
**Information technology — Application
security —**

**Part 5-1:
Protocols and application security
controls data structure, XML schemas**

Technologies de l'information — Sécurité des applications —

*Partie 5-1: Protocoles et structure de données de contrôles de sécurité
d'application, schémas XML*





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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 27, *IT Security techniques*.

A list of all parts in the ISO/IEC 27034 series can be found on the ISO website.

Introduction

0.1 General

There is an increasing need for organizations to focus on protecting their information at the application level. A systematic approach towards increasing the level of application security provides an organization with evidence that information being used or stored by its applications is being adequately protected.

ISO/IEC 27034 (all parts) provides concepts, principles, frameworks, components and processes to assist organizations in integrating security seamlessly throughout the life cycle of their applications.

The Application Security Control (ASC) is one of the key components of ISO/IEC 27034 (all parts). To facilitate the implementation of the ISO/IEC 27034 (all parts) application security framework and the communication and exchange of ASCs, a formally defined exchange format is required.

This document is a Technical Specification document and defines XML Schemas of essential attributes of ASCs and further details the Application Security Life Cycle Reference Model.

0.2 Purpose

The purpose of this document is to define XML schemas that implement the essential information and data structure requirements for ASCs as well as the Application Security Lifecycle Reference Model (ASLCRM). The advantages of a standardized set of essential information attributes and data structure of ASCs include the following:

- a) facilitate the exchange of application security controls (ASCs);
- b) provide a formally defined reference model for tool vendors, ASC suppliers and acquirers.

0.3 Targeted audiences

0.3.1 General

The following audiences will find values and benefits when carrying their designated organizational roles:

- a) managers;
- b) ONF committee;
- c) domain experts;
- d) suppliers;
- e) acquirers.

0.3.2 Managers

Managers should read this document because they are responsible for:

- a) ensuring the ASCs are reusable within the organization; and
- b) ensuring the ASCs are available, communicated and used in application projects with proper tools and procedures all across the organization.

0.3.3 ONF Committee

The ONF Committee is responsible for managing the implementation and maintenance of the application-security-related components and processes in the Organization Normative Framework. The ONF Committee needs to:

- a) implement the ASC Library;

- b) approve ASCs that correctly mitigate application security risks; and
- c) manage the cost of implementing and maintaining the ASCs.

0.3.4 Domain experts

Domain experts contribute knowledge in application provisioning, operating or auditing, who need to:

- a) participate in ASC development, validation and verification;
- b) participate in ASC implementation and maintenance, by proposing strategies, components and implementation processes for adapting ASCs to the organization's context; and
- c) validate that ASCs are useable and useful in application projects.

0.3.5 ASC suppliers

Suppliers contribute to develop, maintain and distribute tools and/or ASCs. They need to:

- a) create, validate, sign, distribute and apply ASCs; and
- b) be aligned with a common and standardized exchange protocol (structure and format) for ASCs.

0.3.6 ASC acquirers

Acquires are individuals or organizations who want to acquire ASCs. They need to:

- a) integrate ASCs into their organization and ensure the interoperability of any internal and third-party ASCs;
- b) adapt and sign ASCs to enforce their integrity; and
- c) ensure that the activities and tasks of acquired ASCs can be mapped to the organization's application lifecycle.

Information technology — Application security —

Part 5-1:

Protocols and application security controls data structure, XML schemas

1 Scope

This document defines XML Schemas that implement the minimal set of information requirements and essential attributes of ASCs and the activities and roles of the Application Security Life Cycle Reference Model (ASLCRM) from ISO/IEC 27034-5.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 27034-1, *Information technology — Security techniques — Application security — Part 1: Overview and concepts*

ISO/IEC 27034-5, *Information technology — Security techniques — Application security — Part 5: Protocols and application security control data structure*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 27034-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

activity

set of actions or tasks carried out by an actor during the application's lifecycle

4 Abbreviated terms

ASC	Application Security Control
ASLC	Application Security Life Cycle
ASLCRM	Application Security Life Cycle Reference Model
ICT	Information and Communication Technology
ONF	Organization Normative Framework

5 XML Schema for ASCs

5.1 General

The purpose of [Clause 5](#) is to define an XML implementation of the information requirements and essential attributes for ASC identified in ISO 27045-5. The schema source file can be downloaded from ISO.

5.2 Global design decisions

In line with the objectives and requirements defined in ISO/IEC 27034-5, the following high-level design decisions for this implementation of the ASC data model were taken:

- a) **XML and XML schema:** ASCs are defined in the platform-independent extensible markup language (XML). Consequently, the data model for ASCs is defined in the form of an XML schema;
- b) **ASC package:** The data model provides a mechanism for grouping and bundling one or many related ASCs in form of an *ASC package*. This allows for the convenient exchange of related ASCs;
- c) **Level of Trust inclusion:** Each ASC should refer to one or more levels of trust. In order to keep the ASC self-contained the data model is designed to also include the actual definition of the levels of trust.

5.3 General XML Information

All XML elements defined by the XML Schema for the ASC data model are part of “asc” namespace and shall be qualified by asc. The namespace URI for this specification should be “<http://standards.iso.org/iso-iec/ts/27034/5-1/ed-1/en>”. Applications that process ASCs should use the namespace URI to decide whether or not they can process a given document. The XML schema implementation defined in this subclause should be the authoritative XML binding definition for ASCs.

Table 1 — ASC Data Model — Namespace and Schema Import Definition

```
<?xml version="1.81" encoding="UTF-8"?>
<!-- edited for ISO/IEC 27034 by Luc Poulin and Daniel Sinnig -->
<xs:schema
  xmlns:asc="http://iso.org/ISO27034/ASC-structure"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:aslcrm="http://iso.org/ISO27034ASLCRM"
  targetNamespace="http://iso.org/ISO27034/ASC-structure"
  elementFormDefault="qualified"
  attributeFormDefault="qualified"
  version="1.0RC">
  ...
</xs:schema>
```

NOTE 1 ASC developers align their vocabulary with ISO/IEC 19770 (all parts) when they need to describe assets.

NOTE 2 Explicit indication of an inheritance hierarchy is not implemented in the ASC structure, but can be implemented in future versions.

5.4 ASC Data Model Definition

5.4.1 General

The purpose of 5.4 is to present an overview of all structural elements defined by the XML schema for the ASC structure. The elements are presented in a top-down manner where high-level elements are successively refined into lower-level elements. All XML elements defined in this XML Schema are part of the “asc” namespace and shall be qualified by `asc`:

5.4.2 ASC Package

5.4.2.1 General

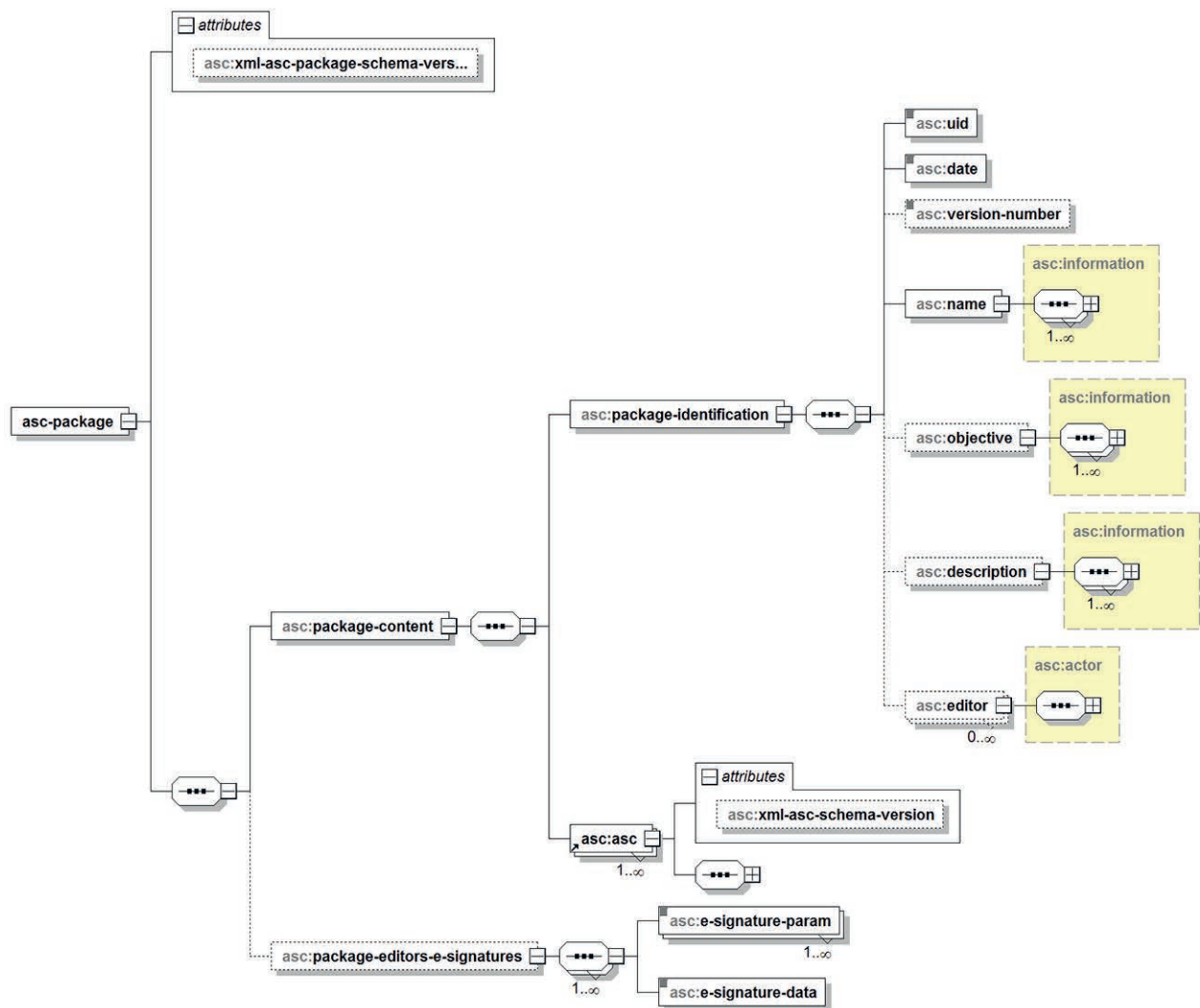


Figure 1 — ASC Package

The top-level element `<asc:asc-package>` mechanism for grouping and bundling one or many related ASCs in form of an ASC package (Figure 1). This allows for the convenient exchange of related ASCs. It consists of the following sub-elements:

- `<asc:package-content>` is actual payload of the package. It consists of package meta-data `<asc:package-content>` and one or more ASCs `<asc:package-content>`;

- b) <asc:package-editors-e-signatures> optionally contains digital signatures to validate the source and integrity of the entire package.

NOTE The ASC package object and the ASC object both have a schema version number value defined in the XML-Schema used to identify their data structure. It consists of the following attributes:

- a) <asc:xml-asc-package-schema-version>; and
 b) <asc:xml-asc-schema-version>.

[Table 2](#) shows the implementation of the element <asc:asc-package> in the XML Schema.

Table 2 — <asc:asc-package> element

```
<xs:element name="asc-package">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="package-content">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="package-identification">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="uid" type="xs:string">
                </xs:element>
                  <xs:element name="date" type="xs:date">
                </xs:element>
                  <xs:element name="version-number"
                        type="xs:string" minOccurs="0">
                </xs:element>
                  <xs:element name="name" type="asc:information">
                </xs:element>
                  <xs:element name="objective"
                        type="asc:information" minOccurs="0">
                </xs:element>
                  <xs:element name="description"
                        type="asc:information" minOccurs="0">
                </xs:element>
                  <xs:element name="editor" type="asc:actor"
                        minOccurs="0" maxOccurs="unbounded">

```

Table 2 (continued)

</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element ref="asc:asc" maxOccurs="unbounded">
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="package-editors-e-signatures" minOccurs="0">
<xs:complexType>
<xs:sequence maxOccurs="unbounded">
<xs:element name="e-signature-param" type="xs:string"
maxOccurs="unbounded">
</xs:element>
<xs:element name="e-signature-data" type="xs:string">
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
<xs:attribute name="xml-asc-package-schema-version" type="xs:string"
default="1.0.0.0">
</xs:attribute>
</xs:complexType>
</xs:element>

5.4.2.2 ASC Package Content

The <asc:package-content> elements consists of meta-data information about its contents and one more more ASCs. It consists of the following sub-elements.

- <asc:package-identification> defines meta-date information about the package contents such uid, date, version, name, objective, description and editor;
- <asc:asc> defines a particular ASC. Each ASC package is required to have one or more <asc:asc> elements.

[Table 3](#) shows the implementation of the element <asc:package-content> in the XML Schema.

Table 3 — <asc:package-content> element

```

<xs:element name="package-content">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="package-identification">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="uid" type="xs:string">
            </xs:element>
            <xs:element name="date" type="xs:date">
            </xs:element>
            <xs:element name="version-number" type="xs:string"
              minOccurs="0">
            </xs:element>
            <xs:element name="name" type="asc:information">
            </xs:element>
            <xs:element name="objective" type="asc:information"
              minOccurs="0">
            </xs:element>
            <xs:element name="description" type="asc:information"
              minOccurs="0">
            </xs:element>
            <xs:element name="editor" type="asc:actor" minOccurs="0"
              maxOccurs="unbounded">
            </xs:element>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element ref="asc:asc" maxOccurs="unbounded">
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

5.4.2.3 ASC Package identification

The element <asc:package-identification> contains meta-data information about the ASC package. It consists of the following elements:

- a) <asc:uid> is a unique identifier of the ASC package;
- b) <asc:date> is the date the package was created (combined date and time in UTC following ISO 8601);
- c) <asc:version-number> optionally denotes the version of the package;

- d) `<asc:name>` is the name of the package. This element has the custom type `asc:information` (defined in 5.4.9) used to specify the localization (i.e. language, area, organization) of the information contained by this `<asc:name>` element;
- e) `<asc:objective>` optionally describes the objective or theme of the package;
- f) `<asc:description>` optionally provides an informal (localized) description of the package;
- g) `<asc:editor>` optionally defines the editor of the package. This element has the custom type `asc:actor` (defined in 5.4.8) used to specify the name and coordinates of the author.

Table 3 shows the implementation of the element `<asc:package-identification>` in the XML Schema.

5.4.2.4 ASC Package e-signature

The element `<asc:package-editors-e-signatures>` contains digital signatures of the `<asc:package-content>` element. Each digital signature consists of one or more e-signature parameters and the actual e-signature.

- a) `<asc:e-signature-param>` defines relevant parameters about the e-signature such as signature algorithm, key size, hashing algorithm and the public key used to validate the signature; and
- b) `<asc:e-signature-date>` contains the actual digital signature of the asc-package.

Table 4 shows the implementation of the element `<asc:package-editors-e-signatures>` in the XML Schema.

Table 4 — `<asc:package-editors-e-signatures>` element

```
<xs:element name="package-editors-e-signatures" minOccurs="0">
  <xs:complexType>
    <xs:sequence maxOccurs="unbounded">
      <xs:element name="e-signature-param" type="xs:string"
        maxOccurs="unbounded">
      </xs:element>
      <xs:element name="e-signature-data" type="xs:string">
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

5.4.3 ASC Element

5.4.3.1 General

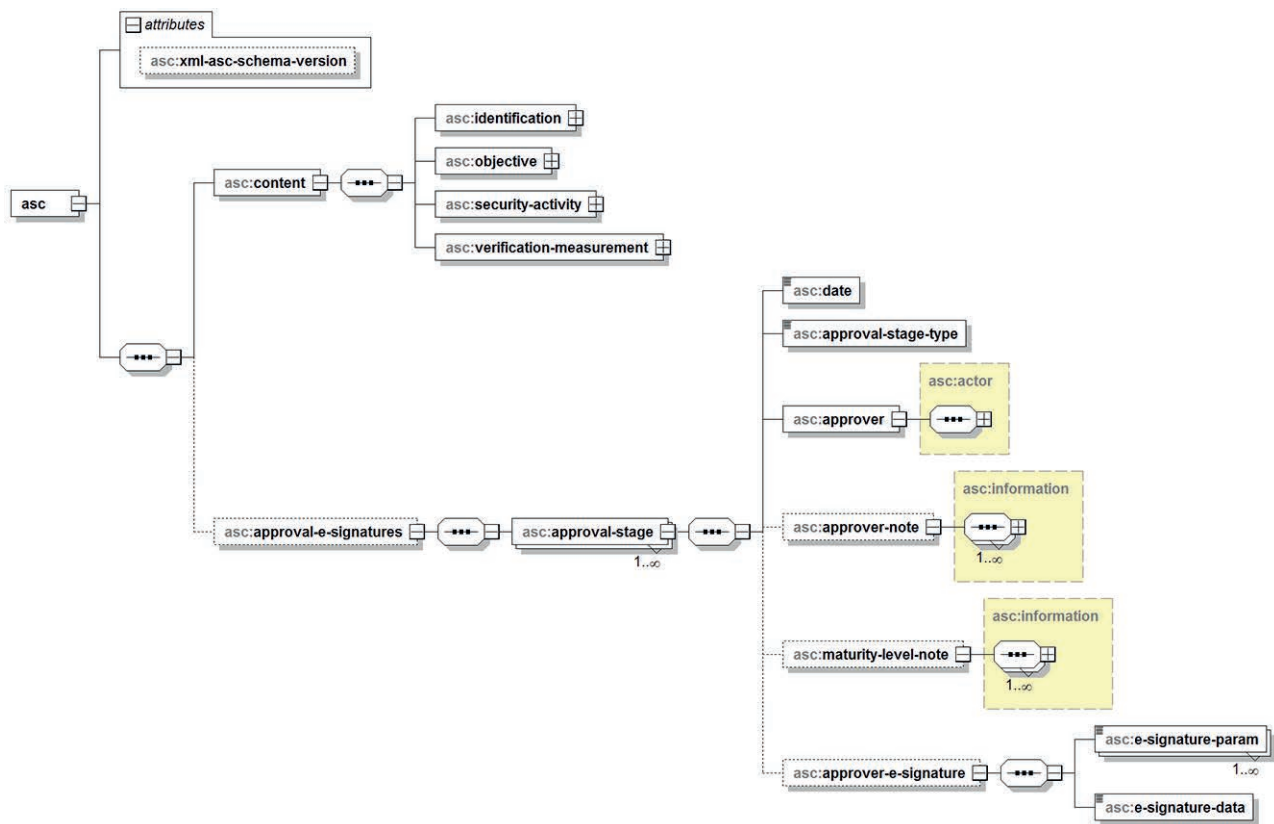


Figure 2 — ASC Top Level Structure

The `<asc:asc>` element holds all information pertinent to one application security control (ASC). The `<asc:asc>` element contains the attribute `xml-asc-schema-version`. It identifies the version of the XML schema the (instance) XML document is compatible with. It also contains the following two sub-elements:

- `<asc:content>` contains the actual ASC information contents;
- `<asc:approval-e-signature>` optionally contains the actual digital signature and related information to clarify and to protect the ASC contents.

5.4.3.2 ASC Content

The element `<asc:content>` defines the actual ASC (see [Figure 2](#)). It consists of the following elements:

- `<asc:identification>` defines information related to the identity of the ASC such as uid, name, version, date, author and owner (defined in [5.4.4](#));
- `<asc:objective>` defines key attributes including description, addressed security requirements, assigned levels of trust, relationships to other ASCs, etc (defined in [5.4.5](#));
- `<asc:security-activity>` defines the activity that needs to be carried out to address the security requirements associated with the ASC. High-level ASCs may not explicitly define a security activity. In such a case the definition of the activity is deferred to a lower-level ASC. The `<asc:security-activity>` element is assigned the complex type `asc:activity` (defined in [5.4.7](#));

- d) `<asc:verification-measurement>` defines the activity that needs to be carried out to verify the security activity. High-level ASCs may not explicitly define a verification measurement. In such a case the definition of the activity is deferred to a lower-level ASC. The `<asc:verification-measurement>` is assigned the complex type `asc:activity` (defined in 5.4.7).

Table 5 shows the implementation of the element `<asc:content>` in the XML Schema.

Table 5 — `<asc:content>` element

```
<xs:element name="content">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="identification">
        ...
      </xs:element>
      <xs:element name="objective">
        ...
      </xs:element>
      <xs:element name="security-activity" type="asc:activity">
        ...
      </xs:element>
      <xs:element name="verification-measurement" type="asc:activity">
        ...
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

5.4.3.3 ASC approval-e-signatures

The element `<asc:asc-approval-e-signature>` contains the digital signature of the `<asc:package-content>` which can be signed at different ASC life-cycle stages (e.g., design, development, verification, final approval, etc). For each signed stage, a separate signature is provided (see Figure 2). Therefore the element consists of one or more `<asc:approval-stage>` elements — each contains the signature for one particular ASC lifecycle stage and consists of the following elements:

- a) `<asc:date>` denotes the date when the ASC was signed;
- b) `<asc:approval-stage-type>` denotes the lifecycle stage of the ASC for which the signature was generated. It is assigned the custom enumeration type `asc:life-cycle-stage` (defined in 5.4.11);
- c) `<asc:approver>` contains information about the actor that has approved and signed the ASC. This element has the custom type `asc:actor` (defined in 5.4.8) used to specify the name and coordinates of the author;
- d) `<asc:approver-note>` optionally contains optional additional information provided by the approver of the ASC;

- e) `<asc:approval-e-signature>` optionally contains the actual digital signature of the ASC contents. Similar to the e-signature at package level, it consists of the following sub-elements:
 - 1) `<asc:e-signature-param>` defines relevant parameters about the e-signature such as signature algorithm, key size, hashing algorithm and the public key used to validate the signature;
 - 2) `<asc:e-signature-date>` contains the actual digital signature of the asc-package.

[Table 6](#) shows the implementation of the element `<asc:asc-approval-e-signature>` in the XML Schema.

Table 6 — <asc:asc-approval-e-signature> element

```

<xs:element name="approval-e-signatures" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Optionally contains the actual digital signature
      of the ASC contents.</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element name="approval-stage" maxOccurs="unbounded">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="date" type="xs:date"/>
            <xs:element name="approval-stage-type"
              type="asc:life-cycle-stage"/>
            <xs:element name="approver" type="asc:actor"/>
            <xs:element name="approver-note" type="asc:information"
              minOccurs="0"/>
            <xs:element name="maturity-level-note"
              type="asc:information" minOccurs="0"/>
            <xs:element name="approver-e-signature" minOccurs="0">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="e-signature-param"
                    type="xs:string" maxOccurs="unbounded"/>
                  <xs:element name="e-signature-data"
                    type="xs:string"/>
                </xs:sequence>
              </xs:complexType>
            </xs:element>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

5.4.4 ASC Identification

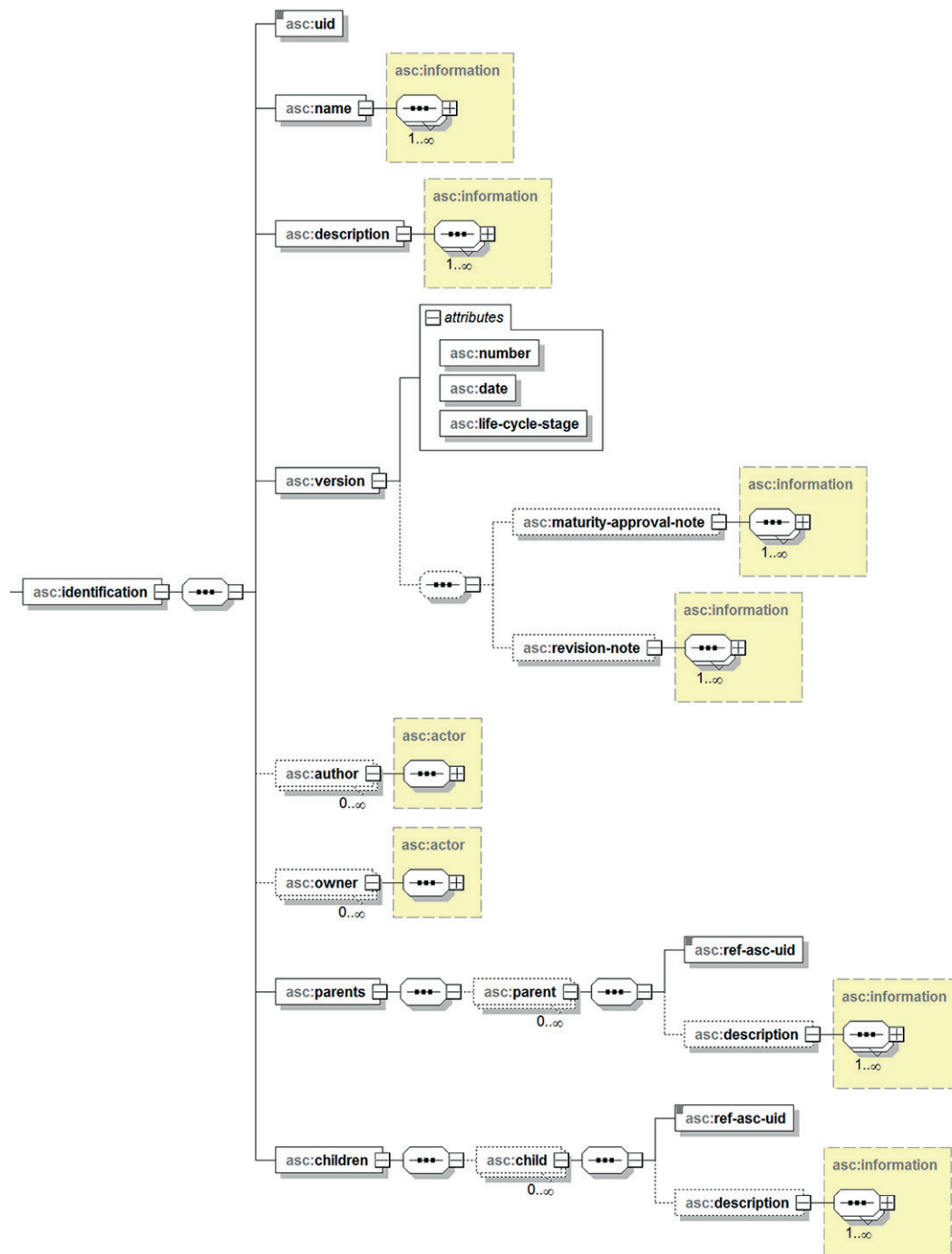


Figure 3 — ASC Identification

The `<asc:identification>` element defines global aspects for one ASC. It contains the following subelements in sequential order:

- `<asc:uid>` assigns a unique identifier to the ASC;
- `<asc:name>` denotes the name of the ASC;
- `<asc:description>` provides a high-level qualitative and localized description of this ASC purpose;

- d) `<asc:version>` data structure including:
- 1) `<xs:attribute name="number">` assigns a version number to the ASC using legal numbering (encoded as `xs:string`). The most recent ASC version shall be assigned the highest version number;
 - 2) `<xs:attribute name="date" type="xs:date">` required to define the creation date of the ASC version;
 - 3) `<xs:attribute name="life-cycle-stage" type="asc:life-cycle-stage" use="required">` used to identify the current ASC's stage within its life cycle, such as: Development, Verification, Approval, Published for training, or Active;
 - 4) `<xs:element name="maturity-approval-note" type="asc:information" minOccurs="0">` used to provide a maturity level indication of this version;
 - 5) `<xs:element name="revision-note" type="asc:information" minOccurs="0">` used to provide a description of how the ASC evolved from the previous version;
- e) `<asc:author>` defines the author of this ASC. This element has the custom type `asc:actor` (defined in [5.4.8](#)) used to specify the name and coordinates of the author;
- f) `<asc:owner>` optionally defines the owner of this ASC. This element has the custom type `asc:actor` (defined in [5.4.8](#)) used to specify the name and coordinates of the owner;
- g) `<asc:parents>` optionally defines a list of super-ordinate ASCs. It consists of a sequence of zero or more `<asc:parent>` elements which in turn contain a sequence of the following subelements:
- 1) `<asc:ref-asc>` contains a reference to the 'uid' of the super-ordinate ASC; and
 - 2) `<asc:description>` qualifies the relationship to the super-ordinate ASC.
- h) `<asc:children>` optionally defines a list of sub-ordinate ASCs. It consists of a sequence of zero or more `<asc:child>` elements which in turn contain a sequence of the following subelements:
- 3) `<asc:ref-asc>` contains a reference to the 'uid' of the sub-ordinate ASC;
 - 4) `<asc:description>` qualifies the relationship to the sub-ordinate ASC.

[Table 7](#) shows the implementation of the element `<asc:identification>` in the XML Schema.

Table 7 — `<asc:identification>` element

```
<xs:element name="identification">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="uid" type="xs:string">
      </xs:element>
      <xs:element name="name" type="asc:information">
      </xs:element>
      <xs:element name="description" type="asc:information">
      </xs:element>
      <xs:element name="version">
```

Table 7 (continued)

```

<xs:complexType>
  <xs:sequence minOccurs="0">
    <xs:element name="maturity-approval-note"
      type="asc:information" minOccurs="0">
    </xs:element>
    <xs:element name="revision-note"
      type="asc:information" minOccurs="0">
    </xs:element>
  </xs:sequence>
  <xs:attribute name="number" use="required">
</xs:attribute>
  <xs:attribute name="date" type="xs:date" use="required">
</xs:attribute>
  <xs:attribute name="life-cycle-stage"
    type="asc:life-cycle-stage" use="required">
</xs:attribute>
</xs:complexType>
</xs:element>
<xs:element name="author" type="asc:actor" minOccurs="0"
  maxOccurs="unbounded">
</xs:element>
<xs:element name="owner" type="asc:actor" minOccurs="0"
  maxOccurs="unbounded">
</xs:element>
<xs:element name="parents">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="parent" minOccurs="0"
        maxOccurs="unbounded">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="ref-asc-uid" type="xs:string"/>
            <xs:element name="description"
              type="asc:information" minOccurs="0"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>

```

Table 7 (continued)

```

</xs:element>
<xs:element name="children">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="child" minOccurs="0"
        maxOccurs="unbounded">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="ref-asc-uid" type="xs:string"/>
            <xs:element name="description"
              type="asc:information" minOccurs="0"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>

```

5.4.5 ASC Objective

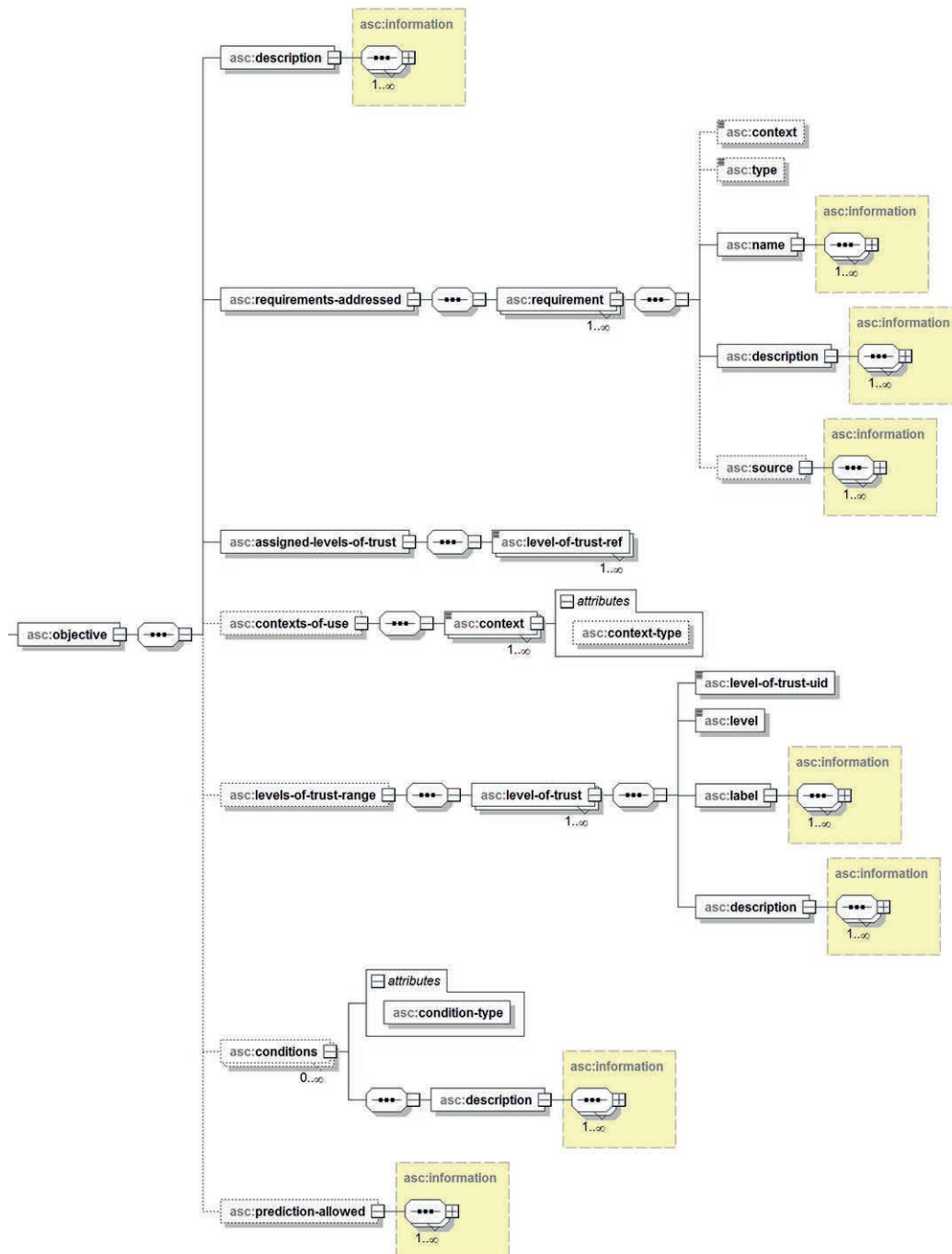


Figure 4 — ASC Objective

The <asc:objective> element is used to further contextualize the security and verification activities defined by the ASC. It consists of a sequence of the following subelements:

- <asc:description> provides a high-level qualitative and localized description of this ASC purpose.

- b) `<asc:requirements-addressed>` defines a set of security requirements that will be addressed by performing the security activity of this ASC. It consists of one or more `<asc:requirement>` elements which in turn consists of a sequence of the following subelements:
 - 1) `<asc:context>` defines the originating context of the requirement (e.g., `REGULATORY_CONTEXT`, `BUSINESS_CONTEXT`, etc.). It has the custom enumeration type `asc:requirements-context` (defined in [5.4.11](#), [Table 62](#));
 - 2) `<asc:type>` defines the type of the requirements (e.g., `BUSINESS_REQUIREMENT`, `FUNCTIONAL_REQUIREMENT`, etc.). It has the custom enumeration type `asc:requirements-type` (defined in [5.4.11](#), [Table 63](#));
 - 3) `<asc:name>` provides a (localized) name for the requirement;
 - 4) `<asc:description>` provides a (localized) qualitative description of the requirement; and
 - 5) `<asc:source>` specifies the source document from which the requirement originates.
- c) `<asc:assigned-levels-of-trust>` provides the levels of trust which are supported by this ASC. This element consists of a sequence of `<asc:level-of-trust-ref>` elements which in turn contain the identifier of a `<asc:level-of-trust>` element.
- d) `<asc:level-of-trust-range>` optionally provides definitions for a range of levels of trust. At a minimum the range shall include the levels of trust supported by the ASC. The range is defined by one or more `<level-of-trust>` elements which in turn contain the following sequence of subelements:
 - 1) `<level-of-trust-uid>` optionally defines a unique identifier for the level of trust;
 - 2) `<level>` defines a numeric denomination for the level of trust;
 - 3) `<label>` defines a qualitative (localized) label for the level of trust; and
 - 4) `<description>` provides an informal (localized) description of the level of trust.
- e) `<asc:pre-condition>` optionally defines one more preconditions that shall be fulfilled for applying the ASC.
- f) `s` optionally specifies that the correctness of the ASC can be verified through prediction instead of performing the verification activity of the ASC.

[Table 8](#) shows the implementation of the element `<asc:objective>` in the XML Schema.

Table 8 — <asc:objective> element

```

<xs:element name="objective">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="description" type="asc:information">
      </xs:element>
      <xs:element name="requirements-addressed">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="requirement" maxOccurs="unbounded">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="context"
                    type="asc:requirements-context"
                    minOccurs="0">
                  </xs:element>
                  <xs:element name="type"
                    type="asc:requirements-type"
                    minOccurs="0">
                  </xs:element>
                  <xs:element name="name" type="asc:information">
                  </xs:element>
                  <xs:element name="description"
                    type="asc:information">
                  </xs:element>
                  <xs:element name="source" type="asc:information"
                    minOccurs="0">
                  </xs:element>
                </xs:sequence>
              </xs:complexType>
            </xs:element>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="assigned-levels-of-trust">

```


Table 8 (continued)

```

<xs:complexType>
  <xs:sequence>
    <xs:element name="level-of-trust-ref" type="xs:string"
      maxOccurs="unbounded">
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="contexts-of-use" minOccurs="0">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="context" maxOccurs="unbounded">
        <xs:complexType>
          <xs:simpleContent>
            <xs:extension base="xs:string">
              <xs:attribute name="context-type">
                <xs:simpleType>
                  <xs:restriction base="xs:string">
                    <xs:enumeration value="Regulatory"/>
                    <xs:enumeration value="Business"/>
                    <xs:enumeration value="Technological"/>
                    <xs:enumeration value="Custom"/>
                  </xs:restriction>
                </xs:simpleType>
              </xs:attribute>
            </xs:extension>
          </xs:simpleContent>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="levels-of-trust-range" minOccurs="0">

```

Table 8 (continued)

```

<xs:complexType>
  <xs:sequence>
    <xs:element name="level-of-trust" maxOccurs="unbounded">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="level-of-trust-uid"
            type="xs:string"/>
          <xs:element name="level" type="xs:integer"/>
          <xs:element name="label" type="asc:information"/>
          <xs:element name="description"
            type="asc:information"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:element name="conditions" minOccurs="0" maxOccurs="unbounded">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="description" type="asc:information"/>
    </xs:sequence>
    <xs:attribute name="condition-type"
      type="asc:condition-type"
      use="required"/>
  </xs:complexType>
</xs:element>
<xs:element name="prediction-allowed" type="asc:information"
  minOccurs="0">
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>

```

5.4.6 ASC Security activity and Verification measurement

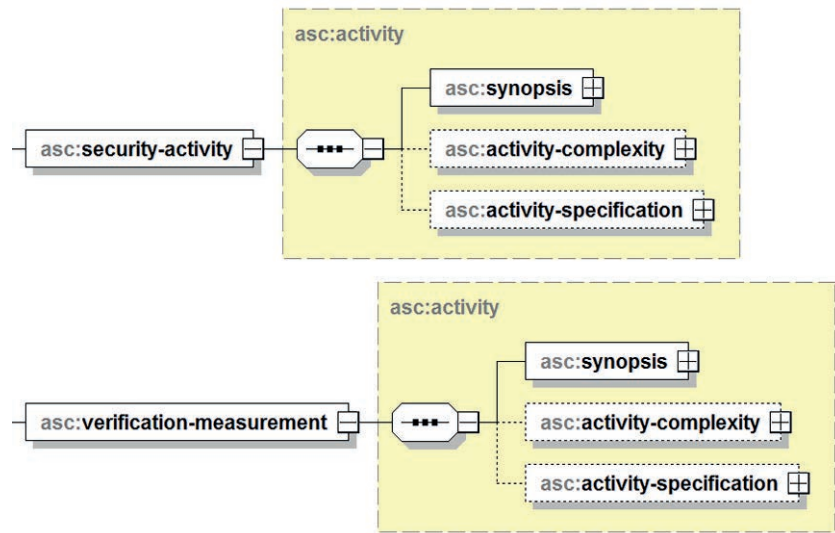


Figure 5 — ASC Security and Verification measurement activities

`<asc:security-activity>` and `<asc:verification-measurement>` elements share the same custom type `asc:activity` (defined in 5.4.7) to describe an activity.

Table 9 shows the implementation of elements `<asc:security-activity>` and `<asc:verification-measurement>` in the XML Schema.

Table 9 — `<asc:security-activity>` and `<asc:verification-measurement>` elements

<pre><xs:element name="security-activity" type="asc:activity"> </xs:element> <xs:element name="verification-measurement" type="asc:activity"> </xs:element></pre>

5.4.7 Complex type `asc:activity`

5.4.7.1 General

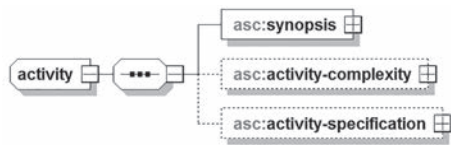


Figure 6 — ASC Activity

The `<asc:activity>` complex type is used to define a common structure of the elements `<asc:security-activity>` and `<asc:verification-measurement>`. It consists of a sequence of the following subelements:

- a) `<asc:synopsis>` provides a high-level overview of the activity, including its name, coverage and outcome (defined in 5.4.7.2);
- b) `<asc:activity-complexity>` defines the complexity of the activity using quantitative (e.g., cost, effort, time) and qualitative measures (defined in 5.4.7.3); and

- c) <asc:activity-specification> provides a detailed description of *how*, *when* and with *which* resources the activity is carried out (defined in 5.4.7.4).

Table 10 shows the implementation of the element <asc:activity> in the XML Schema.

Table 10 — <asc:activity> complex type

<pre><xs:complexType name="activity"> <xs:sequence> <xs:element name="synopsis"> ... </xs:element> <xs:element name="activity-complexity" type="asc:complexity-type" minOccurs="0"> ... </xs:element> <xs:element name="activity-specification" minOccurs="0"> ... </xs:element> </xs:sequence> </xs:complexType></pre>

5.4.7.2 Synopsis

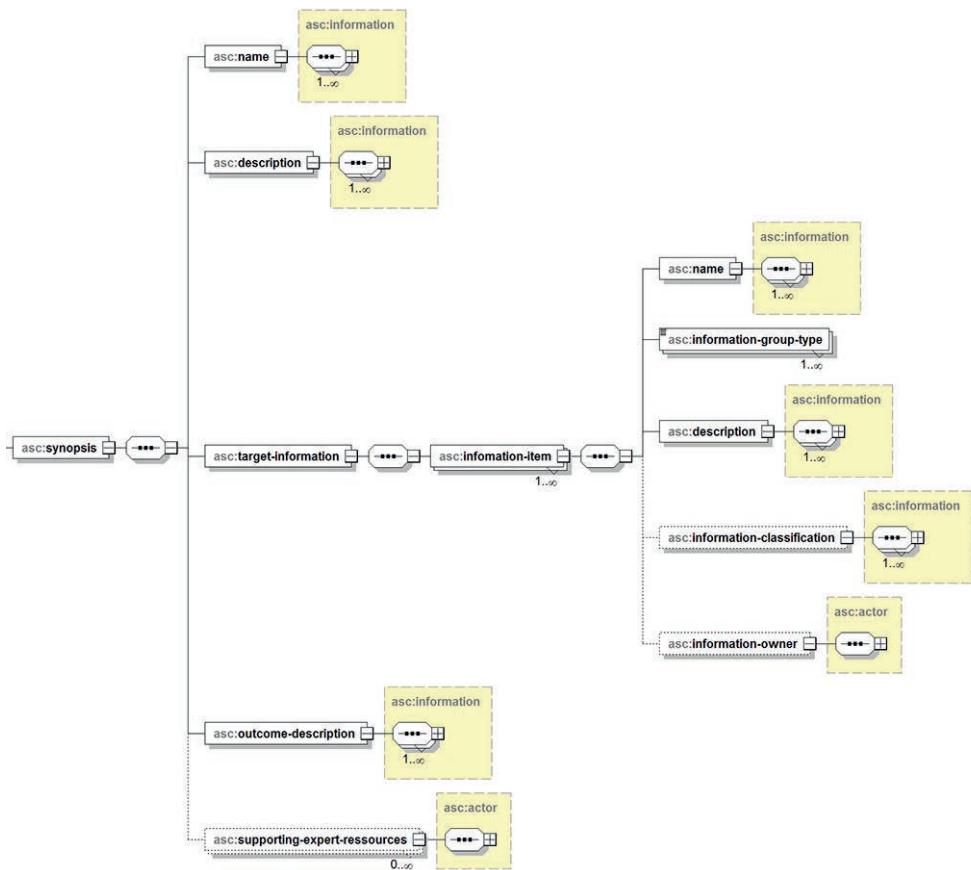


Figure 7 — ASC Activity; Synopsis

The `<asc:synopsis>` element is used to describe key properties of the activity including its name, scope and outcome. It consists of a sequence of the following subelements:

- a) `<asc:name>` defines a (localized) name of the activity;
- b) `<asc:description>` provides an informal (localized) description of the activity;
- c) `<asc:target-information>` issued to indicate the scope of the activity. It defines which information items are protected/affected by the activity. In order for an ASC activity to be valid and 'useful' there shall be at least one information item that is protected by the ASC. The `<asc:target-information>` element consists of one or many `<asc:information-item>` elements which in turn consist of a sequence of the following subelements:
 - 1) `<asc:name>` defines a (localized) name for the information item;
 - 2) `<asc:information-group-type>` classifies the information item (e.g., SPECIFICATION APPLICATION_DATA, TECHNOLOGY, etc.). It has the custom enumeration type `asc:information-group-type` defined in [5.4.11](#), [Table 46](#));
 - 3) `<asc:description>` provides an informal (localized) description of the information item;
 - 4) `<asc:information-classification>` provides an indication of how security sensitive (in terms of confidentiality, integrity and availability) the information item is;
 - 5) `<asc:information-owner>` identifies the owner of the informaton targetted by this ASC;
- d) `<asc:outcome-description>` provides an informal (localized) description of the overall outcome of the activity;
- e) `<asc:supporting-expert-ressources>` optionally provides one or more actors that will play the role of supporting expert for applying/verifying the ASC. This element has the custom type `asc:actor` (defined in [5.4.8](#)) used to specify the name and coordinates of the owner.

[Table 11](#) shows the implementation of the element `<asc:synopsis>` in the XML Schema.

Table 11 — <asc:synopsis> element

```

<xs:element name="synopsis">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="name" type="asc:information">
      </xs:element>
      <xs:element name="description" type="asc:information">
      </xs:element>
      <xs:element name="target-information">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="information-item" maxOccurs="unbounded">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="name" type="asc:information">
                  </xs:element>
                  <xs:element name="information-group-type"
                    type="asc:information-group-type"
                    maxOccurs="unbounded">
                  </xs:element>
                  <xs:element name="description"
                    type="asc:information">
                  </xs:element>
                  <xs:element name="information-classification"
                    type="asc:information" minOccurs="0">
                  </xs:element>
                  <xs:element name="information-owner"
                    type="asc:actor" minOccurs="0">
                  </xs:element>
                </xs:sequence>
              </xs:complexType>
            </xs:element>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="outcome-description" type="asc:information">
  </xs:element>
  <xs:element name="supporting-expert-ressources" type="asc:actor"
    minOccurs="0" maxOccurs="unbounded">
  </xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>

```

5.4.7.3 Activity complexity

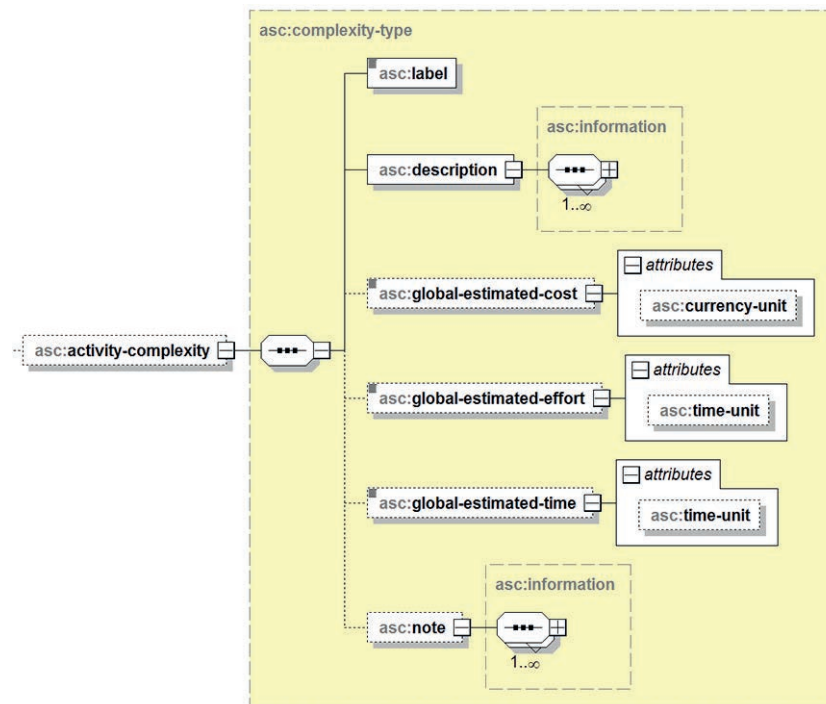


Figure 8 — ASC Activity; activity-complexity

The `<asc:activity-complexity>` element defines the complexity of the activity using qualitative and quantitative measures. It consists of a sequence of the following subelements:

- `<asc:label>` associates a descriptive complexity label (e.g., LOW, MEDIUM, HIGH, etc.) with the activity. It has the custom enumeration type `asc:activity-complexity` (defined in [5.4.11, Table 12](#));
- `<asc:description>` provides an information (localized) description of the activity;
- `<asc:global-estimated-cost>` defines the estimated (monetary) cost for performing the activity. The currency of the cost is defined by the `currency-unit` attribute;
- `<asc:global-estimated-effort>` defines the effort required to perform the activity. The unit for the effort is defined by the `time-unit` element and the `time-unit-type` attribute (see [Table 66](#));
- `<asc:global-estimated-time>` defines the time required to complete the activity. The unit for the time is defined by the `time-unit` element and the `time-unit-type` attribute (see [Table 66](#)); and
- `<asc:note>` provides supplemental information (localized) about the complexity of this activity.

[Table 12](#) shows the implementation of the element `<asc:activity-complexity>` in the XML Schema.

Table 12 — <asc:activity-complexity> element

```

<xs:element name="activity-complexity" type="asc:complexity-type" minOccurs="0">
</xs:element>
...
<xs:complexType name="complexity-type">
  <xs:sequence>
    <xs:element name="label" type="asc:activity-complexity">
</xs:element>
    <xs:element name="description" type="asc:information">
</xs:element>
    <xs:element name="global-estimated-cost" minOccurs="0">
      <xs:complexType>
        <xs:simpleContent>
          <xs:extension base="xs:double">
            <xs:attribute name="currency-unit" type="xs:string"/>
          </xs:extension>
        </xs:simpleContent>
      </xs:complexType>
    </xs:element>
    <xs:element name="global-estimated-effort" minOccurs="0">
      <xs:complexType>
        <xs:simpleContent>
          <xs:extension base="xs:double">
            <xs:attribute name="time-unit" type="asc:time-unit-type"
              default="HOURS"/>
          </xs:extension>
        </xs:simpleContent>
      </xs:complexType>
    </xs:element>
    <xs:element name="global-estimated-time" minOccurs="0">
      <xs:complexType>
        <xs:simpleContent>
          <xs:extension base="xs:double">
            <xs:attribute name="time-unit" type="asc:time-unit-type"
              default="HOURS"/>
          </xs:extension>
        </xs:simpleContent>
      </xs:complexType>
    </xs:element>
    <xs:element name="note" type="asc:information" minOccurs="0">
</xs:element>
  </xs:sequence>
</xs:complexType>

```


5.4.7.4 Activity specification

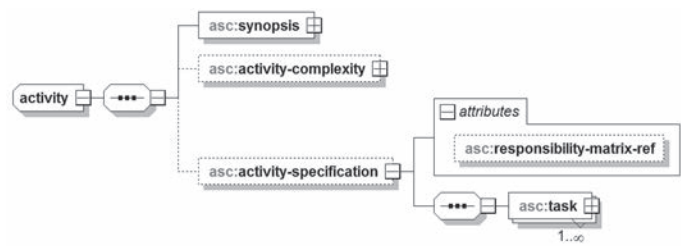


Figure 9 — ASC Activity; activity-specification

The `<asc:activity-specification>` element is used to provide precise information about how, when, and by which resources the activity is performed. It is assumed that each activity defines a sequence of tasks that need to be executed in order to perform the activity. Correspondingly the `<asc:activity-specification>` element consists of attribute `<responsibility-matrix-ref>` identifying the responsibility matrix used to describe this activity, and one or more `<asc:task>` elements.

Table 13 shows the implementation of the element `<asc:activity-specification>` in the XML Schema.

Table 13 — `<asc:activity-specification>` element

<pre><xs:element name="activity-specification" minOccurs="0"> <xs:complexType> <xs:sequence> <xs:element name="task" maxOccurs="unbounded"> ... </xs:element> </xs:sequence> <xs:attribute name="responsibility-matrix-ref" type="asc:responsibility-matrix-type" default="RACI"/> </xs:complexType> </xs:element></pre>
--

5.4.7.5 Task

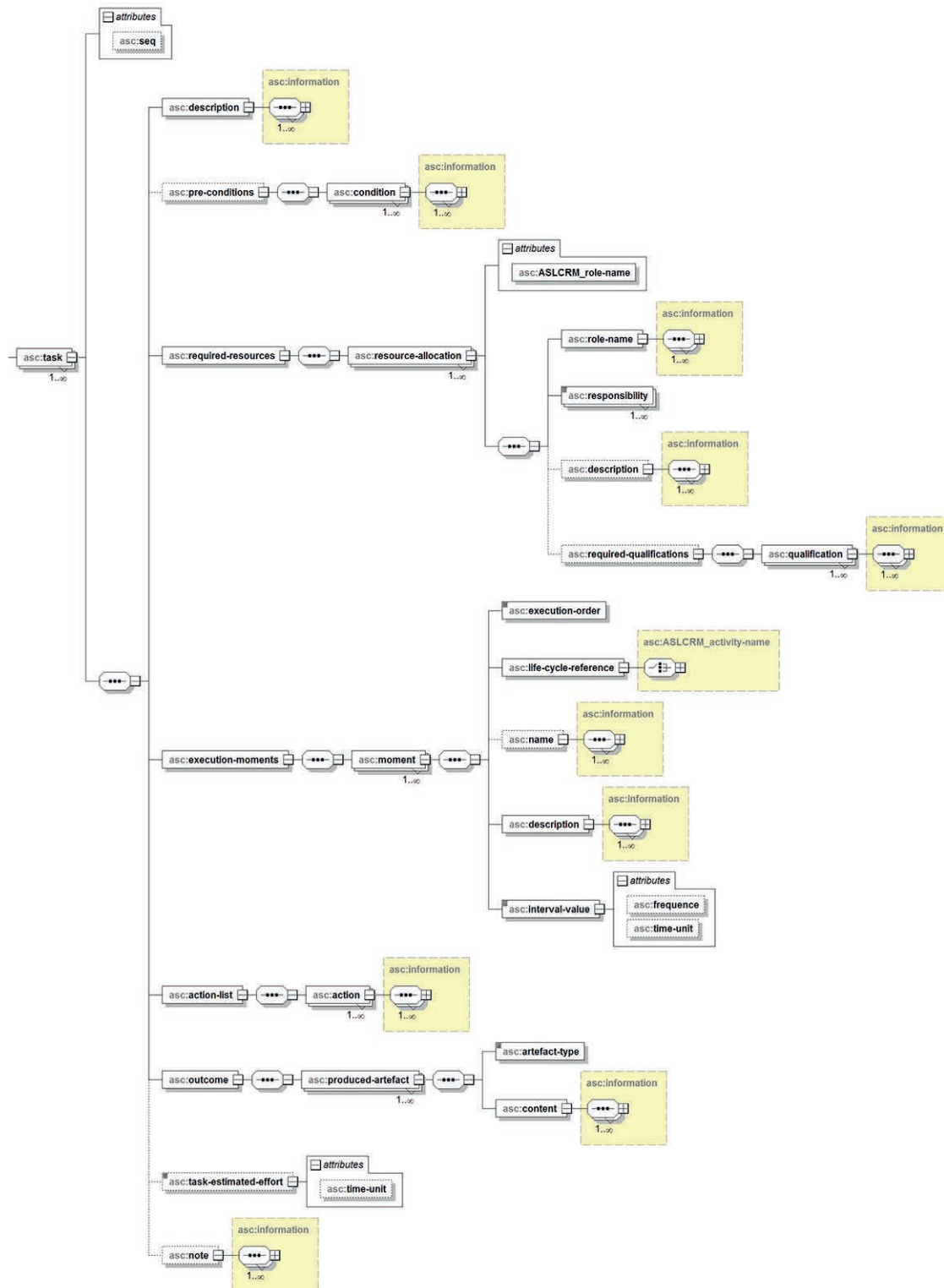


Figure 10 — ASC Activity; task

The `<asc:task>` element represents a task that needs to be executed in order to complete the activity. The `seq` attribute indicates the order in which the task is performed (relative to the other tasks of the activity). The `<asc:task>` element consists of a sequence of the following subelements:

- a) `<asc:description>` provides an informal (localized) description of the task;

- b) `<asc:pre-conditions>` optionally defines a set of preconditions that need to be satisfied before the task can be performed. It consists of one or many `<asc:condition>` elements;
- c) `<asc:required-resources>` defines the resources involved (and required) for performing the task (defined in [5.4.7.6](#));
- d) `<asc:execution-moments>` defines when (relative to the activities defined in the Application Security Lifecycle Reference Model (defined in [5.4.10](#)) the task should be performed;
- e) `<asc:action-list>` defines a sequence of atomic actions that need to be executed in order to complete the task (defined in [5.4.7.8](#));
- f) `<asc:outcome>` defines the expected outcome of the task (defined in [5.4.7.9](#));
- g) `<asc:task-estimated-effort>` defines the estimated effort required by the resource allocation to complete this task. The unit for the time is defined by the `time-unit` element and the `time-unit-type` attribute (see [Table 66](#));
- h) `<asc:note>` provides additional (localized) information about this task if needed.

[Table 14](#) shows the implementation of the element `<asc:task>` in the XML Schema.

Table 14 — <asc:task> element

```

<xs:element name="task" maxOccurs="unbounded">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="description" type="asc:information">
      </xs:element>
      <xs:element name="pre-conditions" minOccurs="0">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="condition" type="asc:information"
              maxOccurs="unbounded"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="required-resources">
        ...
      </xs:element>
      <xs:element name="execution-moments">
        ...
      </xs:element>
      <xs:element name="action-list">
        ...
      </xs:element>
      <xs:element name="outcome">
        ...
      </xs:element>
      <xs:element name="task-estimated-effort" minOccurs="0">
        <xs:complexType>
          <xs:simpleContent>
            <xs:extension base="xs:double">
              <xs:attribute name="time-unit" type="asc:time-unit-type"
                default="HOURS"/>
            </xs:extension>
          </xs:simpleContent>
        </xs:complexType>
      </xs:element>
      <xs:element name="note" type="asc:information" minOccurs="0">
      </xs:element>
    </xs:sequence>
    <xs:attribute name="seq" type="xs:int"/>
  </xs:complexType>
</xs:element>

```

5.4.7.6 Required resources

The `<asc:required-resources>` element ([Figure 10](#)) specified the resources that shall be allocated in order to perform the task. It consists of one or more `<asc:resource-allocation>` elements which in turn consists of a sequence of the following subelements:

- a) `<asc:role-name>` defines the role fulfilled by the resource (e.g., TESTER, MANAGER, DEVELOPER, etc.). It has the custom enumeration type `<asc:ASLCRM_role-nameLabel>` (defined in [5.4.11, Table 30](#));
- b) `<asc:responsibility>` defines the RACI responsibility (e.g., RESPONSIBLE, ACCOUNTABLE, SUPPORT, etc.) of the role. It has the custom enumeration type `<asc:RASCI>` (defined in [5.4.11, Table 59](#));
- c) `<asc:description>` provides an informal (localized) description of the nature of the resource allocation;
- d) `<asc:required-qualifications>` optionally defines the set of qualifications required for the resource allocation. It consists of one or many `<asc:qualification>` elements. Each of them describes one required qualification;
- e) `<asc:task-estimated-effort>` defines the estimated effort required by the resource allocation. It consists of a sequence of the following subelements:
 - 1) `<asc:description>` qualitatively describes the effort required;
 - 2) `<asc:estimated-costs>` optionally defines the monetary costs for the resource allocation. The currency is defined by the currency attribute; and
 - 3) `<asc:estimated-time>` optionally defines the time required for the resource allocation. The time unit is defined by the `time-unit` element and the attribute `<asc:time-unit-type>` (see [Table 66](#)).

[Table 15](#) shows the implementation of the element `<asc:required-resources>` in the XML Schema.

Table 15 — <asc:required-resources> element

```

<xs:element name="required-resources">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="resource-allocation" maxOccurs="unbounded">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="role-name" type="asc:information">
            </xs:element>
            <xs:element name="responsibility" type="asc:rasci"
              maxOccurs="unbounded">
            </xs:element>
            <xs:element name="description" type="asc:information"
              minOccurs="0">
            </xs:element>
            <xs:element name="required-qualifications" minOccurs="0">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="qualification"
                    type="asc:information"
                    maxOccurs="unbounded" />
                </xs:sequence>
              </xs:complexType>
            </xs:element>
          </xs:sequence>
          <xs:attribute name="ASLCRM_role-name"
            type="asc:ASLCRM_role-name-type"
            use="required">
          </xs:attribute>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

5.4.7.7 Execution moments

The <asc:execution-moments> element ([Figure 10](#)) defines at *when* the task shall be performed. This is done by relating the task to one or more activities of the Application Security Lifecycle Reference Model. This element consists of one or more <asc:moment> elements which in turn consist of a sequence of the following subelements:

- a) <asc:execution-order> defines the execution order (e.g., BEFORE, DURING, AFTER) relative to the referenced activity. It has the custom enumeration type <asc:execution-order> (defined in [5.4.11](#), [Table 43](#));

- b) `<asc:life-cycle-reference>` relates the task to one particular activity of the Application Security Lifecycle Model. It has the custom type `<asc:ASLCRM_activity-name>` (defined in [5.4.10](#));
- c) `<asc:name>` defines the activity name;

NOTE This element is mandatory only when the activity attribute is referencing to "CUSTOM" in the `<asc:life-cycle-reference>`.
- d) `<asc:description>` informally describes when the task shall be performed;
- e) `<asc:interval-value>` defines the execution frequency of the task (e.g., ONCE, PERIODIC, etc.). It has the custom enumeration type `<asc:time-unit-type>` (defined in [5.4.11](#), [Table 66](#)).

[Table 16](#) shows the implementation of the element `<asc:execution-moments>` in the XML Schema.

Table 16 — <asc:execution-moments> element

```

<xs:element name="execution-moments">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="moment" maxOccurs="unbounded">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="execution-order"
              type="asc:execution-order"
              default="DURING">
            </xs:element>
            <xs:element name="life-cycle-reference"
              type="asc:ASLCRM_activity-name">
            </xs:element>
            <xs:element name="name" type="asc:information"
              minOccurs="0">
            </xs:element>
            <xs:element name="description" type="asc:information">
            </xs:element>
            <xs:element name="interval-value">
              <xs:complexType>
                <xs:simpleContent>
                  <xs:extension base="xs:string">
                    <xs:attribute name="frequence">
                      <xs:simpleType>
                        <xs:restriction
                          base="asc:execution-interval">
                          <xs:enumeration value="ONCE"/>
                          <xs:enumeration value="PERIODIC"/>
                          <xs:enumeration value="ON_EVENT"/>
                          <xs:enumeration value="CUSTOM"/>
                        </xs:restriction>
                      </xs:simpleType>
                    </xs:attribute>
                    <xs:attribute name="time-unit"
                      type="asc:time-unit-type"
                      default="MONTHS"/>
                  </xs:extension>
                </xs:simpleContent>
              </xs:complexType>
            </xs:element>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```


Table 16 (continued)

```

        </xs:extension>
        </xs:simpleContent>
        </xs:complexType>
        </xs:element>
        </xs:sequence>
        </xs:complexType>
        </xs:element>
        </xs:sequence>
        </xs:complexType>
    </xs:element>

```

5.4.7.8 Action list

The `<asc:action-list>` element ([Figure 10](#)) defines a set of actions that need to be executed in order to complete the task. The element consists of one or more `<asc:action>` elements, each describing one particular atomic action. The `seq` attribute indicates the execution order of the action (relative to the other actions of the task).

[Table 17](#) shows the implementation of the element `<asc:action-list>` in the XML Schema.

Table 17 — `<asc:action-list>` element

```

<xs:element name="action-list">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="action" type="asc:information"
        maxOccurs="unbounded" />
    </xs:sequence>
    <xs:attribute name="seq" type="xs:int" />
  </xs:complexType>
</xs:element>

```

5.4.7.9 Outcome

The `<asc:outcome>` element ([Figure 10](#)) defines which artefacts are expected to be produced as a result of task performance. It consists of one or more `<asc:produced-artefact>` elements which in turn consist of the sequence of the following subelements:

- a) `<asc:type>` defines what type of artefact will be produced (e.g., `SOURCE_CODE`, `LIBRARY`, `DOCUMENT`, etc.). It has the custom enumeration type `asc:artefact-type` (defined in [5.4.11](#)); and
- b) `<asc:content>` describes the expected content of the produced artefact.

[Table 18](#) shows the implementation of the element `<asc:outcome>` in the XML Schema.

Table 18 — <asc:outcome> element

```
<xs:element name="outcome">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="produced-artefact" maxOccurs="unbounded">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="artefact-type" type="asc:artefact-type">
              </xs:element>
            <xs:element name="content" type="asc:information">
              </xs:element>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
```

5.4.8 Complex type `asc:actor`

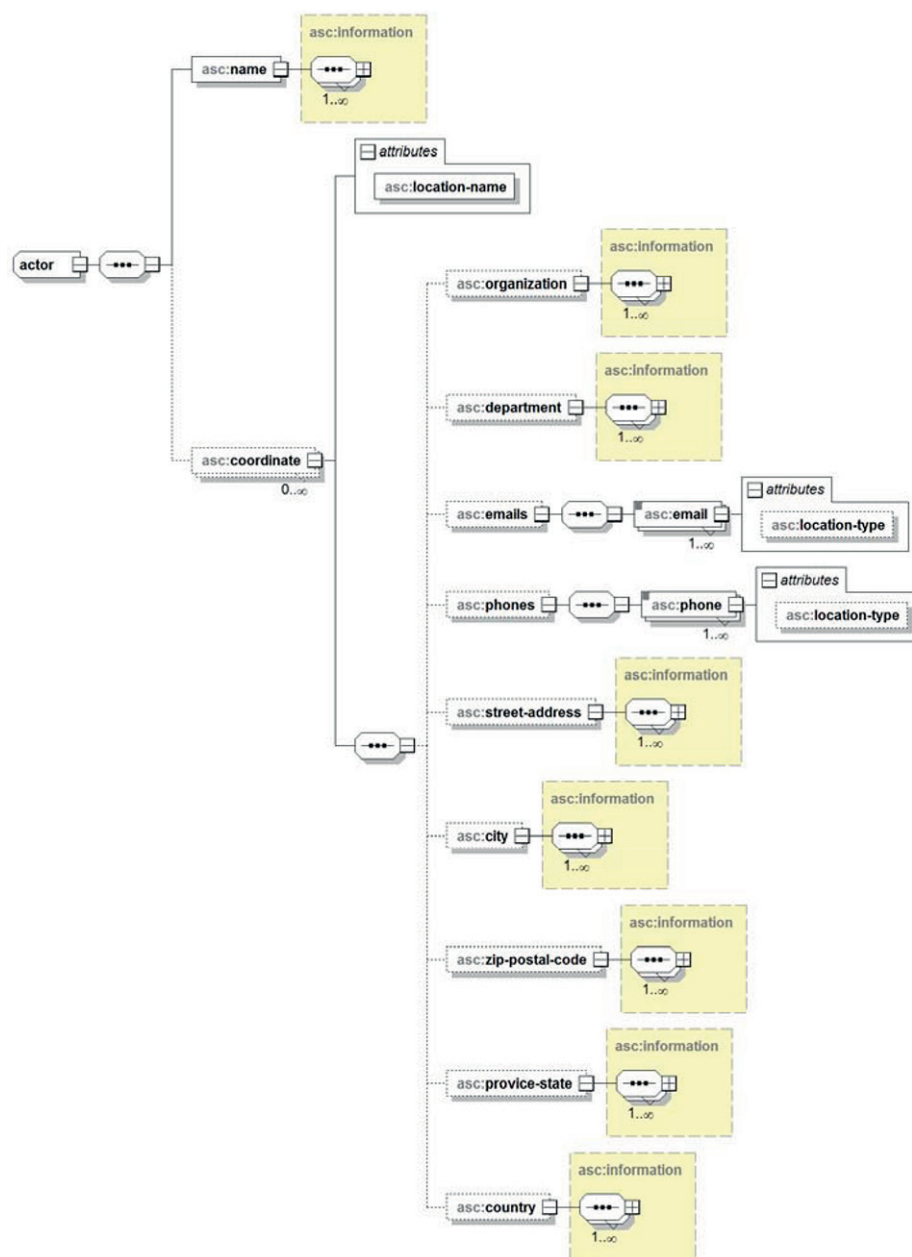


Figure 11 — ASC Actor complex type

The complex type `asc:actor` defines a common structure for the elements `<asc:author>`, `<asc:owner>` and `<asc:signer>`. It consists of a sequence of the following subelements:

- a) `<asc:name>` defines the name of the actor;
- b) `<asc:coordinates>` optionally defines a set of coordinates of the actor. It consists of one or many `<asc:coordinate>` elements which in turn consists of a sequence of the following subelements:
 - 1) `<asc:department>` optionally defines the actor's department;
 - 2) `<asc:organization>` optionally defines the actor's organization;

- 3) `<asc:emails>` optionally defines a set of email addresses of the actor. The element consists of a sequence of `<asc:email>` elements — each defining one email address. The type of address is defined by the type attribute;
- 4) `<asc:phones>` optionally defines a set of phone numbers of the actor. The element consists of a sequence of `<asc:phone>` elements — each defining one phone number. The type of phone number is defined by the type attribute;
- 5) `<asc:street-address>` optionally defines the street address of the actor;
- 6) `<asc:city>` optionally defines the city of the actor;
- 7) `<asc:provice-state>` optionally defines the province/state of the actor;
- 8) `<asc:country>` optionally defines the country of the actor.

[Table 19](#) shows the implementation of the element `<asc:actor>` in the XML Schema.

Table 19 — <asc:actor> complex type

```

<xs:complexType name="actor">
  <xs:sequence>
    <xs:element name="name" type="asc:information"/>
    <xs:element name="coordinate" minOccurs="0" maxOccurs="unbounded">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="organization" type="asc:information"
            minOccurs="0"/>
          <xs:element name="department" type="asc:information"
            minOccurs="0"/>
          <xs:element name="emails" minOccurs="0">
            <xs:complexType>
              <xs:sequence>
                <xs:element name="email" maxOccurs="unbounded">
                  <xs:complexType>
                    <xs:simpleContent>
                      <xs:extension base="xs:string">
                        <xs:attribute name="location-type"
                          type="xs:string"/>
                      </xs:extension>
                    </xs:simpleContent>
                  </xs:complexType>
                </xs:element>
              </xs:sequence>
            </xs:complexType>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="phones" minOccurs="0">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="phone" maxOccurs="unbounded">
            <xs:complexType>
              <xs:simpleContent>
                <xs:extension base="xs:string">
                  <xs:attribute name="location-type"
                    type="xs:string"/>
                </xs:extension>
              </xs:simpleContent>
            </xs:complexType>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

Table 19 (continued)

```

        </xs:extension>
      </xs:simpleContent>
    </xs:complexType>
  </xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="street-address" type="asc:information"
  minOccurs="0"/>
<xs:element name="city" type="asc:information" minOccurs="0"/>
<xs:element name="zip-postal-code" type="asc:information"
  minOccurs="0"/>
<xs:element name="provice-state" type="asc:information"
  minOccurs="0"/>
<xs:element name="country" type="asc:information"
  minOccurs="0"/>
</xs:sequence>
<xs:attribute name="location-name" type="xs:string"
  use="required">
</xs:attribute>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>

```

5.4.9 Complex type asc:information

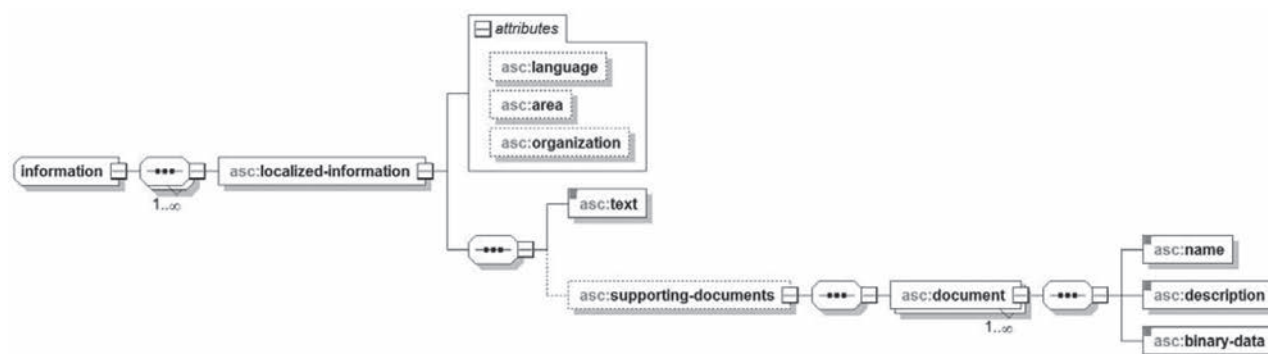


Figure 12 — ASC Information complex type

The complex type `asc:information` defines a common structure for all elements that shall capture information in a localized manner. The type defines one or more `<asc:localized-information>` elements. The language of the information is defined by the following attributes:

- a) the language attribute, applying ISO 639-1;

- b) the geographic area for which the information is valid is defined by the `area` attribute, applying ISO 3166-1;
- c) the `organization` attribute, used to align terms and descriptions to the vocabulary of a specific organization.

The `<asc:localized-information>` element consists of a sequence of the following subelements:

- a) `<asc:text>` defines the content of the information in textual format;
- b) `<asc:supporting-documents>` optionally defines any non-textual (binary) information. It consists of one or more `<asc:document>` elements which in turn consists of a sequence of the following subelements:
 - 1) `<asc:name>` defines the name of the supporting document.
 - 2) `<asc:description>` provides an informal description of the supporting document.
 - 3) `<asc:binary-data>` provides the contents of the supporting document in binary form.

[Table 20](#) shows the implementation of the element `<asc:information>` in the XML Schema.

Table 20 — <asc:information> complex type

```

<xs:complexType name="information">
  <xs:sequence maxOccurs="unbounded">
    <xs:element name="localized-information">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="text" type="xs:string">
            </xs:element>
          <xs:element name="supporting-documents" minOccurs="0">
            <xs:complexType>
              <xs:sequence>
                <xs:element name="document" maxOccurs="unbounded">
                  <xs:complexType>
                    <xs:sequence>
                      <xs:element name="name" type="xs:string">
                        </xs:element>
                      <xs:element name="description"
                                type="xs:string"/>
                      <xs:element name="binary-data"
                                type="xs:base64Binary"/>
                    </xs:sequence>
                  </xs:complexType>
                </xs:element>
              </xs:sequence>
            </xs:complexType>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="language" type="xs:string" use="optional">
    </xs:attribute>
  <xs:attribute name="area" type="xs:string" use="optional">
    </xs:attribute>
  <xs:attribute name="organization" type="xs:string"
                use="optional">
    </xs:attribute>
  </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>

```

5.4.10 Complex type asc:ASLCRM_activity-name

5.4.10.1 General

The purpose of this element is relates a task in the security activity or verification measurement to the Application Security Life Cycle Reference Model (ASLCRM). The ASLCRM data model includes generic

definitions of application lifecycle activities which will be used as referential in the ASC definition to indicate *when* an ASC task shall be performed.

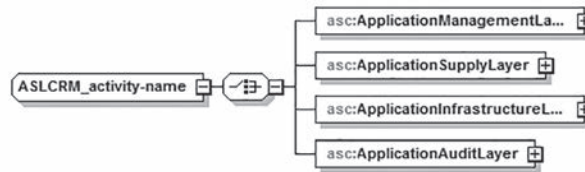


Figure 13 — ASLCRM Activity name – Top Level Structure

The complex type ASLCRM_activity-name defines four sub-elements, but only one can be selected at a time:

- `<asc:ApplicationManagementLayer>` defines stages, activity areas and activity sub-areas related to application management;
- `<asc:ApplicationSupplyLayer>` defines stages, activity areas and activity sub-areas related to application supply;
- `<asc:ApplicationInfrastructureLayer>` defines stages, activity areas and activity sub-areas related to application infrastructure management;
- `<asc:ApplicationAuditLayer>` defines stages, activity areas and activity sub-areas related to application audit.

[Table 21](#) shows the implementation of the element `<ASLCRM_activity-name>` in the XML Schema.

Table 21 — `<ASLCRM_activity-name>` complex type

```

<xs:complexType name="ASLCRM_activity-name">
  <xs:choice>
    <xs:element name="ApplicationManagementLayer">
      ...
    </xs:element>
    <xs:element name="ApplicationSupplyLayer">
      ...
    </xs:element>
    <xs:element name="ApplicationInfrastructureLayer">
      ...
    </xs:element>
    <xs:element name="ApplicationAuditLayer">
      ...
    </xs:element>
  </xs:choice>
</xs:complexType>

```

5.4.10.2 asc:ApplicationManagementLayer element

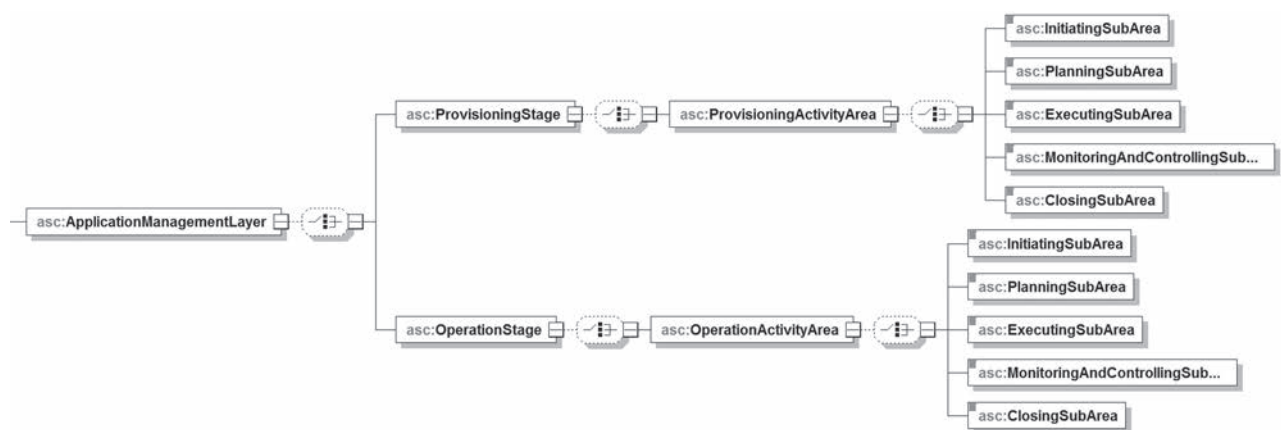


Figure 14 — ASLCRM Application Management Layer

The element `<asc:ApplicationManagementLayer>` is further structured into sub-elements indicating the stage, activity area and activity sub-area (see Figure 14). With each activity sub-area a set of predefined activity labels is associated as a simple type. These predefined activity labels, as introduced in Figure 14, are

- a) `initiating_SubAreaActivityLabel` (see Table 48),
- b) `planning_SubAreaActivityLabel` (see Table 56),
- c) `executing_SubAreaActivityLabel` (see Table 41),
- d) `monitoringAndControlling_SubAreaActivityLabel` (see Table 53), and
- e) `closing_SubAreaActivityLabel` (see Table 32).

Table 22 shows the implementation of the element `<asc:ApplicationManagementLayer>` in the XML Schema.

Table 22 — <asc:ApplicationManagementLayer> complex type

```

<xs:element name="ApplicationManagementLayer">
  <xs:complexType>
    <xs:choice minOccurs="0">
      <xs:element name="ProvisioningStage">
        <xs:complexType>
          <xs:choice minOccurs="0">
            <xs:element name="ProvisioningActivityArea">
              <xs:complexType>
                <xs:choice minOccurs="0">
                  <xs:element name="InitiatingSubArea"
                    type="asc:initiating_SubAreaActivityLabel"/>
                  <xs:element name="PlanningSubArea"
                    type="asc:planning_SubAreaActivityLabel"/>
                  <xs:element name="ExecutingSubArea"
                    type="asc:executing_SubAreaActivityLabel"/>
                  <xs:element name="MonitoringAndControllingSubArea"
                    type="asc:monitoringAndControlling_
                      SubAreaActivityLabel"/>
                  <xs:element name="ClosingSubArea"
                    type="asc:closing_SubAreaActivityLabel"/>
                </xs:choice>
              </xs:complexType>
            </xs:element>
          </xs:choice>
        </xs:complexType>
      </xs:element>
      <xs:element name="OperationStage">
        <xs:complexType>
          <xs:choice minOccurs="0">
            <xs:element name="OperationActivityArea">
              <xs:complexType>
                <xs:choice minOccurs="0">

```

Table 22 (continued)

```

<xs:element name="InitiatingSubArea"
  type="asc:initiating_SubAreaActivityLabel"/>
<xs:element name="PlanningSubArea"
  type="asc:planning_SubAreaActivityLabel"/>
<xs:element name="ExecutingSubArea"
  type="asc:executing_SubAreaActivityLabel"/>
<xs:element name="MonitoringAndControllingSubArea"
  type="asc:monitoringAndControlling_
    SubAreaActivityLabel"/>
<xs:element name="ClosingSubArea"
  type="asc:closing_SubAreaActivityLabel"/>
</xs:choice>
</xs:complexType>
</xs:element>
</xs:choice>
</xs:complexType>
</xs:element>
</xs:choice>
</xs:complexType>
</xs:element>

```

5.4.10.3 asc:ApplicationSupplyLayer element

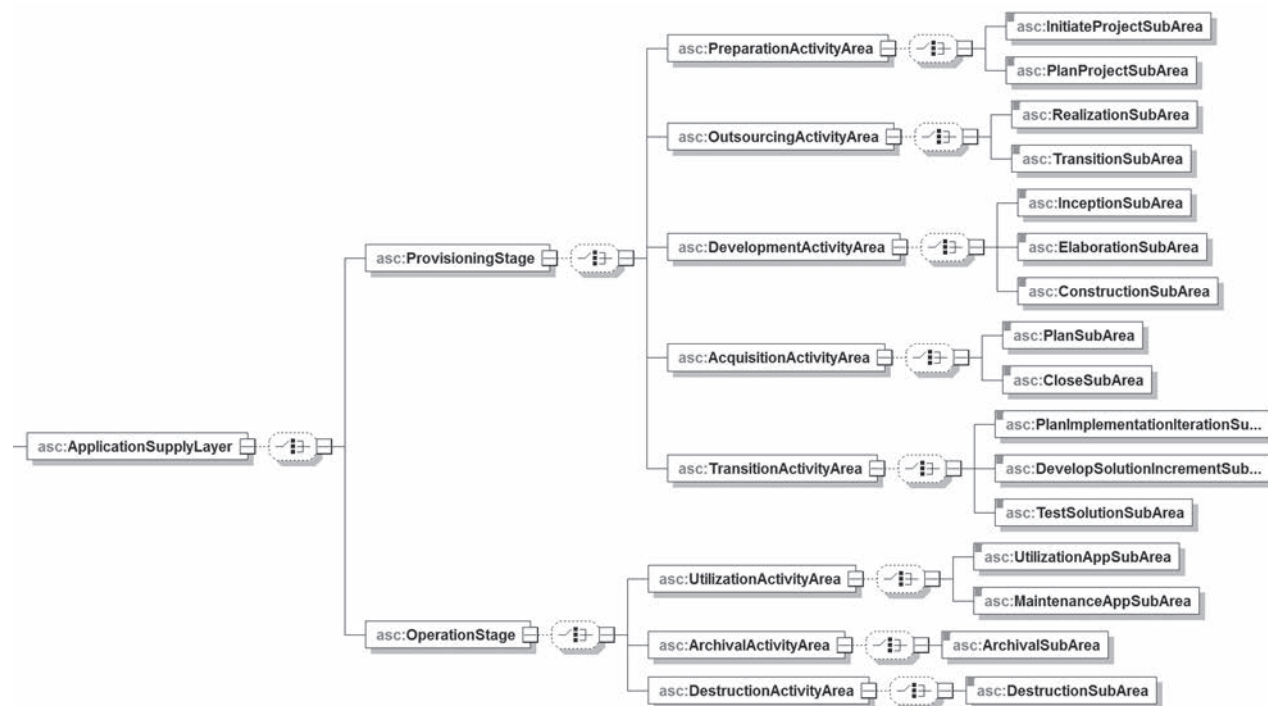


Figure 15 — ASLCRM Application Supply Layer

The element <asc:ApplicationSupplyLayer> is further structured into sub-elements indicating the stage, activity area and activity sub-area (see [Figure 15](#)). With each activity sub-area a set of predefined activity labels is associated as a simple type. These predefined activity labels, as introduced in [Figure 15](#), are

- a) initiateProject_SubAreaActivityLabel (see [Table 47](#)),
- b) planProject_SubAreaActivityLabel (see [Table 57](#)),
- c) realization_SubAreaActivityLabel (see [Table 60](#)),
- d) transition_SubAreaActivityLabel (see [Table 67](#)),
- e) inception_SubAreaActivityLabel (see [Table 45](#)),
- f) elaboration_SubAreaActivityLabel (see [Table 39](#)),
- g) construction_SubAreaActivityLabel (see [Table 36](#)),
- h) plan_SubAreaActivityLabel (see [Table 54](#)),
- i) close_SubAreaActivityLabel (see [Table 31](#)),
- j) planImplementationIteration_SubAreaActivityLabel (see [Table 55](#)),
- k) developSolutionIncrement_SubAreaActivityLabel (see [Table 38](#)),
- l) testSolution_SubAreaActivityLabel (see [Table 65](#)),
- m) utilization_SubAreaActivityLabel (see [Table 68](#)),
- n) maintenanceApp_SubAreaActivityLabel (see [Table 51](#)),
- o) archival_SubAreaActivityLabel (see [Table 28](#)), and
- p) destruction_SubAreaActivityLabel (see [Table 37](#)).

[Table 23](#) shows the implementation of the element <asc:ApplicationSupplyLayer> in the XML Schema.

Table 23 — <asc:ApplicationSupplyLayer> complex type

```

<xs:element name="ApplicationSupplyLayer">
  <xs:complexType>
    <xs:choice minOccurs="0">
      <xs:element name="ProvisioningStage">
        <xs:complexType>
          <xs:choice minOccurs="0">
            <xs:element name="PreparationActivityArea">
              <xs:complexType>
                <xs:choice minOccurs="0">
                  <xs:element name="InitiateProjectSubArea"
                    type="asc:initiateProject_SubAreaActivityLabel"/>
                  <xs:element name="PlanProjectSubArea"
                    type="asc:planProject_SubAreaActivityLabel"/>
                </xs:choice>
              </xs:complexType>
            </xs:element>
            <xs:element name="OutsourcingActivityArea">
              <xs:complexType>
                <xs:choice minOccurs="0">
                  <xs:element name="RealizationSubArea"
                    type="asc:realization_SubAreaActivityLabel"/>
                  <xs:element name="TransitionSubArea"
                    type="asc:transition_SubAreaActivityLabel"/>
                </xs:choice>
              </xs:complexType>
            </xs:element>
            <xs:element name="DevelopmentActivityArea">
              <xs:complexType>
                <xs:choice minOccurs="0">
                  <xs:element name="InceptionSubArea"
                    type="asc:inception_SubAreaActivityLabel"/>
                  <xs:element name="ElaborationSubArea"
                    type="asc:elaboration_SubAreaActivityLabel"/>
                  <xs:element name="ConstructionSubArea"
                    type="asc:construction_SubAreaActivityLabel"/>
                </xs:choice>
              </xs:complexType>
            </xs:element>
          </xs:choice>
        </xs:complexType>
      </xs:element>
    </xs:choice>
  </xs:complexType>
</xs:element>

```

Table 23 (continued)

```

</xs:element>
<xs:element name="AcquisitionActivityArea">
  <xs:complexType>
    <xs:choice minOccurs="0">
      <xs:element name="PlanSubArea"
        type="asc:plan_SubAreaActivityLabel"/>
      <xs:element name="CloseSubArea"
        type="asc:close_SubAreaActivityLabel"/>
    </xs:choice>
  </xs:complexType>
</xs:element>
<xs:element name="TransitionActivityArea">
  <xs:complexType>
    <xs:choice minOccurs="0">
      <xs:element name="PlanImplementation
        IterationSubArea" type="asc:planImplementation
        Iteration_SubAreaActivityLabel"/>
      <xs:element name="DevelopSolutionIncrementSubArea"
        type="asc:developSolution
        Increment_SubAreaActivityLabel"/>
      <xs:element name="TestSolutionSubArea"
        type="asc:testSolution_SubAreaActivityLabel"/>
    </xs:choice>
  </xs:complexType>
</xs:element>
</xs:choice>
</xs:complexType>
</xs:element>
<xs:element name="OperationStage">
  <xs:complexType>
    <xs:choice minOccurs="0">
      <xs:element name="UtilizationActivityArea">
        <xs:complexType>

```

Table 23 (continued)

```

<xs:choice minOccurs="0">
  <xs:element name="UtilizationAppSubArea"
    type="asc:utilization_SubAreaActivityLabel"/>
  <xs:element name="MaintenanceAppSubArea"
    type="asc:maintenanceApp_SubAreaActivityLabel"/>
</xs:choice>
</xs:complexType>
</xs:element>
<xs:element name="ArchivalActivityArea">
  <xs:complexType>
    <xs:choice minOccurs="0">
      <xs:element name="ArchivalSubArea"
        type="asc:archival_SubAreaActivityLabel"/>
    </xs:choice>
  </xs:complexType>
</xs:element>
<xs:element name="DestructionActivityArea">
  <xs:complexType>
    <xs:choice minOccurs="0">
      <xs:element name="DestructionSubArea"
        type="asc:destruction_SubAreaActivityLabel"/>
    </xs:choice>
  </xs:complexType>
</xs:element>
</xs:choice>
</xs:complexType>
</xs:element>
</xs:choice>
</xs:complexType>
</xs:element>

```

5.4.10.4 asc:ApplicationInfrastructureLayer element

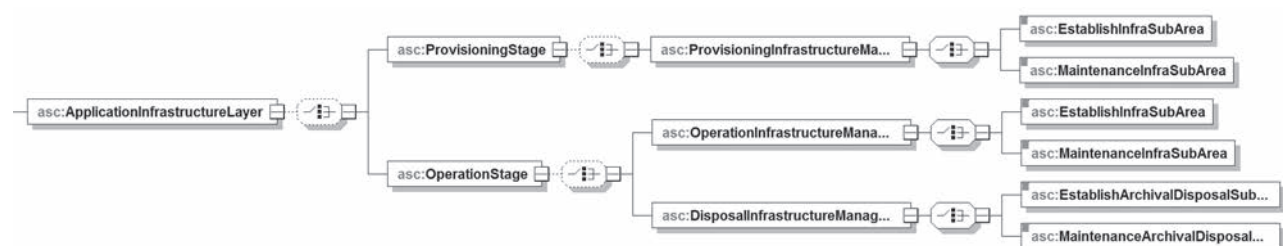


Figure 16 — ASLCRM Application Infrastructure Layer

The element `<asc:ApplicationInfrastructureLayer>` is further structured into sub-elements indicating the stage, activity area and activity sub-area (see [Figure 16](#)). With each activity sub-area a set of predefined activity labels is associated as a simple type. These predefined activity labels, as introduced in [Figure 16](#), are

- a) `establishInfra_SubAreaActivityLabel` (see [Table 40](#)), and
- b) `maintenanceInfra_SubAreaActivityLabel` (see [Table 52](#)).

[Table 24](#) shows the implementation of the element `<asc:ApplicationInfrastructureLayer>` in the XML Schema.

Table 24 — <asc:ApplicationInfrastructureLayer> complex type

```

<xs:element name="ApplicationInfrastructureLayer">
  <xs:complexType>
    <xs:choice minOccurs="0">
      <xs:element name="ProvisioningStage">
        <xs:complexType>
          <xs:choice minOccurs="0">
            <xs:element name="ProvisioningInfrastructure
              ManagementActivityArea">
                <xs:complexType>
                  <xs:choice>
                    <xs:element name="EstablishInfraSubArea"
                      type="asc:establishInfra_SubAreaActivityLabel"/>
                    <xs:element name="MaintenanceInfraSubArea"
                      type="asc:maintenanceInfra_SubAreaActivityLabel"/>
                  </xs:choice>
                </xs:complexType>
              </xs:element>
            </xs:choice>
          </xs:complexType>
        </xs:element>
      </xs:choice>
    </xs:complexType>
  </xs:element>
  <xs:element name="OperationStage">
    <xs:complexType>
      <xs:choice minOccurs="0">
        <xs:element name="OperationInfrastructureManagement">
          <xs:complexType>
            <xs:choice>
              <xs:element name="EstablishInfraSubArea"
                type="asc:establishInfra_SubAreaActivityLabel"/>
              <xs:element name="MaintenanceInfraSubArea"
                type="asc:maintenanceInfra_SubAreaActivityLabel"/>
            </xs:choice>
          </xs:complexType>
        </xs:element>
        <xs:element name="DisposalInfrastructureManagement">
          <xs:complexType>
            <xs:choice>
              <xs:element name="EstablishArchivalDisposalSubArea"
                type="asc:establishInfra_SubAreaActivityLabel"/>
              <xs:element name="MaintenanceArchival
                DisposalSubArea"
                type="asc:maintenanceInfra_SubAreaActivityLabel"/>
            </xs:choice>
          </xs:complexType>
        </xs:element>
      </xs:choice>
    </xs:complexType>
  </xs:element>

```

Table 24 (continued)

<code></xs:choice></code>
<code></xs:complexType></code>
<code></xs:element></code>
<code></xs:choice></code>
<code></xs:complexType></code>
<code></xs:element></code>
<code></xs:choice></code>
<code></xs:complexType></code>
<code></xs:element></code>

5.4.10.5 asc:ApplicationAuditLayer element

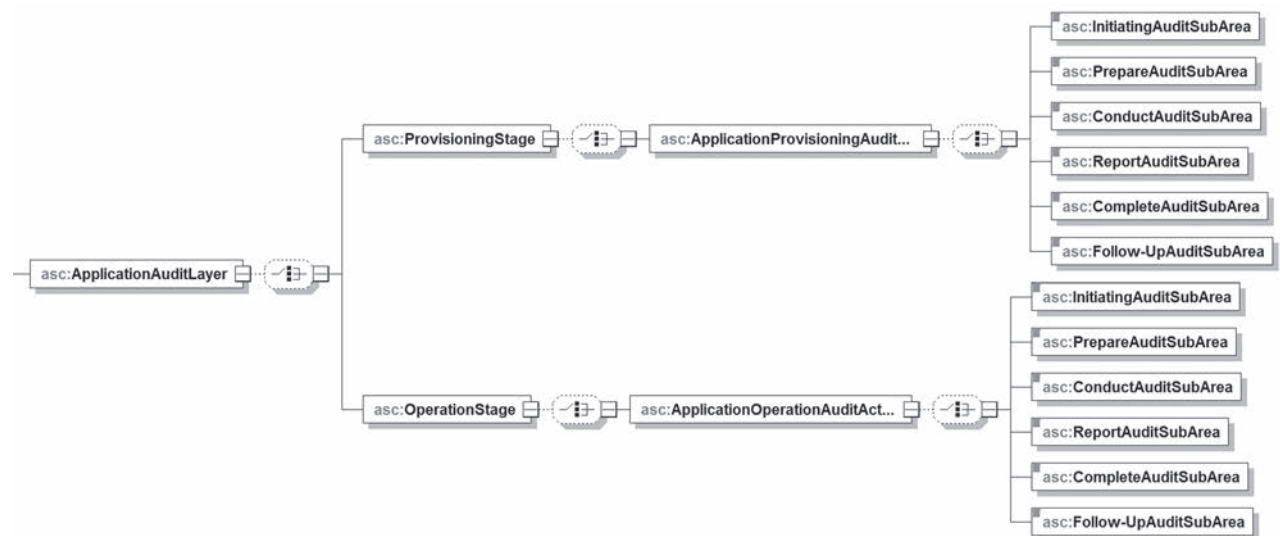


Figure 17 — ASLCRM Application Audit Layer

The element `<asc:ApplicationAuditLayer>` is further structured into sub-elements indicating the stage, activity area and activity sub-area (see Figure 17). With each activity sub-area a set of predefined activity labels is associated as a simple type. These predefined activity labels, as introduced in Figure 17, are

- initiatingAudit_SubAreaActivityLabel (see Table 49),
- prepareAudit_SubAreaActivityLabel (see Table 58),
- conductAudit_SubAreaActivityLabel (see Table 35),
- reportAudit_SubAreaActivityLabel (see Table 61),
- completeAudit_SubAreaActivityLabel (see Table 33), and
- follow-UpAudit_SubAreaActivityLabel (see Table 44).

Table 25 shows the implementation of the element `<asc:ApplicationAuditLayer>` in the XML Schema.

Table 25 — <asc:ApplicationAuditLayer> complex type

```

<xs:element name="ApplicationAuditLayer">
  <xs:complexType>
    <xs:choice minOccurs="0">
      <xs:element name="ProvisioningStage">
        <xs:complexType>
          <xs:choice minOccurs="0">
            <xs:element name="ApplicationProvisioningAuditActivityArea">
              <xs:complexType>
                <xs:choice minOccurs="0">
                  <xs:element name="InitiatingAuditSubArea"
                    type="asc:initiatingAudit_SubAreaActivityLabel"/>
                  <xs:element name="PrepareAuditSubArea"
                    type="asc:prepareAudit_SubAreaActivityLabel"/>
                  <xs:element name="ConductAuditSubArea"
                    type="asc:conductAudit_SubAreaActivityLabel"/>
                  <xs:element name="ReportAuditSubArea"
                    type="asc:reportAudit_SubAreaActivityLabel"/>
                  <xs:element name="CompleteAuditSubArea"
                    type="asc:completeAudit_SubAreaActivityLabel"/>
                  <xs:element name="Follow-UpAuditSubArea"
                    type="asc:follow-UpAudit_SubAreaActivityLabel"/>
                </xs:choice>
              </xs:complexType>
            </xs:element>
          </xs:choice>
        </xs:complexType>
      </xs:element>
      <xs:element name="OperationStage">
        <xs:complexType>
          <xs:choice minOccurs="0">
            <xs:element name="ApplicationOperationAuditActivityArea">
              <xs:complexType>
                <xs:choice minOccurs="0">
                  <xs:element name="InitiatingAuditSubArea"
                    type="asc:initiatingAudit_SubAreaActivityLabel"/>
                  <xs:element name="PrepareAuditSubArea"
                    type="asc:prepareAudit_SubAreaActivityLabel"/>
                  <xs:element name="ConductAuditSubArea"
                    type="asc:conductAudit_SubAreaActivityLabel"/>
                  <xs:element name="ReportAuditSubArea"
                    type="asc:reportAudit_SubAreaActivityLabel"/>
                </xs:choice>
              </xs:complexType>
            </xs:element>
          </xs:choice>
        </xs:complexType>
      </xs:element>
    </xs:choice>
  </xs:complexType>
</xs:element>

```

Table 25 (continued)

<pre> <xs:element name="CompleteAuditSubArea" type="asc:completeAudit_SubAreaActivityLabel"/> <xs:element name="Follow-UpAuditSubArea" type="asc:follow-UpAudit_SubAreaActivityLabel"/> </xs:choice> </xs:complexType> </xs:element> </xs:choice> </xs:complexType> </xs:element> </xs:choice> </xs:complexType> </xs:element> </pre>

5.4.11 Enumeration types

The XML schema defines the following simple enumeration types.

Table 26 — Simple enumeration types

Type	Description
asc:activity-complexity	Enumeration of qualitative complexity indicators of an activity
asc:archival_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:artefact-type	Enumeration of artefact types that may be produced by an activity
asc:ASLCRM_role-nameLabel	Enumeration of role labels defined by the Application Lifecycle Reference Model.
asc:close_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:closing_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:completeAudit_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:condition-type	Enumeration of condition types that can be used to identify a condition
asc:conductAudit_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:construction_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:destruction_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:developSolutionIncrement_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:elaboration_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area

Table 26 (continued)

Type	Description
asc:establishInfra_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:executing_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:execution-interval	Enumeration of execution interval indicators of a task
asc:execution-order	Enumeration of execution order indicators of a task
asc:follow-UpAudit_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:inception_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:information-group-type	Enumeration of groups/types of an information item affected by an activity
asc:initiateProject_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:initiating_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:initiatingAudit_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:life-cycle-stage	Enumeration of life-cycle-stages of an ASC
asc:maintenanceApp_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:maintenanceInfra_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:monitoringAndControlling_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:plan_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:planImplementationIteration_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:planning_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:planProject_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:prepareAudit_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:rasci	Enumeration of RASCI responsibilities
asc:realization_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:reportAudit_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:requirements-context	Enumeration of context types in which a particular requirement is situated
asc:requirements-type	Enumeration of requirement types

Table 26 (continued)

Type	Description
asc:responsibility-matrix-type	Enumeration of responsibility matrix types that can be used to identify an actor's responsibility
asc:testSolution_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:time-unit-type	Enumeration of time units types
asc:transition_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area
asc:utilization_SubAreaActivityLabel	Enumeration of activity labels that can occur in this sub-area

The detailed listing of the enumeration values is given as follows:

Table 27 — <asc:activity-complexity-label> **simpleType**

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	complexity-type-label
facets	Kind	Value
	enumeration	LOW
	enumeration	MEDIUM
	enumeration	HIGH
	enumeration	EXTREME
	enumeration	CUSTOM

Table 28 — <asc:archival_SubAreaActivityLabel> **simpleType**

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/OperationStage/ArchivalActivityArea/ArchivalSubArea
facets	Kind	Value
	enumeration	DEFINE AND REVIEW ORGANIZATION ACQUISITIONS POLICY
	enumeration	DEFINE DATA RETENTION POLICIES
	enumeration	RECORD ACCESS
	enumeration	PRESERVE RECORDS
	enumeration	CONTROL ARCHIVAL USE
	enumeration	PROMOTE ARCHIVES
	enumeration	MANAGE ARCHIVING ADMINISTRATIVE SERVICE
	enumeration	MANAGE ARCHIVING EDUCATIONAL AND RESEARCH SERVICE
	enumeration	MANAGE ARCHIVING PUBLICITY AND PUBLIC PROGRAMS
	enumeration	CUSTOM

Table 29 — <asc:artefact-type> **simpleType**

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	activity/activity-specification/task/outcome/produced-artefact/artefact-type
facets	Kind	Value
	enumeration	REPORT
	enumeration	DOCUMENT
	enumeration	SOURCE_CODE
	enumeration	COMPILED_CODE
	enumeration	EXECUTABLE CODE
	enumeration	SCRIPT
	enumeration	LIBRARY
	enumeration	DIAGRAM
	enumeration	PARAMETER_FILE
	enumeration	LINK
	enumeration	CUSTOM

Table 30 — <asc:ASLCRM_role-nameLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	attribute	activity/activity-specification/task/required-resources/resource-allocation/@ASLCRM_role-name
facets	Kind	Value
	enumeration	ACQUIRER
	enumeration	ANY ROLE
	enumeration	APPLICATION ADMINISTRATOR
	enumeration	APPLICATION ARCHITECT
	enumeration	APPLICATION OPERATOR
	enumeration	APPLICATION OWNER
	enumeration	APPROPRIATE ACCOUNTABLE MANAGEMENT
	enumeration	AUDITOR
	enumeration	CHIEF (INFORMATION) SECURITY OFFICER (CSO/CISO)
	enumeration	DEVELOPER
	enumeration	DOMAIN EXPERT
	enumeration	IT INFRASTRUCTURE ARCHITECT
	enumeration	IT INFRASTRUCTURE EXPERT
	enumeration	LAWS AND REGULATIONS EXPERT
	enumeration	MANAGER
	enumeration	OWNER
	enumeration	PROJECT MANAGER
	enumeration	SECURITY ARCHITECT
	enumeration	SUPPLIER
	enumeration	TESTER
	enumeration	TRAINER
	enumeration	USER
	enumeration	CUSTOM ROLE

Table 31 — <asc:close_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base	xs:string
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/ProvisioningStage/AcquisitionActivityArea/CloseSubArea
facets	Kind	Value
	enumeration	ACQUIRER ACCEPTANCE
	enumeration	CLOSURE
	enumeration	CUSTOM

Table 32 — <asc:closing_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationManagementLayer/ProvisioningStage/ProvisioningActivityArea/ClosingSubArea ASLCRM_activity-name/ApplicationManagementLayer/OperationStage/OperationActivityArea/ClosingSubArea
facets	Kind	Value
	enumeration	PERFORM FINAL REVIEW OF UNRESOLVED ISSUES
	enumeration	PERFORM A REVIEW OF IMPORTANT PROBLEMS SOLVED AND LESSONS LEARNED
	enumeration	SUBMIT THIS REVIEW BACK TO RELEVANT ORGANIZATION BODIES FOR CONTINUOUS IMPROVEMENT PURPOSES
	enumeration	CLOSE PROJECT OF PHASE
	enumeration	CLOSE PROCUREMENT
	enumeration	CUSTOM

Table 33 — <asc:completeAudit_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationAuditLayer/ProvisioningStage/ApplicationProvisioningAuditActivityArea/CompleteAuditSubArea ASLCRM_activity-name/ApplicationAuditLayer/OperationStage/ApplicationOperationAuditActivityArea/CompleteAuditSubArea
facets	Kind	Value
	enumeration	DOCUMENT AND CONDUCT LESSONS LEARNED
	enumeration	ARCHIVE AND DESTROY EVIDENCES IN ACCORDANCE WITH THE CONTRACT AND APPLICABLE REGULATIONS
	enumeration	CUSTOM

Table 34 — <asc:condition-type> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	attribute	asc/content/objective/conditions/@condition-type
facets	Kind	Value
	enumeration	PRECONDITION
	enumeration	ASSUMPTION
	enumeration	OPERATING ENVIRONMENT DESCRIPTION
	enumeration	CUSTOM

Table 35 — <asc:conductAudit_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationAuditLayer/ProvisioningStage/Application-ProvisioningAuditActivityArea/ConductAuditSubArea ASLCRM_activity-name/ApplicationAuditLayer/OperationStage/ApplicationOperationAuditActivityArea/ConductAuditSubArea
facets	Kind	Value
	enumeration	CONDUCT THE OPENING MEETING
	enumeration	ASSIGN ROLES AND RESPONSIBILITIES OF GUIDES AND OBSERVERS
	enumeration	REFINE UNDERSTANDING OF AUDIT OBJECTIVES AND REFINE AUDIT SCOPE
	enumeration	COMMUNICATE WITH MANAGEMENT DURING EXECUTION OF THE INITIATIVE TO FACILITATE UNDERSTANDING OF AUDIT WORK, APPROVAL OF AUDIT SCOPE CHANGES, AGREEMENT WITH AUDIT FINDINGS AS WELL AS AWARENESS OF ILLEGAL ACTIVITIES AND OTHER IRREGULARITIES
	enumeration	SUPERVISE AND CONDUCT WORK IN ACCORDANCE WITH THE APPROVED AUDIT PLAN TO COVER IDENTIFIED RISK WITHIN AGREED UPON SCHEDULE
	enumeration	OBTAIN SUFFICIENT AND APPROPRIATE EVIDENCE TO CONDUCT ANALYSIS AND DRAW REASONABLE CONCLUSIONS REGARDING THE EFFECTIVENESS OF CONTROL DESIGN AND/OR THE OUTCOME OF CONTROL OBJECTIVES
	enumeration	APPLY ADDITIONAL TEST PROCEDURES TO GAIN SUFFICIENT AND APPROPRIATE EVIDENCE IN CIRCUMSTANCES WHERE THE WORK OF INTERNAL AND/OR EXTERNAL EXPERTS DOES NOT PROVIDE SUFFICIENT AND APPROPRIATE EVIDENCE
	enumeration	CONSIDER CUMULATIVE EFFECT OR MINOR CONTROL DEFICIENCIES OR WEAKNESSES AND WHETHER THE ABSENCE OF CONTROLS TRANSLATES INTO A SIGNIFICANT DEFICIENCY OR WEAKNESS
	enumeration	PREPARE AN APPROPRIATE AUDIT OPINION OR CONCLUSION, SUPPORTED BY ANALYSIS AND EVIDENCE AND INCLUDE ANY SCOPE LIMITATION WHERE REQUIRED EVIDENCE IS NOT OBTAINED THROUGH ADDITIONAL TEST PROCEDURES
	enumeration	CONDUCT THE CLOSING MEETING
	enumeration	CUSTOM

Table 36 — <asc:construction_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/ProvisioningStage/DevelopmentActivityArea/ConstructionSubAre
facets	Kind	Value
	enumeration	PLAN AND MANAGE ITERATION
	enumeration	IDENTIFY AND REFINE REQUIREMENTS
	enumeration	DEVELOP THE ARCHITECTURE
	enumeration	DEVELOP SOLUTION INCREMENT
	enumeration	TEST SOLUTION
	enumeration	ONGOING TASKS
	enumeration	CUSTOM

Table 37 — <asc:destruction_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/OperationStage/Destruction-ActivityArea/DestructionSubArea
facets	Kind	Value
	enumeration	DEFINE GENERAL DISPOSAL SCHEDULES
	enumeration	DEFINE RECORDS CLASSIFICATION AND RETENTION SCHEDULES
	enumeration	DEFINE OPERATIONAL RECORDS DISPOSAL SCHEDULES
	enumeration	DEFINE TRANSFER OF OWNERSHIP AND CUSTODY SCHEDULES
	enumeration	DEFINE NORMAL ADMINISTRATIVE PRACTICE
	enumeration	DEFINE RECORDKEEPING PRACTICES
	enumeration	DEFINE A DISPOSAL ACTION PRACTICE
	enumeration	MANAGE MACHINERY OF ORGANIZATION CHANGES
	enumeration	DETERMINE THE DISPOSAL ACTION
	enumeration	AUTHORIZE RECORDS DESTRUCTION
	enumeration	MANAGE RECORDKEEPING PRACTICES
	enumeration	PREPARE RECORDS FOR DESTRUCTION APPROVAL
	enumeration	SELECT THE RECORDS REMOVAL PROCESS
	enumeration	PERFORM THE RECORDS REMOVAL PROCESS
	enumeration	PERFORM THE RECORDS REMOVAL VERIFICATION PROCESS
	enumeration	MONITOR AND REVIEW RECORDS MANAGEMENT PERFORMANCE
	enumeration	REPORT KEY PERFORMANCE INFORMATION TO MANAGEMENT
	enumeration	IMPLEMENT A REGULAR REPORTING REGIME TO ENABLE THE MONITORING AND REVIEWING OF RECORDS MANAGEMENT PERFORMANCE
	enumeration	PERFORM A RECORDS MANAGEMENT ASSESSMENT SURVEY
	enumeration	CUSTOM

Table 38 — <asc:developSolutionIncrement_SubAreaActivityLabel> **simpleType**

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base	xs:string
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/ProvisioningStage/TransitionActivityArea/DevelopSolutionIncrementSubArea
facets	Kind	Value
	enumeration	DESIGN THE SOLUTION
	enumeration	IMPLEMENT DEVELOPER TESTS
	enumeration	IMPLEMENT SOLUTION
	enumeration	RUN DEVELOPER TESTS
	enumeration	INTEGRATE AND CREATE BUILD
	enumeration	CUSTOM

Table 39 — <asc:elaboration_SubAreaActivityLabel> **simpleType**

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base	xs:string
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/ProvisioningStage/DevelopmentActivityArea/ElaborationSubArea
facets	Kind	Value
	enumeration	PLAN AND MANAGE ITERATION
	enumeration	IDENTIFY AND REFINE REQUIREMENTS
	enumeration	DEVELOP THE ARCHITECTURE
	enumeration	DEVELOP SOLUTION INCREMENT
	enumeration	TEST SOLUTION
	enumeration	ONGOING TASKS
	enumeration	CUSTOM

Table 40 — <asc:establishInfra_SubAreaActivityLabel> **simpleType**

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationInfrastructureLayer/OperationStage/DisposalInfrastructureManagement/EstablishArchivalDisposalSubArea ASLCRM_activity-name/ApplicationInfrastructureLayer/ProvisioningStage/ProvisioningInfrastructureManagementActivityArea/EstablishInfraSubArea ASLCRM_activity-name/ApplicationInfrastructureLayer/OperationStage/OperationInfrastructureManagement/EstablishInfraSubArea
facets	Kind	Value
	enumeration	ADJUST, PREPARE AND SETUP THE DEVELOPMENT, TESTS, OPERATIONAL AND ARCHIVAL ENVIRONMENTS
	enumeration	DRAW UP AND UPDATE CONFIGURATION DOCUMENTS
	enumeration	VALIDATE AND UPDATE THE CONTINUITY PLAN AND CONTINGENCY PLANS
	enumeration	DRAW UP USER HANDBOOK
	enumeration	DRAW UP ADMINISTRATOR HANDBOOK
	enumeration	ADJUST CORPORATE PROCEDURES AND POLICIES IMPACTED BY THE ON LIN- ING OF THE SYSTEM AND INFORM ACTORS AND STAKEHOLDERS AFFECTED BY THESE CHANGES
	enumeration	PROCEED WITH ACCEPTANCE TESTS FOR THE MAIN GLOBAL FUNCTIONALITIES
	enumeration	CUSTOM

Table 41 — <asc:executing_SubAreaActivityLabel> **simpleType**

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationManagementLayer/ProvisioningStage/Pro- visioningActivityArea/ExecutingSubArea ASLCRM_activity-name/Application- ManagementLayer/OperationStage/OperationActivityArea/ExecutingSubArea
facets	Kind	Value
	enumeration	DIRECT AND MANAGE PROJECT EXECUTION
	enumeration	PERFORM ASSURANCE QUALITY
	enumeration	ACQUIRE PROJECT TEAM
	enumeration	DEVELOP PROJECT TEAM
	enumeration	MANAGE PROJECT TEAM
	enumeration	DISTRIBUTE INFORMATION
	enumeration	MANAGE STAKEHOLDER EXPECTATION
	enumeration	CONDUCT PROCUREMENT
	enumeration	CUSTOM

Table 42 — <asc:execution-intervalLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	attribute	activity/activity-specification/task/execution-moments/moment/interval-value/@frequency
facets	Kind	Value
	enumeration	ONCE
	enumeration	PERIODIC
	enumeration	ON_EVENT
	enumeration	CUSTOM

Table 43 — <asc:execution-order> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	activity/activity-specification/task/execution-moments/moment/execution-order
facets	Kind	Value
	enumeration	BEFORE
	enumeration	DURING
	enumeration	AFTER
	enumeration	CUSTOM

Table 44 — <asc:follow-UpAudit_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationAuditLayer/ProvisioningStage/Application-ProvisioningAuditActivityArea/Follow-UpAuditSubArea ASLCRM_activity-name/ApplicationAuditLayer/OperationStage/ApplicationOperationAuditActivityArea/Follow-UpAuditSubArea
facets	Kind	Value
	enumeration	CONDUCT FOLLOW-UP MEETING
	enumeration	REVIEW ACTION PLAN AND ACTIONS TAKEN
	enumeration	DETERMINE WHETHER PLAN AND ACTIONS TAKEN WERE APPROPRIATE TO ADDRESS REPORTED AUDIT FINDINGS AND RECOMMENDATIONS
	enumeration	CUSTOM

Table 45 — <asc:inception_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/ProvisioningStage/DevelopmentActivityArea/InceptionSubArea
facets	Kind	Value
	enumeration	INITIATE PROJECT
	enumeration	PLAN AND MANAGE ITERATION
	enumeration	IDENTIFY AND REFINE REQUIREMENTS
	enumeration	AGREE ON TECHNICAL APPROACH
	enumeration	CUSTOM

Table 46 — <asc:information-group-type> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	activity/synopsis/target-information/infomation-item/information-group-type
facets	Kind	Value
	enumeration	LAWS_AND_REGULATIONS
	enumeration	ORGANIZATION OR BUSINESS LINE DIRECTIVES AND REGULATIONS
	enumeration	APPLICATION_LIFE_CYCLE_PROCESSES
	enumeration	APPLICATION_PROCESSES_DEFINITION
	enumeration	SPECIFICATION
	enumeration	APPLICATION_DATA
	enumeration	ORGANIZATION_AND_USER_DATA
	enumeration	ROLES_PERMISSION_DEFINITION
	enumeration	TECHNOLOGICAL_CONTEXT_DEFINITION
	enumeration	CUSTOM

Table 47 — <asc:initiateProject_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/ProvisioningStage/PreparationActivityArea/InitiateProjectSubArea
facets	Kind	Value
	enumeration	DEVELOP TECHNICAL VISION
	enumeration	VALIDATE THE APPLICATION SCOPE CONTEXTS AND SPECIFICATIONS
	enumeration	IDENTIFY AND BROADLY CATEGORIZE INFORMATION WHICH WILL BE PROCESSED BY THE SYSTEM
	enumeration	PERFORM AN INITIAL HIGH LEVEL APPLICATION RISK ANALYSIS
	enumeration	DEFINE SECURITY NEEDS AND THE APPLICATION TARGETED LEVEL OF TRUST
	enumeration	SELECT ASCS ACCORDINGLY TO THIS LEVEL
	enumeration	ASSESS THE COSTS AND EFFORTS RELATED TO SECURITY ACTIVITIES AND TO ADDING THESE CONCERNS IN REGULAR PROJECT ACTIVITIES
	enumeration	DEFINE AND ACQUIRE SELECTED ACSS BY THE APPLICATION TARGETED LEVEL OF TRUST
	enumeration	DEFINE SECURITY AND VERIFICATION AND MEASUREMENT ACTIVITIES FROM THE ASC SELECTED BY THE APPLICATION TARGETED LEVEL OF TRUST
	enumeration	CUSTOM

Table 48 — <asc:initiating_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationManagementLayer/ProvisioningStage/ProvisioningActivityArea/InitiatingSubArea ASLCRM_activity-name/ApplicationManagementLayer/OperationStage/OperationActivityArea/InitiatingSubArea
facets	Kind	Value
	enumeration	DEVELOP APPLICATION PROJECT CHARTER FOR ITS REALIZATION
	enumeration	IDENTIFY NECESSARY SKILLS
	enumeration	IDENTIFY STAKEHOLDERS
	enumeration	APPOINT APPLICATION OWNER
	enumeration	APPOINT APPLICATION ARCHITECT
	enumeration	APPOINT APPLICATION SECURITY ARCHITECT
	enumeration	MANAGE KNOWLEDGE
	enumeration	DEVELOP, ACQUIRE OR PROVIDE SKILLS
	enumeration	MAP APPLICATION LIFE CYCLES USED IN THE ORGANIZATION TO THE REFERENCE MODEL
	enumeration	CUSTOM

Table 49 — <asc:initiatingAudit_SubAreaActivityLabel> **simpleType**

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationAuditLayer/ProvisioningStage/ApplicationProvisioningAuditActivityArea/InitiatingAuditSubArea ASLCRM_activity-name/ApplicationAuditLayer/OperationStage/ApplicationOperationAuditActivityArea/InitiatingAuditSubArea
facets	Kind	Value
	enumeration	ESTABLISH INITIAL CONTACT WITH THE AUDITEE
	enumeration	CONFIRM THE AUTHORITY TO CONDUCT THE AUDIT
	enumeration	PROVIDE INFORMATION ON THE AUDIT OBJECTIVES, SCOPE, METHODS AND AUDIT TEAM COMPOSITION, INCLUDING TECHNICAL EXPERTS
	enumeration	REQUEST ACCESS TO RELEVANT DOCUMENTS AND RECORDS
	enumeration	DETERMINE APPLICABLE LEGAL AND CONTRACTUAL REQUIREMENTS AND OTHER REQUIREMENTS RELEVANT TO THE ACTIVITIES AND PRODUCTS OF THE AUDITEE
	enumeration	CONFIRM THE AGREEMENT WITH THE AUDITEE REGARDING THE EXTENT OF THE DISCLOSURE AND THE TREATMENT OF CONFIDENTIAL INFORMATION
	enumeration	AGREE ON THE ATTENDANCE OF OBSERVERS AND THE NEED FOR GUIDES FOR THE AUDIT TEA
	enumeration	IDENTIFY ENGAGEMENT SPECIFIC ISSUES INCLUDING THOSE RELATED TO THE ENGAGEMENT LOCATION OR THE AUDITEE'S AREAS OF INTEREST AND CONCERNS
	enumeration	LIMIT TASKS BASED BASED ON FEASIBILITY DUE TO TIME AND RESOURCES CONSTRAINTS AS WELL AS THE AUDITEES COOPERATION
	enumeration	MAKE ARRANGEMENTS FOR THE AUDIT INCLUDING SCHEDULING THE DATES
	enumeration	CUSTOM

Table 50 — <asc:life-cycle-stage> **simpleType**

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	asc/approval-e-signatures/approval-stage/approval-stage-type
	attribute	asc/content/identification/version/@life-cycle-stage
facets	Kind	Value
	enumeration	CREATION_REQUEST
	enumeration	DESIGN
	enumeration	DESIGN_REVIEW_AND_VALIDATION
	enumeration	DEVELOPMENT
	enumeration	VERIFICATION
	enumeration	APPROVAL
	enumeration	OWNERS_FINAL_APPROVAL
	enumeration	PUBLISHED_FOR_TRAINING
	enumeration	ACTIVE
	enumeration	EXPIRED
	enumeration	CUSTOM

Table 51 — <asc:maintenanceApp_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/OperationStage/UtilizationActivityArea/MaintenanceAppSubArea
facets	Kind	Value
	enumeration	MAINTENANCE RESPONSIBILITY AND COMMUNICATIONS
	enumeration	MAINTENANCE INFORMATION GATHERING FINDINGS
	enumeration	MAINTENANCE ACTION PLAN
	enumeration	MAINTENANCE PROCESS AND SERVICE DEFINITION
	enumeration	MAINTENANCE TRAINING
	enumeration	MAINTENANCE PROCESS PERFORMANCE
	enumeration	MAINTENANCE INNOVATION AND DEPLOYMENT
	enumeration	EVENT AND REQUEST MANAGEMENT
	enumeration	MAINTENANCE PLANNING
	enumeration	REQUESTS AND EVENTS MONITORING AND CONTROL
	enumeration	SLA AND SUPPLIER AGREEMENTS MANAGEMENT
	enumeration	PREDELIVERY AND TRANSITION SERVICES
	enumeration	OPERATIONAL SUPPORT SERVICES
	enumeration	SOFTWARE EVOLUTION AND CORRECTION SERVICES
	enumeration	VERIFICATION AND VALIDATION
	enumeration	CONFIGURATION AND VERSION MANAGEMENT
	enumeration	PROCESS, SERVICE AND SOFTWARE (PRODUCT) QUALITY ASSURANCE
	enumeration	MAINTENANCE MEASUREMENT AND ANALYSIS
	enumeration	CAUSAL ANALYSIS AND PROBLEM RESOLUTION
	enumeration	SOFTWARE REJUVENATION, MIGRATION AND RETIREMENT
	enumeration	CUSTOM

Table 52 — <asc:maintenanceInfra_SubAreaActivityLabel> **simpleType**

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base	xs:string
used by	element	ASLCRM_activity-name/ApplicationInfrastructureLayer/OperationStage/DisposalInfrastructureManagement/MaintenanceArchivalDisposalSubArea ASLCRM_activity-name/ApplicationInfrastructureLayer/ProvisioningStage/ProvisioningInfrastructureManagementActivityArea/MaintenanceInfraSubArea ASLCRM_activity-name/ApplicationInfrastructureLayer/OperationStage/OperationInfrastructureManagement/MaintenanceInfraSubArea
facets	Kind	Value
	enumeration	MAINTAIN THE SYSTEM AT THE EXPECTED DEGREE OF TRUST
	enumeration	APPLY BEST PRACTICES IN IDENTITY AND CONFIGURATION MANAGEMENT
	enumeration	PERFORM PERIODICALLY AUDITS AND INTERNAL SECURITY TESTS
	enumeration	PERFORM CHANGES CONTROL
	enumeration	PREPARE OPERATIONAL ENVIRONMENTS
	enumeration	DRAW UP AND UPDATE CONFIGURATION DOCUMENTS
	enumeration	VALIDATE AND UPDATE THE CONTINUITY PLAN AND CONTINGENCY PLANS
	enumeration	DRAW UP USER HANDBOOK
	enumeration	DRAW UP ADMINISTRATOR HANDBOOK
	enumeration	ADJUST CORPORATE PROCEDURES AND POLICIES IMPACTED BY THE ON LIN- ING OF THE SYSTEM AND INFORM ACTORS AND STAKEHOLDERS AFFECTED BY THESE CHANGES
	enumeration	CUSTOM

Table 53 — <asc:monitoringAndControlling_SubAreaActivityLabel> **simpleType**

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base	xs:string
used by	element	ASLCRM_activity-name/ApplicationManagementLayer/ProvisioningStage/ProvisioningActivityArea/MonitoringAndControllingSubArea ASLCRM_acti- vity-name/ApplicationManagementLayer/OperationStage/OperationActivityAr- ea/MonitoringAndControllingSubArea
facets	Kind	Value
	enumeration	MONITOR AND CONTROL PROJECT WORK
	enumeration	PERFORM INTEGRATED CHANGE CONTROL
	enumeration	VERIFY SCOPE
	enumeration	CONTROL SCOPE
	enumeration	CONTROL SCHEDULE
	enumeration	CONTROL COST
	enumeration	PERFORM QUALITY CONTROL
	enumeration	REPORT PERFORMANCE
	enumeration	MONITOR AND CONTROL RISKS
	enumeration	ADMINISTER PROCUREMENTS
	enumeration	CUSTOM

Table 54 — <asc:plan_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/ProvisioningStage/AcquisitionActivityArea/PlanSubArea
facets	Kind	Value
	enumeration	ACQUISITION PREPARATION
	enumeration	ACQUISITION ADVERTISEMENT
	enumeration	SUPPLIER SELECTION
	enumeration	CONTRACT AGREEMENT
	enumeration	AGREEMENT MONITORING
	enumeration	CUSTOM

Table 55 — <asc:planImplementationIteration_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/ProvisioningStage/TransitionActivityArea/PlanImplementationIterationSubArea
facets	Kind	Value
	enumeration	PLAN ITERATION
	enumeration	MANAGE ITERATION
	enumeration	ASSESS RESULTS
	enumeration	CUSTOM

Table 56 — <asc:planning_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationManagementLayer/ProvisioningStage/ProvisioningActivityArea/PlanningSubArea ASLCRM_activity-name/Application-ManagementLayer/OperationStage/OperationActivityArea/PlanningSubArea
facets	Kind	Value
	enumeration	DEVELOP PROJECT MANAGEMENT PLAN
	enumeration	COLLECT REQUIREMENTS
	enumeration	DEFINE SCOPE
	enumeration	PLAN THE APPLICATION SECURITY RISK MANAGEMENT
	enumeration	PLAN PROJECT RISK MANAGEMENT
	enumeration	CREATE THE WORK BREAKDOWN STRUCTURE
	enumeration	DEFINE ACTIVITIES
	enumeration	SEQUENCES ACTIVITIES
	enumeration	ESTIMATE ACTIVITIES RESOURCES
	enumeration	ESTIMATE ACTIVITIES DURATION
	enumeration	DEVELOP SCHEDULE
	enumeration	ESTIMATE COST
	enumeration	DETERMINE BUDGET
	enumeration	PLAN QUALITY
	enumeration	DEVELOP HUMAN RESOURCE PLAN
	enumeration	PLAN COMMUNICATION
	enumeration	PLAN PROCUREMENTS
	enumeration	CUSTOM

Table 57 — <asc:planProject_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/ProvisioningStage/PreparationActivityArea/PlanProjectSubArea
facets	Kind	Value
	enumeration	DEFINE AND PLAN THE REQUIRED STAGES AND ACTIVITIES AREAS FROM THE ASLC REFERENCE MODEL
	enumeration	PLAN SECURITY AND VERIFICATION AND MEASUREMENT ACTIVITIES FROM THE ASC SELECTED BY THE APPLICATION TARGETED LEVEL OF TRUST
	enumeration	CUSTOM

Table 58 — <asc:prepareAudit_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationAuditLayer/ProvisioningStage/Application-ProvisioningAuditActivityArea/PrepareAuditSubArea ASLCRM_activity-name/ApplicationAuditLayer/OperationStage/ApplicationOperationAuditActivityArea/PrepareAuditSubArea
facets	Kind	Value
	enumeration	REVIEW AND EVALUATE AUDIT OBJECTIVES AND SCOPE
	enumeration	REVIEW AND DETERMINE RISK OF MATTERS RELEVANT TO THE AUDITEE'S INDUSTRY INCLUDING ECONOMIC CONDITIONS, LAWS AND REGULATIONS AND TECHNOLOGICAL CHANGES
	enumeration	REVIEW AND DETERMINE RISK OF AUDITEE'S STRUCTURE, KEY BUSINESS PROCESSES, NETWORKS, SYSTEMS AND APPLICATIONS
	enumeration	REVIEW AND EVALUATE REPORTS OF PRIOR AUDIT ENGAGEMENTS AS WELL AS THE WORK OF OTHER EXPERTS EXTERNAL TO THE AUDIT TEAM
	enumeration	CONSIDER THE RISK OF IRREGULARITIES AND ILLEGAL ACTS DURING THE ENGAGEMENT
	enumeration	CONSIDER THE RISK THE AUDIT POSES TO THE AUDITEES ORGANIZATION
	enumeration	CONSIDER POTENTIAL WEAKNESSES OR ABSENCES OF CONTROLS AND THEIR POTENTIAL IMPACT ON AUDIT FINDINGS
	enumeration	DEFINE ENGAGEMENT PLAN INCLUDING AUDIT SCOPE, OBJECTIVES, RISKS, COMMUNICATION PLAN, TIMELINE, RESOURCE ALLOCATION AND DELIVERABLES
	enumeration	DEFINE PRACTICES FOR GATHERING AND EVALUATING INFORMATION FROM PROCESS(ES) UNDER REVIEW
	enumeration	DEFINE PRACTICES TO VALIDATE CONTROL DESIGN AND OUTCOMES
	enumeration	DEFINE PRACTICES TO IDENTIFY RESIDUAL RISK, WHERE CONTROL EFFECTIVENESS IS NOT ACCEPTABLE
	enumeration	CUSTOM

Table 59 — <asc:rasciLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	activity/activity-specification/task/required-resources/resource-allocation/responsibility
facets	Kind	Value
	enumeration	RESPONSIBLE
	enumeration	ACCOUNTABLE
	enumeration	SUPPORT
	enumeration	CONSULTED
	enumeration	INFORMED

Table 60 — <asc:realization_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/ProvisioningStage/Out-sourcingActivityArea/RealizationSubArea
facets	Kind	Value
	enumeration	OUTSOURCING PREPARATION
	enumeration	OUTSOURCING ADVERTISEMENT
	enumeration	SUPPLIER SELECTION
	enumeration	CONTRACT AGREEMENT
	enumeration	AGREEMENT MONITORING
	enumeration	CUSTOM

Table 61 — <asc:reportAudit_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationAuditLayer/ProvisioningStage/Application-ProvisioningAuditActivityArea/ReportAuditSubArea ASLCRM_activity-name/ApplicationAuditLayer/OperationStage/ApplicationOperationAuditActivityArea/ReportAuditSubArea
facets	Kind	Value
	enumeration	PROVIDE A REPORT IN ALIGNMENT WITH AGREED UPON REPORTING STANDARDS
	enumeration	DISTRIBUTE THE AUDIT REPORT ACCORDING TO RESTRICTIONS ON CIRCULATION
	enumeration	CUSTOM

Table 62 — <asc:requirements-context> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	asc/content/objective/requirements-addressed/requirement/context
facets	Kind	Value
	enumeration	REGULATORY_CONTEXT
	enumeration	BUSINESS_CONTEXT
	enumeration	TECHNOLOGICAL_CONTEXT
	enumeration	APPLICATION_FUNCTIONNALITY
	enumeration	CUSTOM

Table 63 — <asc:requirements-type> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	asc/content/objective/requirements-addressed/requirement/type
facets	Kind	Value
	enumeration	BUSINESS_REQUIREMENTS
	enumeration	BUSINESS_RULES
	enumeration	REGULATORY_REQUIREMENTS
	enumeration	USER_REQUIREMENTS
	enumeration	ACTOR_QUALIFICATIONS_REQUIREMENTS
	enumeration	QUALITY_ATTRIBUTES
	enumeration	SYSTEM_REQUIREMENTS
	enumeration	PROCESS_REQUIREMENTS
	enumeration	FUNCTIONAL_REQUIREMENTS
	enumeration	EXTERNAL_INTERFACES
	enumeration	INFRASTRUCTURE_REQUIREMENTS
	enumeration	CONSTRAINTS
	enumeration	CUSTOM

Table 64 — <asc:responsibility-matrix-type> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	attribute	activity/activity-specification/@responsibility-matrix-ref
facets	Kind	Value
	enumeration	RACI
	enumeration	RASCI

Table 65 — <asc:testSolution_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/ProvisioningStage/TransitionActivityArea/TestSolutionSubArea
facets	Kind	Value
	enumeration	IMPLEMENT TESTS
	enumeration	RUN TESTS
	enumeration	CUSTOM

Table 66 — <asc:time-unit> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	attributes	activity/activity-specification/task/execution-moments/moment/interval-value/@time-unit activity/activity-specification/task/task-estimated-effort/@time-unit complexity-type/global-estimated-effort/@time-unit complexity-type/global-estimated-time/@time-unit
facets	Kind	Value
	enumeration	SECONDS
	enumeration	MINUTES
	enumeration	HOURS
	enumeration	DAYS
	enumeration	WEEKS
	enumeration	MONTHS
	enumeration	SEMESTERS
	enumeration	YEARS
	enumeration	CUSTOM

Table 67 — <asc:transition_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/ProvisioningStage/Out-sourcingActivityArea/TransitionSubArea
facets	Kind	Value
	enumeration	ACQUIRER ACCEPTANCE
	enumeration	CLOSURE
	enumeration	CUSTOM

Table 68 — <asc:utilization_SubAreaActivityLabel> simpleType

namespace	http://iso.org/ISO27034/ASC-structure	
type	restriction of xs:string	
properties	base xs:string	
used by	element	ASLCRM_activity-name/ApplicationSupplyLayer/OperationStage/UtilizationActivityArea/UtilizationAppSubArea
facets	Kind	Value
	enumeration	IDENTIFY ORGANIZATION PROCESSES IMPACTED BY THE APPLICATION
	enumeration	ADAPT RELEVANT ORGANIZATION PROCESSES TO THE APPLICATION
	enumeration	DEFINE ROLES
	enumeration	IDENTIFY INFORMATION GROUPS (RECORDS)
	enumeration	ACCESS APPLICATION RISK ANALYSIS
	enumeration	ASSIGN ROLES, RESPONSABILITIES, QUALIFICATIONS AND PERMISSIONS
	enumeration	APPROVE AND MANAGE ACCESS REQUESTS
	enumeration	PROVIDE TRAINING TO USERS
	enumeration	EXECUTE APPLICATION'S PROCESSES AND SERVICES
	enumeration	FULFILL REQUESTS
	enumeration	MANAGE INCIDENTS
	enumeration	MANAGE PROBLEMS
	enumeration	MANAGE ACCESS
	enumeration	MANAGE EVENTS
	enumeration	MANAGE CHANGES REQUEST
	enumeration	PERFORM RESPONSIVE AND OPERATIONAL VALIDATION
	enumeration	MONITOR AND CONTROL APPLICATION'S ACTIVITIES
	enumeration	MONITOR AND CONTROL APPLICATION'S RESSOURCES UTILIZATION
	enumeration	CUSTOM

