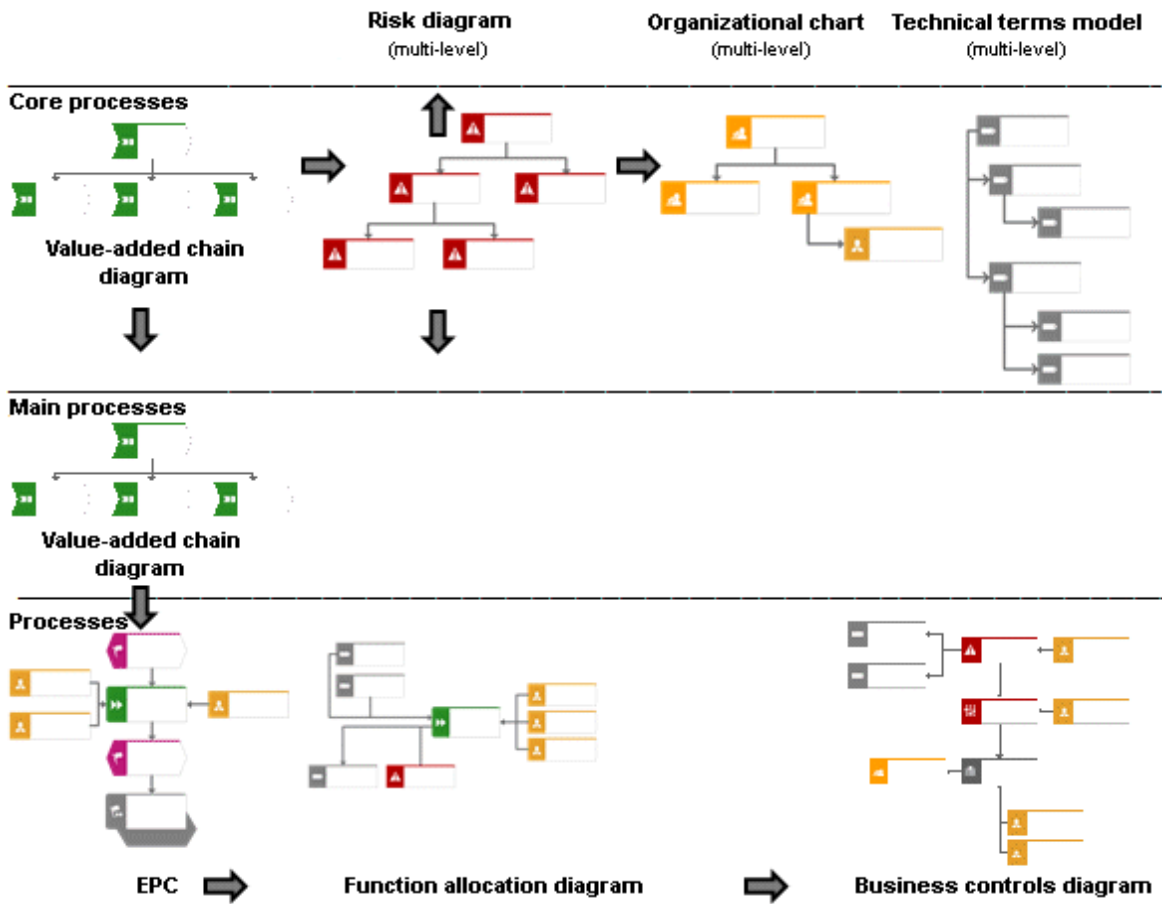


Figure 1: Modeling levels and their model types

4.1.2 Identification of controls and processes

4.1.2.1 Process models

The following process models can be used for setting up the process landscape/process hierarchy.

| Model name | Model type number |
|---------------------------------------|-------------------|
| Value-added chain diagram | 12 |
| EPC | 13 |
| Function allocation diagram | 14 |
| PCD | 18 |
| EPC (material flow) | 50 |
| PCD (material flow) | 51 |
| EPC (column display) | 134 |
| EPC (row display) | 140 |
| EPC (table display) | 154 |
| EPC (horizontal table display) | 173 |
| Enterprise BPMN collaboration diagram | 272 |
| Enterprise BPMN process diagram | 273 |

The following chapters include a modeling example of the process landscape.

4.1.2.2 Process modeling at level 1 – Value-added chain diagram (VACD)

The overview process model is the central model at level 1. This is modeled using the **value-added chain diagram** model type. This core process overview is used as the entry model.

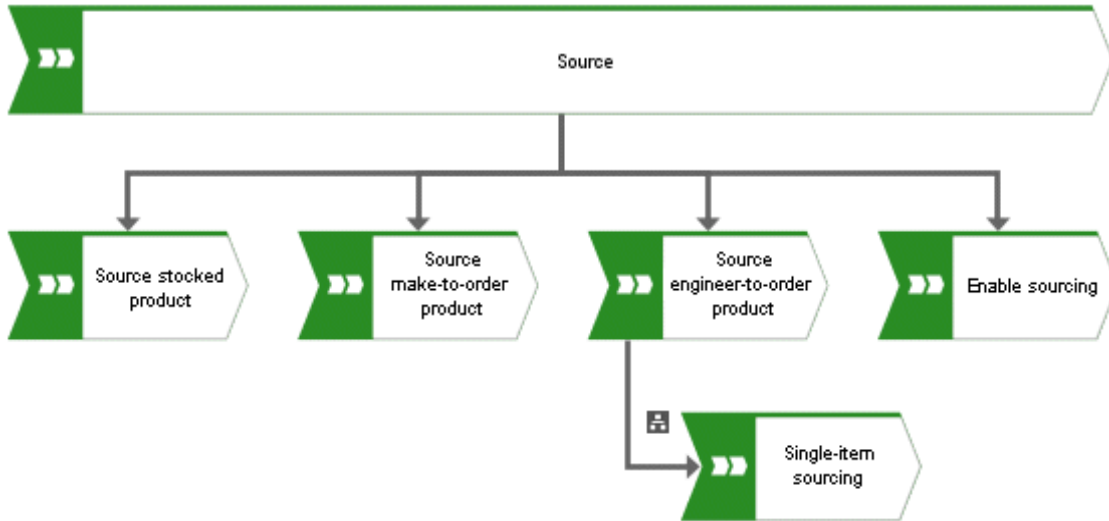


Figure 2: Level 1 – Value-added chain diagram

The object type used is **Function** (OT_FUNC). The hierarchy between the objects is represented by the **is process-oriented superior** or **is process-oriented subordinate** connection. In ARIS Risk & Compliance Manager, only a tree structure for hierarchies is allowed. Therefore, each function can only have one superior function. The following model types can be assigned to an object type in a VACD:

| Object type | Assigned model type |
|------------------------------|-----------------------------|
| Function [Value-added chain] | VACD |
| Function [Value-added chain] | Function allocation diagram |

Thus, a hierarchy element is created in ARIS Risk & Compliance Manager for each relevant function. Exception: The top hierarchy element already exists in ARIS Risk & Compliance Manager.

4.1.2.2.1 Function (ARIS) to Process hierarchy element (ARCM) allocations

The following allocations are applicable for the **Function** object:

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|-------------|------------------------|--------------------------|----|-------------|----------------|--|
| Function | Name | AT_NAME | X | HIERARCHY | name | |
| | | | | HIERARCHY | isroot | True only for the top hierarchy element. |
| | | | | HIERARCHY | hnumber | Not relevant for the process hierarchy. |
| | | | | HIERARCHY | type | Process hierarchy (value 4) |
| Function | Description/Definition | AT_DESC | | HIERARCHY | description | |
| | | | X | HIERARCHY | status | Status is true (if active) |
| Function | Sign-off-relevant | AT_AAM_SIGN_OFF_RELEVANT | X | HIERARCHY | signoff | |
| Function | Model link | AT_AAM_MOD_LINK | | HIERARCHY | modellink | |
| | | | | HIERARCHY | modelguid | GUID of the model containing an occurrence of the function. The first available process model (EPC, VACD, etc.) is selected. |
| | | | | HIERARCHY | model_name | Name of the model (see above) |

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|-------------|----------------|-----------------|----|-------------|----------------|---------------------------------------|
| Function | Object link | AT_AAM_OBJ_LINK | | HIERARCHY | objectlink | |
| Function | GUID of object | | | HIERARCHY | objectguid | |
| | | | | HIERARCHY | children | Subordinate hierarchy element |
| | | | | HIERARCHY | so_owner | Associated sign-off owner group |
| | | | | HIERARCHY | tester | Not relevant for this hierarchy type. |

*The **M** column specifies whether the attribute is a mandatory field.

4.1.2.3 Process modeling at level 2 – Value-added chain diagram (VACD)

The value-added chain diagram is used as the model at level 2. Level 2 is used to represent the main processes and to map the context of the sub-processes located at level 3.

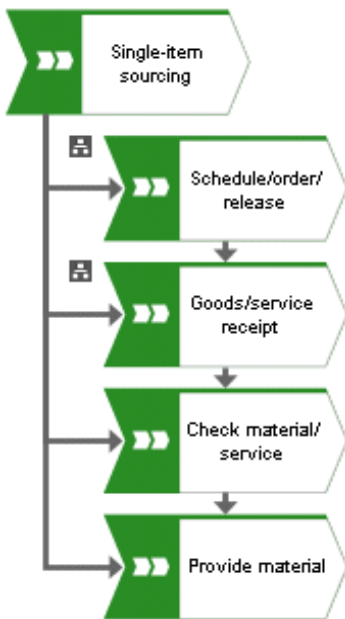


Figure 3: Level 2 – Value-added chain diagram

The same conventions apply as for the core processes modeled as a value-added chain.

The following model types can be assigned to an object type in the VACD:

| Object type | Assigned model type |
|-------------|-----------------------------|
| Function | EPC |
| Function | Function allocation diagram |

4.1.2.4 Process and control modeling at level 3 - Event-driven process chain (EPC)

You can describe a company's processes using an EPC. It is based on the logical and chronological sequence of the activities to be carried out. In addition, a sequence of functions and resulting events is used. These lean processes can be supplemented by additional objects (organizational units, positions (roles), application systems, etc.) containing extended information. Thus for example, a control with the **is carried out at** connection can be linked directly with a function in an EPC.

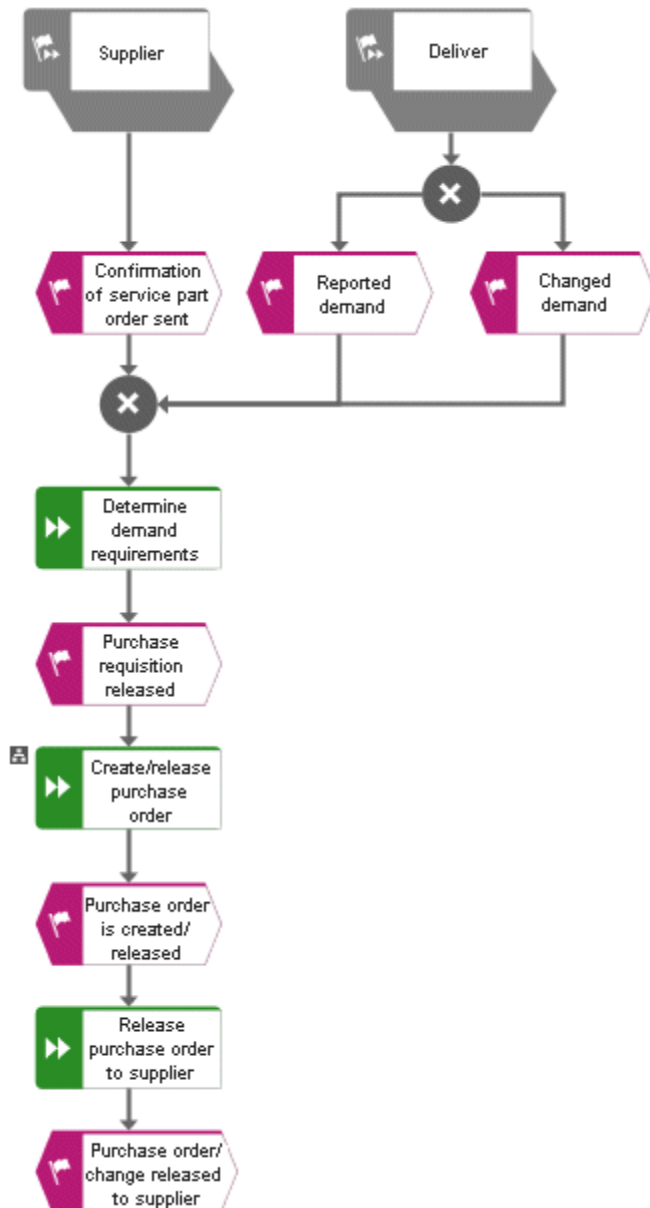


Figure 4: Level 3 – Event-driven process chain

The following model types can be assigned to an object type in an EPC:

| Object type | Assigned model type |
|-----------------------------|-----------------------------|
| Function | EPC |
| Function | Function allocation diagram |
| Control (OT_FUNC, ST_CONTR) | EPC |
| Control (OT_FUNC, ST_CONTR) | Business controls diagram |

LEVEL 3 – FUNCTION ALLOCATION DIAGRAM (FAD)

EPCs can also be modeled as lean EPCs – i.e. without organizational units, positions and application systems. The relationships between these additional objects and a function are then modeled in a function allocation diagram, which is assigned to the function. The object and symbol types in the function allocation diagram are those that change a lean EPC into an extended EPC. These are:

- Function
- Position
- Organizational unit
- Organizational unit type
- Group
- Role
- Internal person
- Application system
- Application system type
- Information carrier (file, document)
- Control (object type: OT_FUNC, symbol type: ST_CONTR)

4.1.3 Documentation of additional hierarchies in the company

Only a tree structure is allowed for all hierarchies to be transferred to ARIS Risk & Compliance Manager. This means that each element in the hierarchy can have only one superior item.

4.1.3.1 Regulation hierarchy

The regulation hierarchy is modeled in the technical terms model in ARIS using the **Technical term** object (OT_TECH_TRM). The **Regulations** attribute can be used to uniquely identify regulations (API name: AT_AAM_ANNUAL_ACCOUNTS_ITEM). The hierarchy between the objects is represented by the **has** connection.

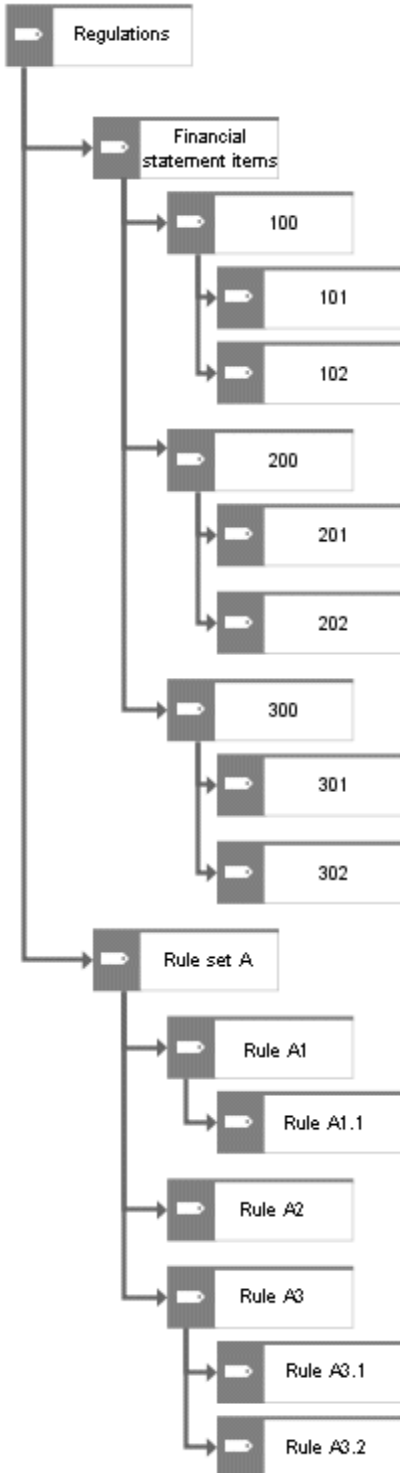


Figure 5: Regulation hierarchy structure

4.1.3.1.1 Technical term (ARIS) to Regulation element (ARCM) allocations

The following attribute allocations are applicable for the **Technical term** object:

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|----------------|------------------------|--------------------------|----|-------------|----------------|---|
| Technical term | Name | AT_NAME | X | HIERARCHY | name | |
| | | | | HIERARCHY | isroot | True only for the top hierarchy element. |
| Technical term | Short description | AT_SHORT_DESC | | HIERARCHY | hnumber | |
| | | | | HIERARCHY | type | Regulation hierarchy (Value = 2) |
| Technical term | Description/Definition | AT_DESC | | HIERARCHY | description | |
| | | | X | HIERARCHY | status | Status is true (if active) |
| Technical term | Sign-off-relevant | AT_AAM_SIGN_OFF_RELEVANT | X | HIERARCHY | signoff | |
| Technical term | Model link | AT_AAM_MOD_LINK | | HIERARCHY | modellink | |
| | | | | HIERARCHY | modelguid | GUID of the model containing an occurrence of the technical term. The first available technical term model is selected. |
| | | | | HIERARCHY | model_name | Name of the model (see above) |

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|----------------|----------------|-----------------|----|-------------|----------------|---------------------------------------|
| Technical term | Object link | AT_AAM_OBJ_LINK | | HIERARCHY | objectlink | |
| Technical term | GUID of object | | | HIERARCHY | objectguid | |
| | | | | HIERARCHY | children | Subordinate hierarchy element |
| | | | | HIERARCHY | so_owner | Associated sign-off owner group |
| | | | | HIERARCHY | tester | Not relevant for this hierarchy type. |

*The **M** column specifies whether the attribute is a mandatory field.

4.1.3.2 Tester hierarchy

The tester hierarchy is modeled in the organizational chart in ARIS using the **Organizational unit** object (OT_ORG_UNIT). The hierarchy between the objects is represented by the **is superior** connection.

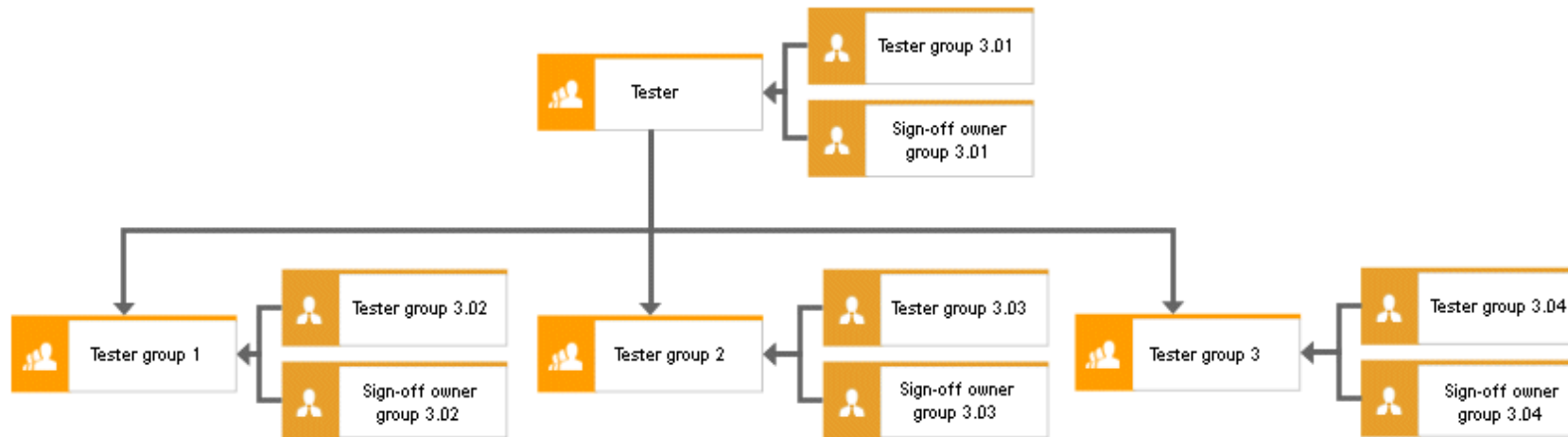


Figure 6: Tester hierarchy structure

A tester hierarchy element is therefore created in ARIS Risk & Compliance Manager for each organizational unit (exception: the top hierarchy element already exists in ARIS Risk & Compliance Manager). At present, each hierarchy element can only be assigned to one user group (Page 22). Thus, for the above example, the tester hierarchy elements **Tester**, **Tester group 1**, **Tester group 2** and **Tester group 3** are created in ARIS Risk & Compliance Manager. **Tester** is superior to the other hierarchy elements.

4.1.3.2.1 Organizational unit (ARIS) to Tester hierarchy element (ARCM) allocations

The following attribute allocations apply to the **Organizational unit** object:

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|---------------------|------------------------|--------------------------|----|-------------|----------------|---|
| Organizational unit | Name | AT_NAME | X | HIERARCHY | name | |
| | | | | HIERARCHY | isroot | True only for the top hierarchy element. |
| | | | | HIERARCHY | hnumber | Not relevant for the tester hierarchy. |
| | | | | HIERARCHY | type | Tester hierarchy (value = 1) |
| Organizational unit | Description/Definition | AT_DESC | | HIERARCHY | description | |
| | | | X | HIERARCHY | status | Status is true (if active) |
| Organizational unit | Sign-off-relevant | AT_AAM_SIGN_OFF_RELEVANT | X | HIERARCHY | signoff | |
| Organizational unit | Model link | AT_AAM_MOD_LINK | | HIERARCHY | modellink | |

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|---------------------|----------------|-----------------|----|-------------|----------------|--|
| | | | | HIERARCHY | modelguid | GUID of the model containing an occurrence of the organizational unit. The first available organizational chart is selected. |
| | | | | HIERARCHY | model_name | Name of the model (see above) |
| Organizational unit | Object link | AT_AAM_OBJ_LINK | | HIERARCHY | objectlink | |
| Organizational unit | GUID of object | | | HIERARCHY | objectguid | |
| | | | | HIERARCHY | children | Subordinate hierarchy unit |
| | | | | HIERARCHY | so_owner | Associated sign-off owner group |
| | | | | HIERARCHY | tester | Associated tester groups |

*The **M** column specifies whether the attribute is a mandatory field.

4.1.3.3 Organizational hierarchy

The organizational hierarchy is modeled in the organizational chart in ARIS using the **Organizational unit** object (OT_ORG_UNIT). The **Group** (OT_GRP), **Position** (OT_POS) and **Location** (OT_LOC) objects can be also used. The hierarchy between the objects is represented by the **is superior** connection.

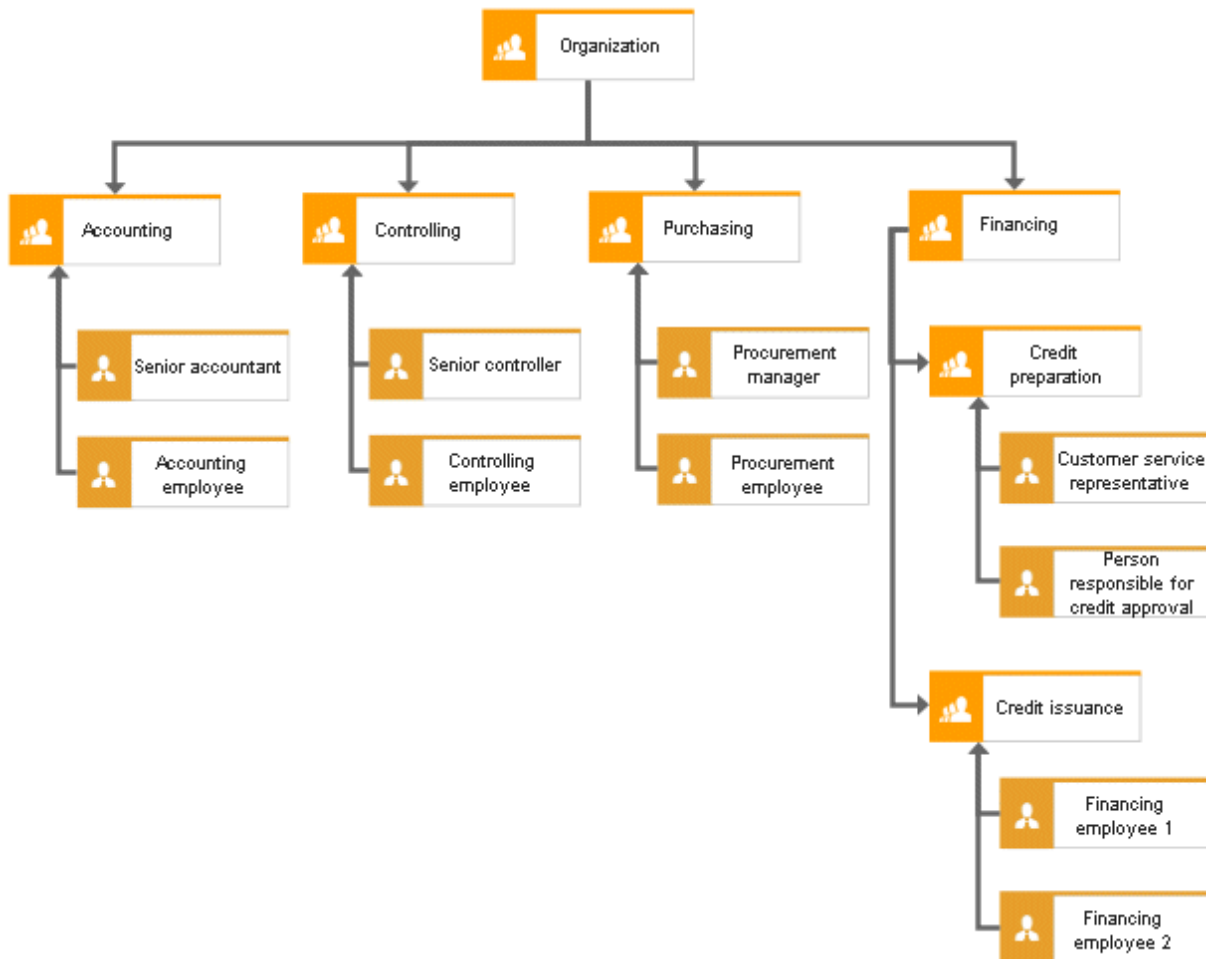


Figure 7: Organizational hierarchy structure

Thus, for each organizational unit, an organizational hierarchy element is created. Exception: The top hierarchy element already exists in ARIS Risk & Compliance Manager.

Thus, for the above example, the organizational hierarchy elements **Organization**, **Accounting**, **Controlling** and **Purchasing** are created in ARIS Risk & Compliance Manager. **Organization** is superior to the other hierarchy elements.

4.1.3.3.1 Organizational unit (ARIS) to Organizational hierarchy element (ARCM) allocations

The following attribute allocations apply to the **Organizational unit** object:

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|---------------------|------------------------|--------------------------|----|-------------|----------------|---|
| Organizational unit | Name | AT_NAME | X | HIERARCHY | name | |
| | | | | HIERARCHY | isroot | True only for the top hierarchy element. |
| | | | | HIERARCHY | hnumber | Not relevant for the organizational hierarchy. |
| | | | | HIERARCHY | type | Organizational hierarchy (value = 3) |
| Organizational unit | Description/Definition | AT_DESC | | HIERARCHY | description | |
| | | | X | HIERARCHY | status | Status is true (if active) |
| Organizational unit | Sign-off-relevant | AT_AAM_SIGN_OFF_RELEVANT | X | HIERARCHY | signoff | |
| Organizational unit | Model link | AT_AAM_MOD_LINK | | HIERARCHY | modellink | |

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|---------------------|----------------|-----------------|----|-------------|----------------|--|
| | | | | HIERARCHY | modelguid | GUID of the model containing an occurrence of the organizational unit. The first available organizational chart is selected. |
| | | | | HIERARCHY | model_name | Name of the model (see above) |
| Organizational unit | Object link | AT_AAM_OBJ_LINK | | HIERARCHY | objectlink | |
| Organizational unit | GUID of object | | | HIERARCHY | objectguid | |
| | | | | HIERARCHY | children | Subordinate hierarchy elements |
| | | | | HIERARCHY | so_owner | Associated sign-off owner group |
| | | | | HIERARCHY | tester | Not relevant for the organizational hierarchy. |

*The **M** column specifies whether the attribute is a mandatory field.

4.1.3.4 Risk hierarchy (optional)

The risk hierarchy is modeled in the risk diagram in ARIS. The categorization of risks (OT_RISK) can be carried out here. Risks can be made subordinate to categories (OT_RISK_CATEGORY) and the categories can in turn be made subordinate to other categories using the **encompasses** or **contains** relationship. This is used for structuring, but is only transferred in connection with the **Operational Risk Management** component.

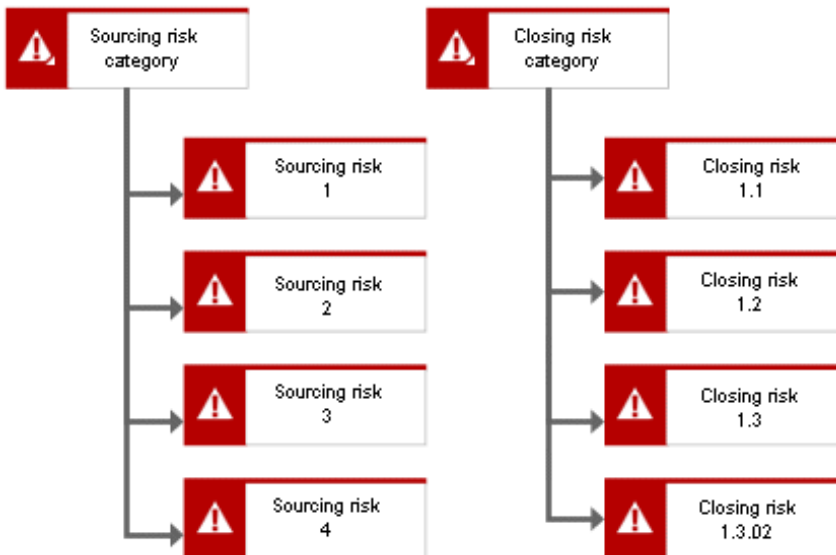


Figure 8: Risk hierarchy structure

4.1.4 Create users and user groups

Users and user groups are modeled in an organizational chart in ARIS Architect using the **Person** (OT_PERS) and **Role** (OT_PERS_TYPE) objects.



Figure 9: Structure of users/user groups

The superior role (**Sign-off manager_2**) determines the role held by the subordinate roles in ARIS Risk & Compliance Manager. Both roles are connected to one another with the **is generalization of** connection. **Sign-off manager group 2.01** is thus, a generalization of **Sign-off manager_2**. The name of the superior role defines the role and level of the group to be created. <role>_<level>, i.e.: Sign-off manager_2 > role: sign-off manager, level: 2 (or environment-specific). No user group is generated in ARIS Risk & Compliance Manager for the superior role (in this case, Sign-off manager_2).

The following applies to the various role levels:

- Role level 1: cross-environment
 - The privileges assigned to the user group based on its role are valid for all environments assigned to the user group.
- Role level 2: environment-specific
 - The privileges assigned to the user group based on its role are valid for the environment, in which the user group was created.
- Role level 3: object-specific
 - The privileges assigned to the user group based on its role are valid for the relevant objects of the current environment, in which the user group was created.

For the above example, the **Sign-off manager group 2.01** user group is generated in ARIS Risk & Compliance Manager with the **Sign-off manager** role and level **2** (i.e., environment-wide privileges). In addition, a user with the user ID **SOM_01** is generated.

MAPPING ROLE NAME (ARCM) TO ROLE (ARIS)

The following allocations are applicable for the user groups in ARIS Risk & Compliance Manager and the naming to be used in ARIS Architect. Further roles are described in the other convention manuals.

| Role (ARCM) | Role (ARIS) | Role level |
|----------------------------|-------------------------|-------------------|
| roles.testauditor | Test auditor | Level 1, 2, and 3 |
| roles.testauditorexternal | Test auditor external | Level 1 and 2 |
| roles.deficiencyauditor.l1 | Deficiency auditor (L1) | Level 1 and 2 |
| roles.deficiencyauditor.l2 | Deficiency auditor (L2) | Level 1 and 2 |
| roles.deficiencyauditor.l3 | Deficiency auditor (L3) | Level 1 and 2 |
| roles.deficiencymanager.l1 | Deficiency manager (L1) | Level 1, 2, and 3 |
| roles.deficiencymanager.l2 | Deficiency manager (L2) | Level 1, 2, and 3 |
| roles.deficiencymanager.l3 | Deficiency manager (L3) | Level 1, 2, and 3 |
| roles.groupusermanager | User/User group manager | Level 1 and 2 |
| roles.hierarchymanager | Hierarchy manager | Level 1 and 2 |
| roles.riskmanager | Risk manager | Level 1, 2, and 3 |
| roles.controlmanager | Control manager | Level 1, 2, and 3 |
| roles.signoffmanager | Sign-off manager | Level 2 and 3 |
| roles.signoffreviewer | Sign-off reviewer | Level 3 only |
| roles.signoffowner | Sign-off owner | Level 3 only |
| Roles.testmanager | Test manager | Level 1, 2, and 3 |
| roles.testreviewer | Test reviewer | Level 3 only |
| roles.tester | Tester | Level 3 only |
| roles.issueauditor | Issue auditor | Level 1 and 2 |
| roles.issuemanager | Issue manager | Level 1 and 2 |
| roles.incidentauditor | Incident auditor | Level 1 and 2 |
| roles.incidentmanager | Incident manager | Level 1 and 2 |
| roles.incidentreviewer | Incident reviewer | Level 3 only |
| roles.incidentowner | Incident owner | Level 3 only |
| roles.lossauditor | Loss auditor | Level 1 and 2 |
| roles.lossmanager | Loss manager | Level 1 and 2 |
| roles.lossreviewer | Loss reviewer | Level 3 only |
| roles.lossowner | Loss owner | Level 3 only |

4.1.4.1 Role to person allocations

ROLE (ARIS) TO USER GROUP (ARCM) ALLOCATIONS

The following allocations are applicable for the **Role** (user group) object:

| ARIS attribute | API name | ARCM attribute | M* | Notes |
|----------------------------|----------|----------------|----|---|
| Name | AT_NAME | name | X | The name of a user group is limited to 250 characters. |
| Description/ Definition | AT_DESC | description | - | |
| Role | - | role | X | The values for role and role level are determined as described above. |
| Role level | - | rolelevel | X | |
| Users | - | groupmembers | - | Users are determined by the performs connection between the person and the role. |

*The **M** column specifies whether the attribute is a mandatory field.

PERSON (ARIS) TO USER (ARCM) ALLOCATIONS

The following allocations are applicable for the **Person** (user) object:

| ARIS attribute | API name | ARCM attribute | M* | Notes |
|----------------------------|---------------|----------------|----|---|
| Login | AT_LOGIN | Userid | X | The user ID of a user is limited to 250 characters. |
| First name | AT_FIRST_NAME | firstname | X | |
| Last name | AT_LAST_NAME | lastname | X | |
| | | name | - | Is a combination of the last and first name. |
| Description/ Definition | AT_DESC | description | - | |
| E-mail address | AT_EMAIL_ADDR | email | X | |
| Telephone number | AT_PHONE_NUM | phone | - | |
| | | clients | - | The Environments field is identified by the environment into which data is imported. |
| | | substitutes | - | The Substitutes field is only maintained manually. |

*The **M** column specifies whether the attribute is a mandatory field.

4.1.5 Analysis of controls and risks, and derivation of the tests

For the controls identified in the processes, the associated risks and test definitions including responsibilities can be defined in the business controls diagram. In addition, effects on the company's hierarchies can be documented, e.g., which control affects which balance sheet item.

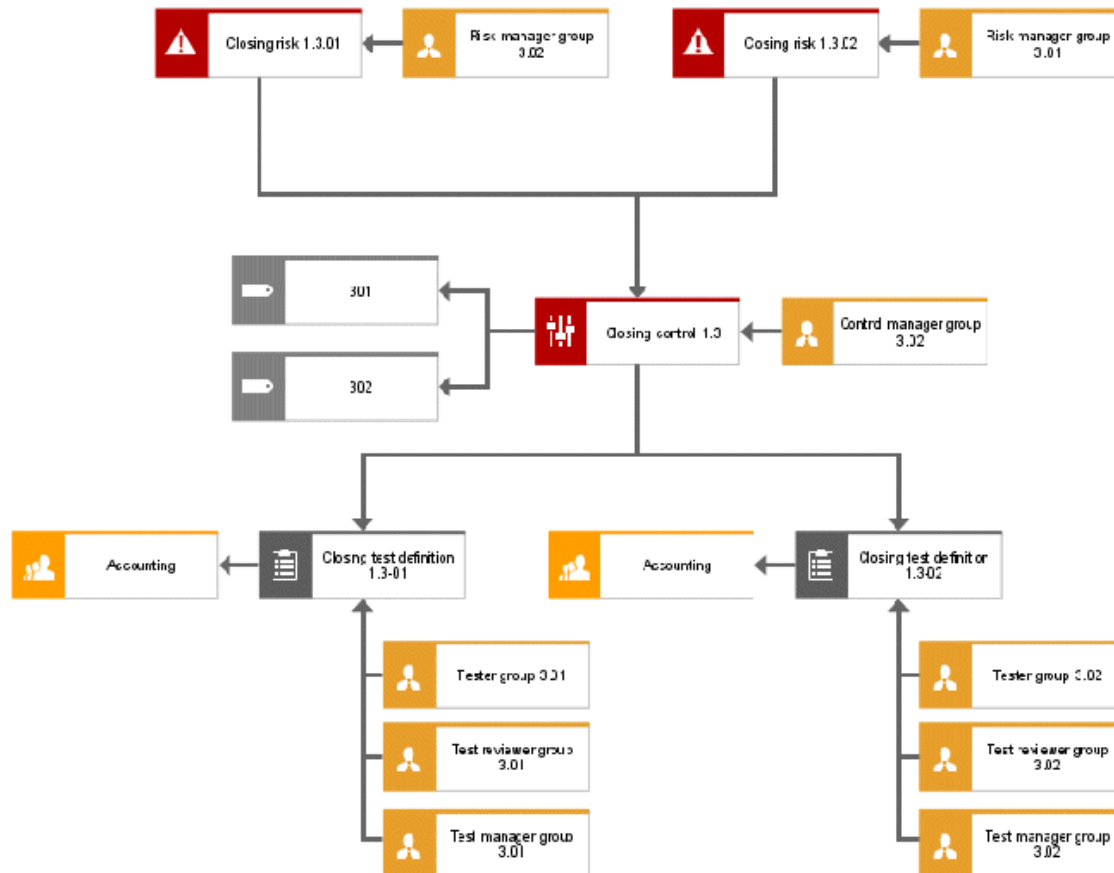


Figure 10: Business controls diagram structure

Assignment of a risk manager group, test manager group, and control manager group is optional.

RELATIONSHIPS BETWEEN RISK OBJECT AND ASSOCIATED OBJECTS

The following connections are relevant between the objects in the business control diagram:

| Object | Connection | Object | Notes |
|-----------------|--------------------------------|---------------------|--|
| Control | affects | Technical term | This connection creates the relationship to the regulations. |
| Control | is monitored by | Test definition | This connection creates the relationship to the test definition. |
| Control | is technically responsible for | Role | This connection creates the relationship to the control manager. |
| Risk | is technically responsible for | Role | This connection creates the relationship to the risk manager. |
| Risk | is reduced by | Control | This connection creates the relationship to the control. |
| Test definition | affects | Organizational unit | This connection creates the relationship to the organizational unit concerned. |
| Test definition | is assigned to | Role | This connection creates the relationship to the tester, test reviewer and to the test manager. |

4.1.5.1 Control

The control is modeled in ARIS using the **Function** object (OT_FUNC) and the default symbol **Control** (ST_CONTR). A control is created in ARIS Risk & Compliance Manager for each control for which the **Synchronize ARCM** attribute is set. A control must be uniquely defined and cannot be reused.

FUNCTION (CONTROL) (ARIS) TO CONTROL (ARCM) ALLOCATION

The following allocations are applicable for the Function (control) object:

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|-------------|-------------------|-----------------------|----|-------------|-------------------|---|
| Control | Name | AT_NAME | X | control | name | |
| Control | Control ID | AT_AAM_CTRL_ID | | control | control_id | |
| | | | | control | manager_group | Determined by the connection to the role and saves a corresponding link to the control manager in ARIS Risk & Compliance Manager. |
| Control | Control frequency | AT_AAM_CTRL_FREQUENCY | X | control | control_frequency | |

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|-------------|-------------------|--|----|-------------|-------------------|--|
| Control | Control execution | AT_AAM_CTRL_EXECUTION_ MANUAL AT_AAM_CTRL_EXECUTION_ IT | X | control | control_execution | The enumeration is set in ARIS Risk & Compliance Manager when the values are true. |
| Control | Effect of control | AT_AAM_CTRL_EFFECT | X | control | control_effect | |
| Control | COSO component | AT_AAM_COSO_COMPONENT_ CTRL_ENVIRONMENT AT_AAM_COSO_COMPONENT_ RISK_ASSESSMENT AT_AAM_COSO_COMPONENT_ CTRL_ACTIVITIES AT_AAM_COSO_COMPONENT_ INFO_COMMUNICATION AT_AAM_COSO_COMPONENT_ MONITORING | | control | control_type | The enumeration is set in ARIS Risk & Compliance Manager when the values are true. |
| Control | Control activity | AT_AAM_CTRL_ACTIVITY | X | control | controls | |
| Control | Control objective | AT_AAM_CTRL_OBJECTIVE | | control | control_objective | |
| Control | Key control | AT_AAM_KEY_CTRL | X | control | key_control | |

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|-------------|----------------|---|----|-------------|------------------|---|
| Control | Assertions | AT_AAM_ASSERTIONS_EXIST_ OCCURRENCE AT_AAM_ASSERTIONS_ COMPLETENESS AT_AAM_ASSERTIONS_ RIGHTS_OBLIGATIONS AT_AAM_ASSERTIONS_ VALUATION_ALLOCATION AT_AAM_ASSERTIONS_ PRESENTATION_DISCLOSURE AT_AAM_ASSERTIONS_NA | X | control | assertions | The enumeration is set in ARIS Risk & Compliance Manager when the values are true. A dependency of values exists. The first 5 values cannot occur in combination with the last entry. |
| | | | | control | control_function | Is identified via the connection to the function. A corresponding link to the process hierarchy element in ARIS Risk & Compliance Manager is saved. |

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|-------------|----------------|----------|----|-------------|---------------------|--|
| | | | | control | testdefinitions | Is identified via the connection to the test definition. A corresponding link to the test definition in ARIS Risk & Compliance Manager is saved. |
| | | | X | control | financial_statement | Is identified via the connection to the technical term. A corresponding link to the regulation hierarchy element in ARIS Risk & Compliance Manager is saved. |

*The **M** column specifies whether the attribute is a mandatory field.

4.1.5.2 Risk

Risks are modeled in ARIS using the **Risk** object (OT_RISK). Only those risks are relevant for synchronization with ARIS Risk & Compliance Manager that are modeled at a control for which the **Synchronize ARCM** attribute is set. It is possible to reuse risks.

RISK (ARIS) TO RISK (ARCM) ALLOCATIONS

The following allocations are applicable for the **Risk** object:

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|-------------|------------------------|---|----|-------------|----------------|--|
| Risk | Name | AT_NAME | X | risk | name | |
| Risk | Risk ID | AT_AAM_RISK_ID | | risk | risk_id | |
| Risk | Risk types | AT_AAM_RISK_TYPE_ FINANCIAL_REPORT AT_AAM_RISK_TYPE_ COMPLIANCE AT_AAM_RISK_TYPE_ OPERATIONS AT_AAM_RISK_TYPE_ STRATEGIC | X | risk | risktype | The enumeration is set in ARIS Risk & Compliance Manager when the values are true. |
| Risk | Description/Definition | AT_DESC | X | risk | description | |
| Risk | Impact | AT_AAM_IMPACT | X | risk | impact | |
| Risk | Probability | AT_AAM_PROBABILITY | X | risk | probability | |
| Risk | Risk catalog 1 | AT_AAM_RISK_CATALOG_1 | | risk | risk_catalog1 | |
| Risk | Risk catalog 2 | AT_AAM_RISK_CATALOG_2 | | risk | risk_catalog2 | |

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|-------------|--|-----------------------------|----|-------------|----------------|--|
| Risk | Title 1 and link 1 to title 4 and link 4 | AT_TITL1 and AT_EXT_1, etc. | | risk | documents | A document (O_10) is generated in ARIS Risk & Compliance Manager from the title and the link and is linked to the risk. |
| | | | | risk | controls | Is identified via the connection to the control. A corresponding link to the control in ARIS Risk & Compliance Manager is saved. |
| | | | | risk | manager_group | Is identified via the connection to the role. A corresponding link to the risk manager in ARIS Risk & Compliance Manager is saved. |

*The **M** column specifies whether the attribute is a mandatory field.

4.1.5.3 Test definition

The test definition is modeled in ARIS using the **Test definition** object (OT_TEST_DEFINITION). Only those test definitions are relevant for synchronization with ARIS Risk & Compliance Manager that are modeled at a control for which the **Synchronize ARCM** attribute is set.

TEST DEFINITION (ARIS) TO TEST DEFINITION (ARCM) ALLOCATION

The following allocations are applicable for the **Test definition** object:

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|-----------------|----------------|--|----|----------------|----------------|--|
| Test definition | Name | AT_NAME | X | testdefinition | name | |
| Test definition | Test activity | AT_AAM_TEST_ACTIVITY | X | testdefinition | testingsteps | |
| Test definition | Nature of test | AT_AAM_TEST_NATURE_INQUIRY AT_AAM_TEST_NATURE_OBSERVATION AT_AAM_TEST_NATURE_EXAMINATION AT_AAM_TEST_NATURE_REPERFORMANCE | X | testdefinition | test_nature | The enumeration is set in ARIS Risk & Compliance Manager when the values are true. |
| Test definition | Test type | AT_AAM_TEST_TYPE_DESIGN AT_AAM_TEST_TYPE_EFFECTIVENESS | X | testdefinition | test_type | The enumeration is set in ARIS Risk & Compliance Manager when the values are true. |
| Test definition | Test size | AT_AAM_TEST_SCOPE | X | testdefinition | testextend | |
| | | | X | testdefinition | owner_group | Is identified via the connection to the role using the Tester role. A corresponding link to the tester in ARIS Risk & Compliance Manager is saved. |

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|-----------------|----------------------------------|-------------------------------|----|----------------|--------------------------|--|
| Test definition | Event-driven test cases allowed | AT_EVENT_DRIVEN_TESTS_ALLOWED | X | testdefinition | event_driven_allowed | If true is set, the test-definition is used only for automated control tests. At the same time, the test frequency must be set to event-driven . |
| Test definition | Test frequency | AT_AAM_TEST_FREQUENCY | X | testdefinition | testfrequency | |
| Test definition | Time limit for execution in days | AT_AAM_TEST_DURATION | X | testdefinition | testduration | |
| Test definition | Start date of test definition | AT_AAM_TESTDEF_START_DATE | X | testdefinition | testdefinition_startdate | |
| Test definition | End date of test definition | AT_AAM_TESTDEF_END_DATE | | testdefinition | testdefinition_enddate | |
| Test definition | Length of control period | AT_AAM_TESTDEF_CTRL_PERIOD | X | testdefinition | control_period | |
| Test definition | Offset in days | AT_AAM_TESTDEF_OFFSET | X | testdefinition | offset | |

| ARIS object | ARIS attribute | API name | M* | ARCM object | ARCM attribute | Notes |
|-----------------|-------------------|-------------------------|----|----------------|--------------------|---|
| | | | X | testdefinition | reviewer_group | Is identified via the connection to the role using the Test reviewer role. A corresponding link to the test reviewer in ARIS Risk & Compliance Manager is saved. |
| | | | X | testdefinition | manager_group | Is identified via the connection to the role using the Test manager role. A corresponding link to the test manager in ARIS Risk & Compliance Manager is saved. |
| | | | X | testdefinition | effected_organunit | Is identified via the connection to the organizational unit, group, position, or location. A corresponding link to the relevant organizational unit in ARIS Risk & Compliance Manager is saved. |
| Test definition | Follow-up allowed | AT_AAM_TESTDEF_FOLLOWUP | X | testdefinition | isfollowup | |

*The **M** column specifies whether the attribute is a mandatory field.

4.1.5.4 General modeling conventions

Controls within the modeled business controls diagrams must be unique and can have an occurrence in not more than one business controls diagram. They can only be connected to precisely one function and at least one test definition.

A risk can have an occurrence in no more than one business controls diagram. A risk can be connected to at least one control for which the **Synchronize ARCM** attribute is specified.

A test definition must be unique within the modeled business controls diagram and can have an occurrence in no more than one of these diagrams. At the same time, a test definition can be connected to precisely one control for which the **Synchronize ARCM** attribute is specified.

4.1.5.5 Automated control testing

To carry out automated control tests per event enabling the **Event-driven test cases allowed** attribute must be set to **true**. Automated control testing can then be carried out ad-hoc, for example driven by an external event.

In addition, the **Event-driven** attribute value must be selected for the **Test frequency** attribute, in order to prevent the system from generating test cases during the year. This frequency is used only for processing ad-hoc tests.

4.1.6 Sign-off

4.1.6.1 Sign-off using process hierarchy

For sign-off, the relationship between the function and the sign-off owner group (role) is modeled in a value-added chain diagram. An example can be seen in the following figure.

The initial selection of functions relevant for synchronization is determined by the **Synchronize ARCM** attribute set on the **is carried out at** connection to the controls.



Figure 11: Allocation of function – Sign-off owner group

The **decides on** connection creates a link between a sign-off owner group (user group) and a process hierarchy element.

4.1.6.2 Sign-off using regulation hierarchy

For sign-off using the regulation hierarchy, the relationship between the regulations and the sign-off owner group is modeled in a function allocation diagram. The **is owner of** connection creates a link between the user group and a hierarchy element.

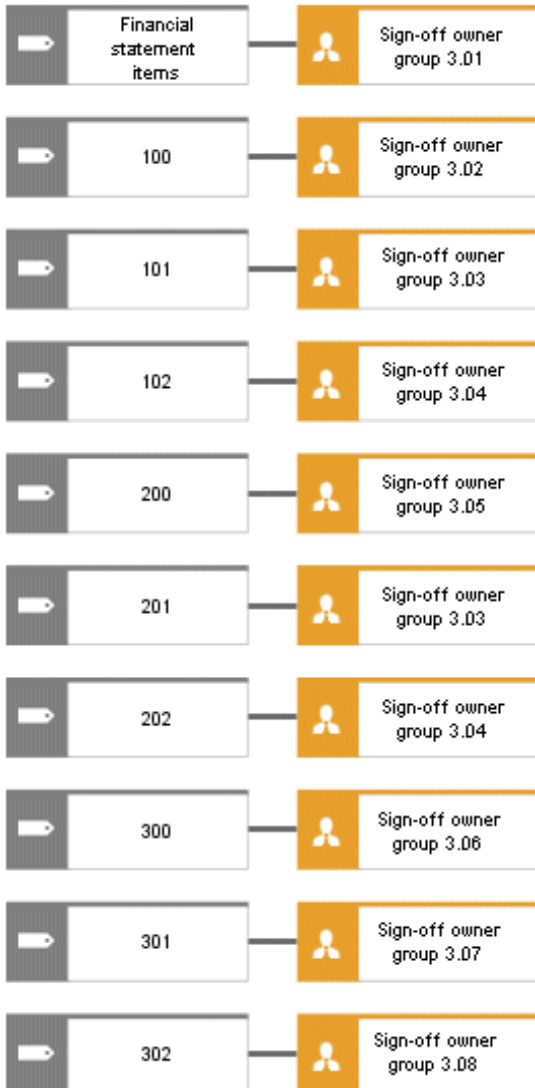


Figure 12: Allocation of regulations – Sign-off owner group

4.1.6.3 Sign-off using tester hierarchy

For sign-off using the tester hierarchy, the relationship between the organizational unit and the sign-off owner group is modeled in the organizational chart of the tester hierarchy. The **belongs to** connection creates a link between the user group and the hierarchy element.

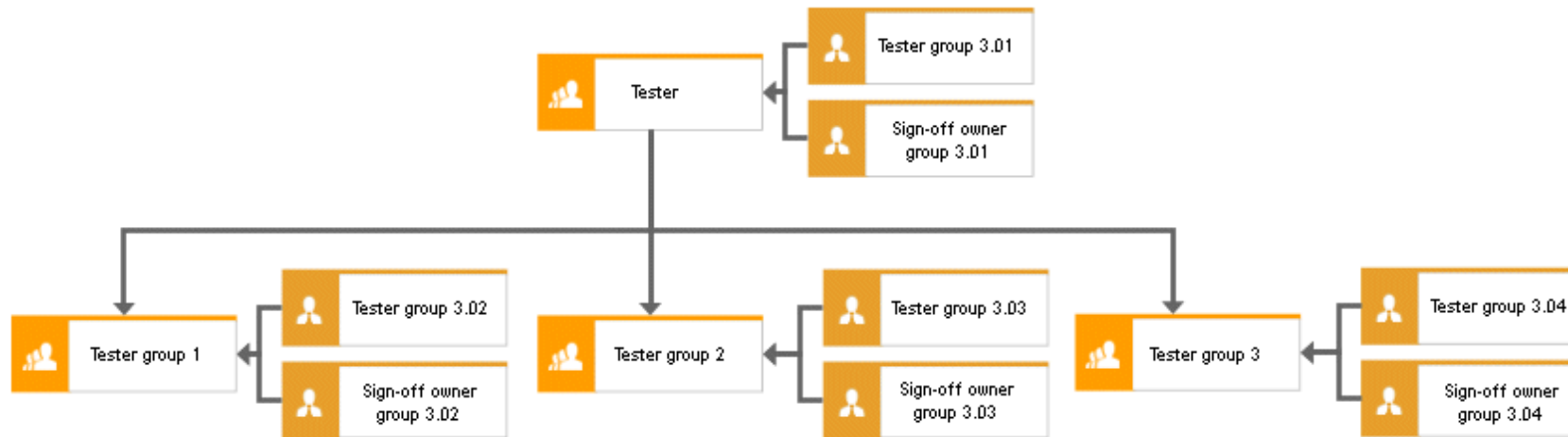


Figure 13: Allocation of organizational unit (tester) – Sign-off owner group

4.1.6.4 Sign-off using organizational hierarchy

For sign-off, the relationship between the organizational units and the sign-off owner groups is modeled in the organizational chart of the company organization. The **belongs to** connection creates a link between the user group and the hierarchy element.

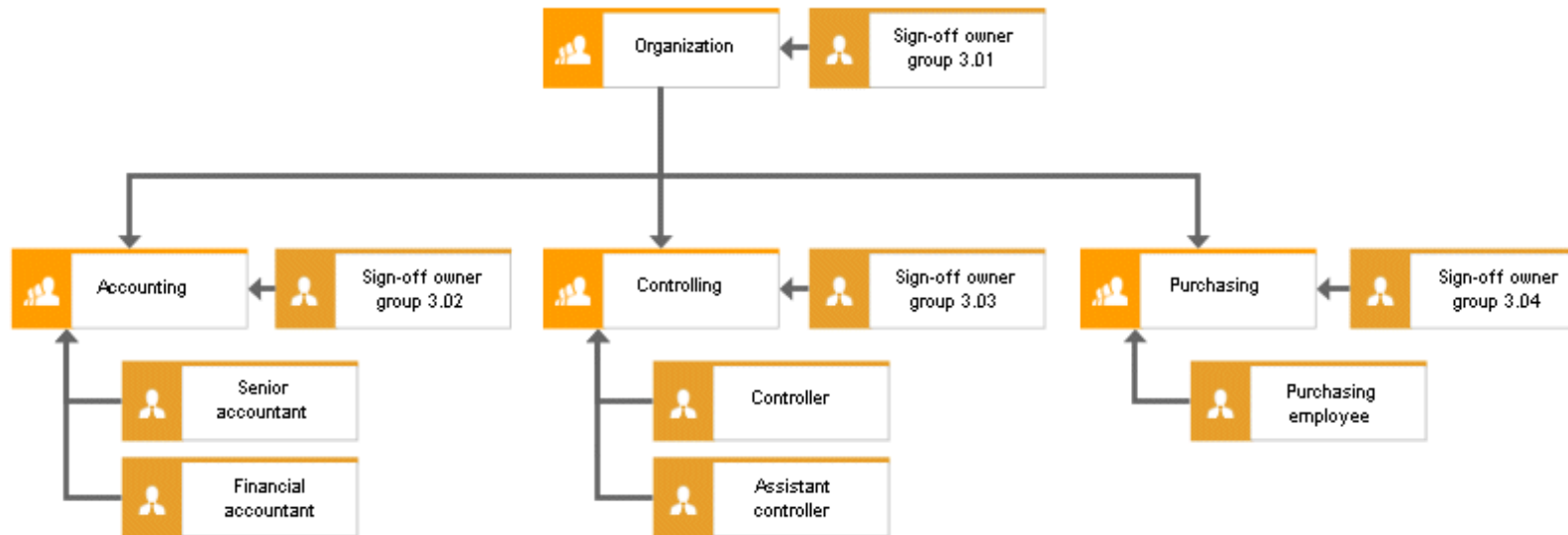


Figure 14: Allocation of organizational unit – Sign-off owner group

4.2 Deactivation of objects and relationships

The objects and relationships in ARIS Risk & Compliance Manager are subject to versioning to ensure traceability of changes. Therefore, objects and relationships in ARIS Risk & Compliance Manager are deactivated and not deleted. This means that the corresponding data items are not removed from the database, but rather marked as deactivated.

To deactivate objects/relationships in ARIS Risk & Compliance Manager via synchronization you must mark them accordingly in ARIS Architect. To do so, you use the attribute **Deactivated** (AT_DEACT). The attribute can be set for both objects and connections. As soon as the attribute is set, the object or connection are deactivated upon the next synchronization.

Of course, this is only the case if the objects/relationships are included in the ARIS Architect synchronization. After the successful synchronization with ARIS Risk & Compliance Manager you can delete the objects/connections in ARIS Architect. If objects/relationships were deleted in ARIS Architect before a deactivation via synchronization took place you can deactivate them manually in ARIS Risk & Compliance Manager.

5 Disclaimer

ARIS products are intended and developed for use by people. Automatic processes such as generation of content and import of objects/artefacts using interfaces can lead to a huge data volume, processing of which may exceed the available processing capacity and physical limits. Physical limits can be exceeded if the available memory is not sufficient for execution of the operations or storage of the data.

Effective operation of ARIS Risk & Compliance Manager requires a reliable and fast network connection. A network with an insufficient response time reduces system performance and can lead to timeouts.

If ARIS products are used in a virtual environment, sufficient resources must be available to avoid the risk of overbooking.

The system has been tested in the **Internal control system** scenario with 400 users logged in simultaneously. It contains 2,000,000 objects. To guarantee adequate performance, we recommend operating with not more than 500 users logged in simultaneously. Customer-specific adaptations, particularly in lists and filters, have a negative impact on performance.

6 Software AG support

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