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Technical Specification

**Universal Mobile Telecommunications System (UMTS);
LTE;
Telecommunication management;
Self-Configuration of Network Elements
Integration Reference Point (IRP)
(3GPP TS 32.505 version 9.1.0 Release 9)**



Reference

RTS/TSGS-0532505v910

Keywords

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Foreword

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- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document is part of a TS-family covering the 3rd Generation Partnership Project Technical Specification Group Services and System Aspects, Telecommunication management; as identified below:

- 32.501: Self-Configuration of Network Elements; Concepts and Integration Reference Point (IRP) Requirements
- 32.502: Self-Configuration of Network Elements Integration Reference Point (IRP); Information Service (IS)
- 32.503: Self-Configuration of Network Elements Integration Reference Point (IRP); Common Object Request Broker Architecture (CORBA) Solution Set (SS)
- 32.505: Self-Configuration of Network Elements Integration Reference Point (IRP); eXtensible Markup Language (XML) file format definition.**

1 Scope

The present document is the "XML file format definition" of Self-Configuration IRP (SCIRP) for the IRP whose semantics are specified in Self-Configuration IRP Information Service (3GPP TS 32.502 [2]).

This file format definition specification is related to TS 32.502 V9.0.X.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TS 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions".
- [2] 3GPP TS 32.502: "Telecommunication management; Self-Configuration of Network Elements Integration Reference Point (IRP); Information Service (IS)".
- [3] W3C REC-xml-20001006: "Extensible Markup Language (XML) 1.0 (Second Edition)".
- [4] W3C REC-xmlschema-0-20010502: "XML Schema Part 0: Primer".
- [5] W3C REC-xmlschema-1-20010502: "XML Schema Part 1: Structures".
- [6] W3C REC-xmlschema-2-20010502: "XML Schema Part 2: Datatypes".
- [7] W3C REC-xml-names-19990114: "Namespaces in XML".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

IRP: See 3GPP TS 32.150 [1].

IRPAgent: See 3GPP TS 32.150 [1].

IRPManager: See 3GPP TS 32.150 [1].

Self Configuration: The process which brings a network element into service requiring minimal human operator intervention or none at all.

XML file: file containing an XML document

XML document: composed of the succession of an optional XML declaration followed by a root XML element

NOTE: See [3]; in the scope of the present document.

XML declaration: it specifies the version of XML being used

NOTE: See [3].

XML element: has a type, is identified by a name, may have a set of XML attribute specifications and is either composed of the succession of an XML start-tag followed by the XML content of the XML element followed by an XML end-tag, or composed simply of an XML empty-element tag; each XML element may contain other XML elements

NOTE: See [3].

empty XML element: having an empty XML content; an empty XML element still possibly has a set of XML attribute specifications; an empty XML element is either composed of the succession of an XML start-tag directly followed by an XML end-tag, or composed simply of an XML empty-element tag

NOTE: See [3].

XML content (of an XML element): empty if the XML element is simply composed of an XML empty-element tag; otherwise the part, possibly empty, of the XML element between its XML start-tag and its XML end-tag

XML start-tag: the beginning of a non-empty XML element is marked by an XML start-tag containing the name and the set of XML attribute specifications of the XML element

NOTE: See [3].

XML end-tag: the end of a non-empty XML element is marked by an XML end-tag containing the name of the XML element

NOTE: See [3].

XML empty-element tag: composed simply of an empty-element tag containing the name and the set of XML attribute specifications of the XML element.

NOTE: See [3].

XML attribute specification: has a name and a value

NOTE: See [3].

DTD: defines structure and content constraints to be respected by an XML document to be valid with regard to this DTD

NOTE: See [3].

XML schema: more powerful than a DTD, an XML schema defines structure and content constraints to be respected by an XML document to conform with this XML schema; through the use of XML namespaces several XML schemas can be used together by a single XML document; an XML schema is itself also an XML document that shall conform with the XML schema for XML schemas

NOTE: See [4], [5] and [6].

XML namespace: enables qualifying element and attribute names used in XML documents by associating them with namespaces identified by different XML schemas

NOTE: See [7], in the scope of the present document.

XML complex type: defined in an XML schema; cannot be directly used in an XML document; can be the concrete type or the derivation base type for an XML element type or for another XML complex type; ultimately defines constraints for an XML element on its XML attribute specifications and/or its XML content

NOTE: See [4], [5] and [6].

XML element type: declared by an XML schema; can be directly used in an XML document; as the concrete type of an XML element, directly or indirectly defines constraints on its XML attribute specifications and/or its XML content; can also be the concrete type or the derivation base type for another XML element type

NOTE: See [4], [5] and [6].

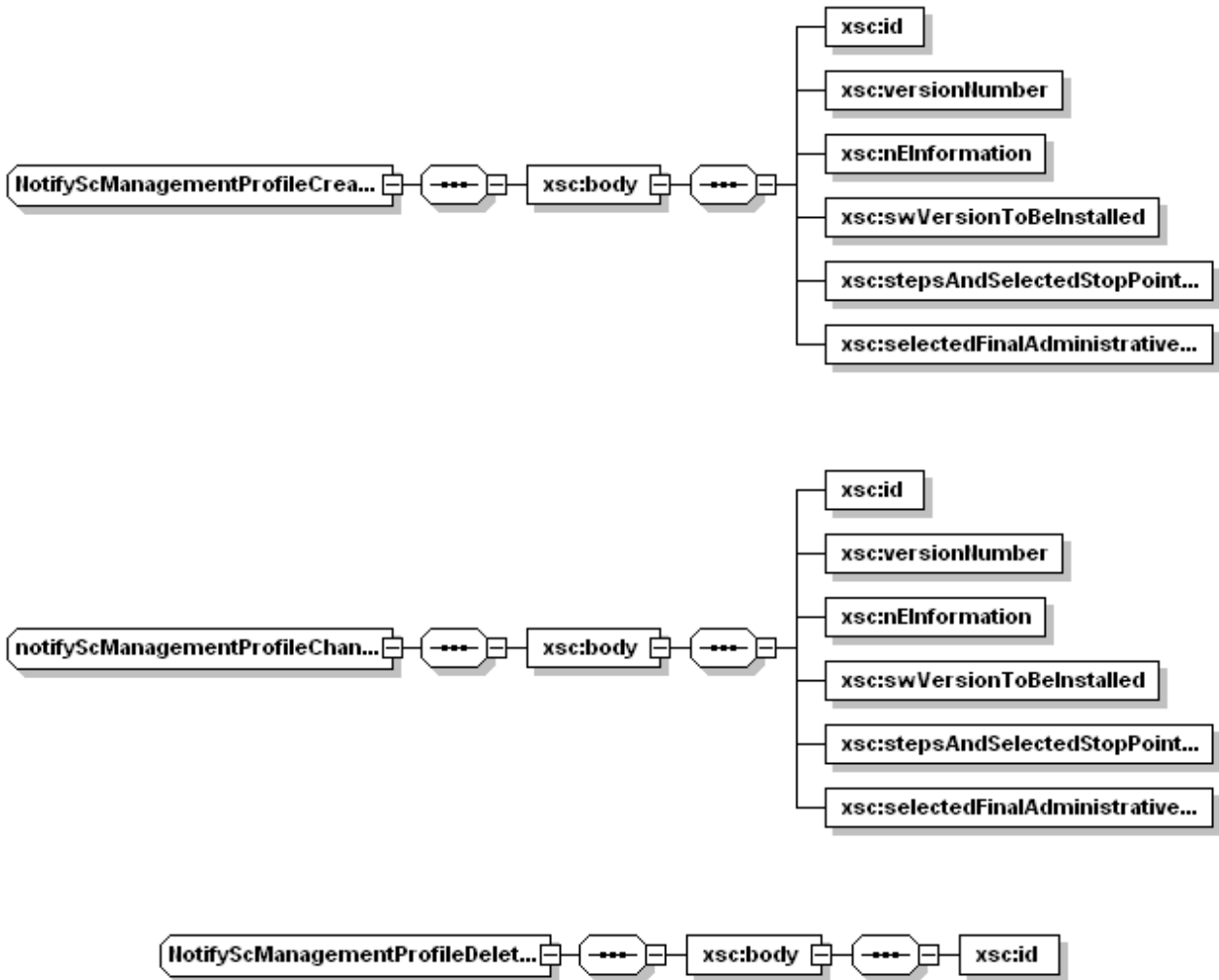
3.2 Abbreviations

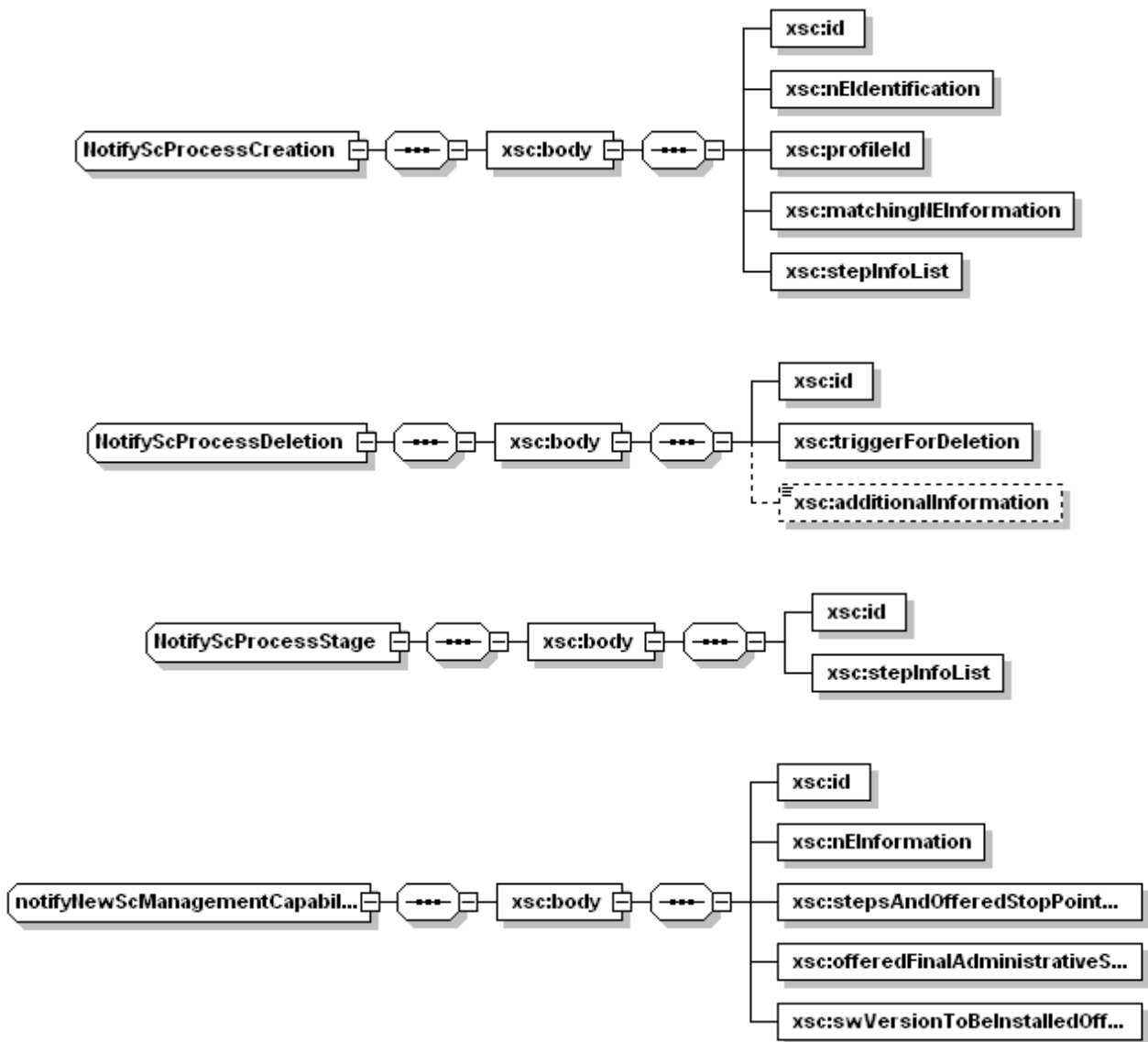
For the purposes of the present document, the following abbreviations apply:

SC	Self Configuration
XML	eXtensible Markup Language

4 Self Configuration IRP XML Definitions

4.1 Self Configuration notifications XML definition structure





4.2 Self Configuration IRP XML Schema for notifications (file name 'scIRPNotif.xsd')

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
  3GPP TS 32.505 SCIRP Notification XML Schema
  scIRPNotif.xsd
-->
<schema targetNamespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.505#scnIRPNotif"
  xmlns:xsc="http://www.3gpp.org/ftp/specs/archive/32_series/32.505#scnIRPNotif"
  xmlns:swm="http://www.3gpp.org/ftp/specs/archive/32_series/32.535#swManagementIRPNotif"
  xmlns:xe="http://www.3gpp.org/ftp/specs/archive/32_series/32.305#notification"
  xmlns="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified"
  attributeFormDefault="unqualified">
  <import namespace="xe:Notification" schemaLocation="notification.xsd"/>
  <complexType name="NotifyScManagementProfileCreation">
    <complexContent>
      <extension base="xe:Notification">
        <sequence>
          <element name="body">
            <complexType>
              <sequence>
                <element name="id" type="swm:Id"/>
                <element name="versionNumber" type="swm:VersionNumber"/>
              </sequence>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</schema>
```

```

        <element name="nEInformation" type="swm:NEInformation"/>
        <element name="swVersionToBeInstalled"
type="swm:SwVersionToBeInstalledConditional"/>
        <element name="stepsAndSelectedStopPointList"
type="swm:StepsAndSelectedStopPointList"/>
        <element name="selectedFinalAdministrativeState"
type="swm:FinalAdministrativeStateValue"/>
    </sequence>
</complexType>
</element>
</sequence>
</extension>
</complexContent>
</complexType>
<complexType name="NotifyScManagementProfileDeletion">
    <complexContent>
        <extension base="xe:Notification">
            <sequence>
                <element name="body">
                    <complexType>
                        <sequence>
                            <element name="id" type="swm:Id"/>
                        </sequence>
                    </complexType>
                </element>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<complexType name="NotifyScProcessCreation">
    <complexContent>
        <extension base="xe:Notification">
            <sequence>
                <element name="body">
                    <complexType>
                        <sequence>
                            <element name="id" type="swm:Id"/>
                            <element name="nEIdentification" type="swm:Id"/>
                            <element name="profileId" type="swm:ProfileId"/>
                            <element name="matchingNEInformation" type="swm:NEInformation"/>
                            <element name="stepInfoList" type="swm:StepInfoList"/>
                        </sequence>
                    </complexType>
                </element>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<complexType name="NotifyScProcessStage">
    <complexContent>
        <extension base="xe:Notification">
            <sequence>
                <element name="body">
                    <complexType>
                        <sequence>
                            <element name="id" type="swm:Id"/>
                            <element name="stepInfoList" type="swm:StepInfoList"/>
                        </sequence>
                    </complexType>
                </element>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<complexType name="NotifyScProcessDeletion">
    <complexContent>
        <extension base="xe:Notification">
            <sequence>
                <element name="body">
                    <complexType>
                        <sequence>
                            <element name="id" type="swm:Id"/>
                            <element name="triggerForDeletion" type="swm:TriggerForDeletion"/>
                            <element name="additionalInformation" type="string" minOccurs="0"/>
                        </sequence>
                    </complexType>
                </element>
            </sequence>
        </extension>
    </complexContent>
</complexType>

```

```

    </extension>
  </complexContent>
</complexType>
<complexType name="notifyNewScManagementCapabilityAvailability">
  <complexContent>
    <extension base="xe:Notification">
      <sequence>
        <element name="body">
          <complexType>
            <sequence>
              <element name="id" type="swm:Id"/>
              <element name="nEInformation" type="swm:NEInformation"/>
              <element name="stepsAndOfferedStopPointList"
type="swm:StepsAndOfferedStopPointList"/>
              <element name="offeredFinalAdministrativeStateInformation"
type="swm:OfferedFinalAdministrativeStateInformation"/>
              <element name="swVersionToBeInstalledOfferList"
type="swm:swVersionToBeInstalledOfferList"/>
            </sequence>
          </complexType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<complexType name="notifyScManagementProfileChange">
  <complexContent>
    <extension base="xe:Notification">
      <sequence>
        <element name="body">
          <complexType>
            <sequence>
              <element name="id" type="swm:Id"/>
              <element name="versionNumber" type="swm:VersionNumber"/>
              <element name="nEInformation" type="swm:NEInformation"/>
              <element name="swVersionToBeInstalled"
type="swm:SwVersionToBeInstalledConditional"/>
              <element name="stepsAndSelectedStopPointList"
type="swm:StepsAndSelectedStopPointList"/>
              <element name="selectedFinalAdministrativeState"
type="swm:FinalAdministrativeStateValue"/>
            </sequence>
          </complexType>
        </element>
      </sequence>
    </extension>
  </complexContent>
</complexType>
<element name="notifyScManagementProfileCreation" type="swm:NotifyScManagementProfileCreation"/>
<element name="notifyScManagementProfileDeletion" type="swm:NotifyScManagementProfileDeletion"/>
<element name="notifyScManagementProcessCreation" type="swm:NotifyScManagementProcessCreation"/>
<element name="notifyScProcessStage" type="swm:NotifyScProcessStage"/>
<element name="notifyScManagementProcessDeletion" type="swm:NotifyScManagementProcessDeletion"/>
<element name="notifyNewScManagementCapabilityAvailability"
type="swm:notifyNewScManagementCapabilityAvailability"/>
<element name="notifyScManagementProfileChange" type="swm:NotifyScManagementProfileChange"/>
</schema>

```

4.3 Self Configuration XML Schema for IOCs (file name 'scIRPIOCs.xsd')

```

<?xml version="1.0" encoding="UTF-8"?>
<!--
3GPP TS 32.505 Self Configuration IRP IOC XML Schema
scIRPIOCs.xsd
-->
<schema xmlns="http://www.w3.org/2001/XMLSchema"
xmlns:xsc="http://www.3gpp.org/ftp/specs/archive/32_series/32.505#scIRPIOCs"
xmlns:xn="http://www.3gpp.org/ftp/specs/archive/32_series/32.535#swManagementIRPIOCs"
xmlns:ns1="http://www.3gpp.org/ftp/specs/archive/32_series/32.535#swManagementIRPIOCs"
targetNamespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.505#scIRPIOCs"
elementFormDefault="qualified" attributeFormDefault="unqualified">
  <import namespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.535#swManagementIRPIOCs"
schemaLocation="swManagementIRPIOCs.xsd"/>

```

```

<simpleType name="id">
  <restriction/>
</simpleType>
<simpleType name="neInformation">
  <restriction/>
</simpleType>
<simpleType name="VersionNumber">
  <restriction base="unsignedShort"/>
</simpleType>
<complexType name="ProfileId">
  <sequence>
    <element name="id" type="xsc:Id"/>
    <element name="versionNumber" type="xsc:VersionNumber"/>
  </sequence>
</complexType>
<simpleType name="FinalAdministrativeStateValue">
  <restriction base="string">
    <enumeration value="LOCKED"/>
    <enumeration value="UNLOCKED"/>
    <enumeration value="DETERMINED_BY_CONFIGURATION_DATA"/>
  </restriction>
</simpleType>
<complexType name="OfferedFinalAdministrativeStateInformation">
  <sequence>
    <element name="OfferedFinalAdministrativeStateValue"
type="xsc:FinalAdministrativeStateValue"/>
  </sequence>
</complexType>
<complexType name="StepsAndOfferedStopPointListEntry">
  <sequence>
    <element name="nameOfStep" type="xsc:NameOfStep"/>
    <element name="sequenceNumberInProcess" type="xsc:SequenceNumberInProcess"/>
    <element name="stopPointCanBeSetBeforeThisStep"
type="xsc:StopPointCanBeSetBeforeThisStep"/>
  </sequence>
</complexType>
<complexType name="StepsAndOfferedStopPointList">
  <sequence>
    <element name="stepsAndOfferedStopPointListEntry"
type="xsc:StepsAndOfferedStopPointListEntry" maxOccurs="unbounded"/>
  </sequence>
</complexType>
<simpleType name="StopPointCanBeSetBeforeThisStep">
  <restriction base="boolean"/>
</simpleType>
<complexType name="StepsAndSelectedStopPointListEntry">
  <sequence>
    <element name="nameOfStep" type="xsc:NameOfStep"/>
    <element name="sequenceNumberInProcess" type="xsc:SequenceNumberInProcess"/>
    <element name="stopPointSetIndication" type="xsc:StopPointSetIndication"/>
  </sequence>
</complexType>
<complexType name="StepsAndSelectedStopPointList">
  <sequence>
    <element name="stepsAndSelectedStopPointListEntry"
type="xsc:StepsAndSelectedStopPointListEntry" maxOccurs="unbounded"/>
  </sequence>
</complexType>
<simpleType name="StopPointSetIndication">
  <restriction base="string">
    <enumeration value="STOP_POINT_IS_SET_BEFORE_THIS_STEP"/>
    <enumeration value="STOP_POINT_IS_NOT_SET"/>
  </restriction>
</simpleType>
<simpleType name="SequenceNumberInProcess">
  <restriction base="unsignedShort"/>
</simpleType>
<simpleType name="NameOfStep">
  <restriction base="string">
    <enumeration value="SW_DOWNLOAD"/>
    <enumeration value="SW_INSTALLATION"/>
    <enumeration value="SW_ACTIVATION"/>
    <enumeration value="PREPARE_BASIC_CONFIGURATION_AND_OAMLINK"/>
    <enumeration value="RETRIEVE_CONFIGURATION_DATA"/>
    <enumeration value="SETUP_PRECONFIGURED_SIGNALLING_LINKS"/>
    <enumeration value="SET_FINAL_STATE_OF_NE "/>
  </restriction>
</simpleType>

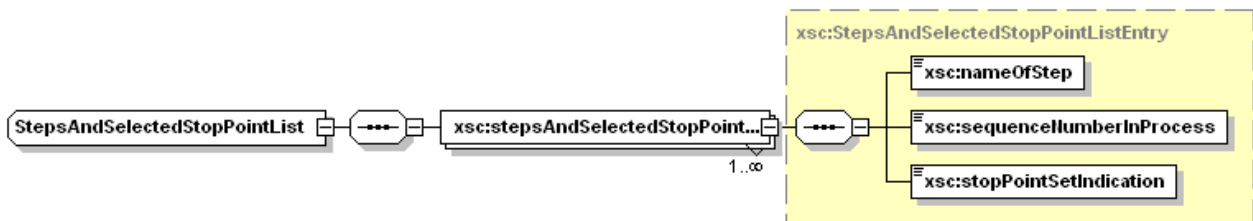
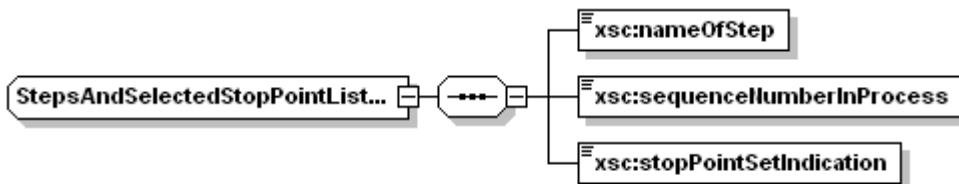
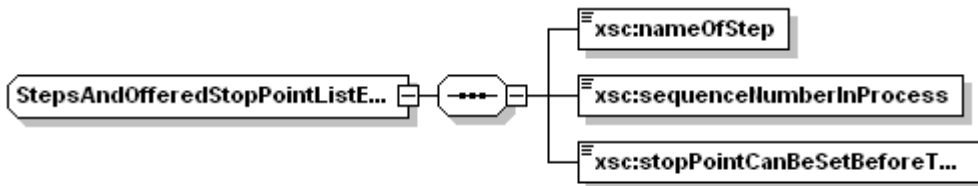
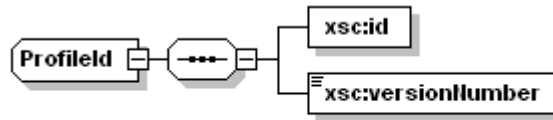
```

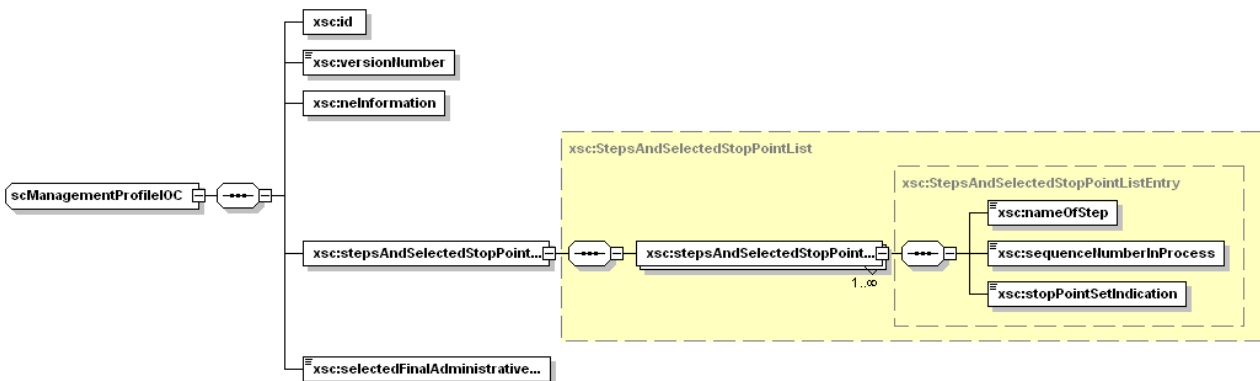
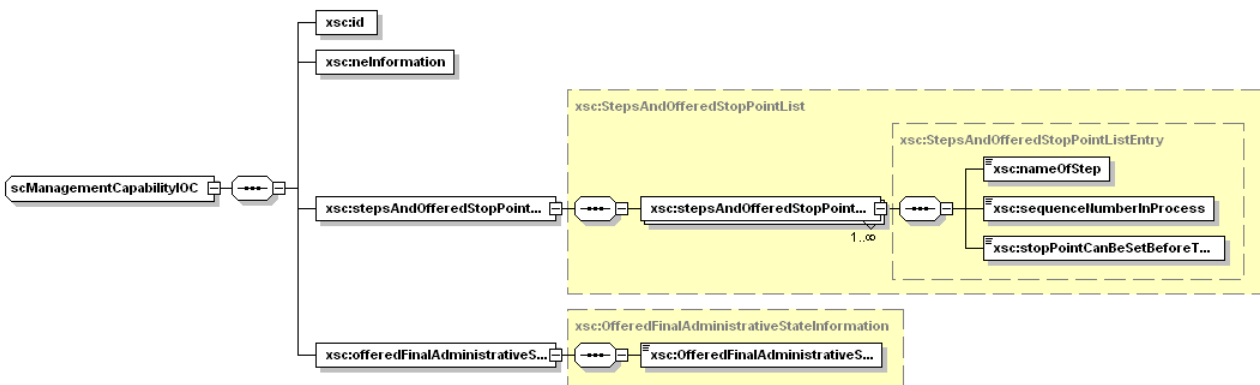
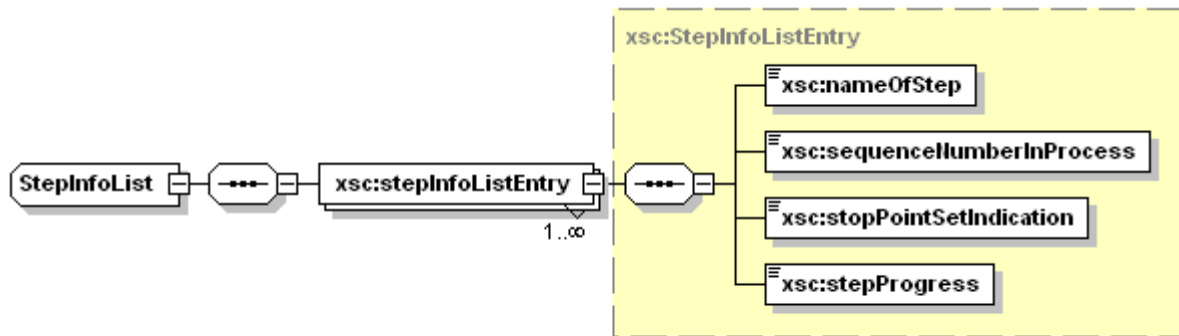
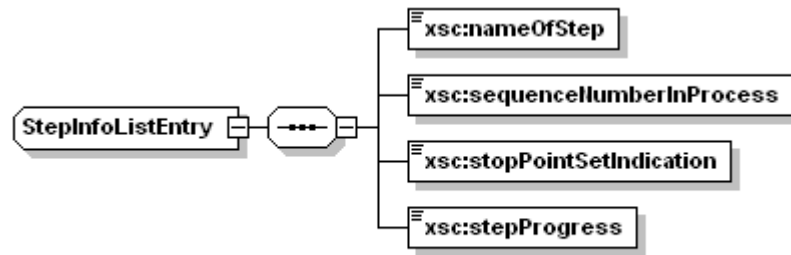
```

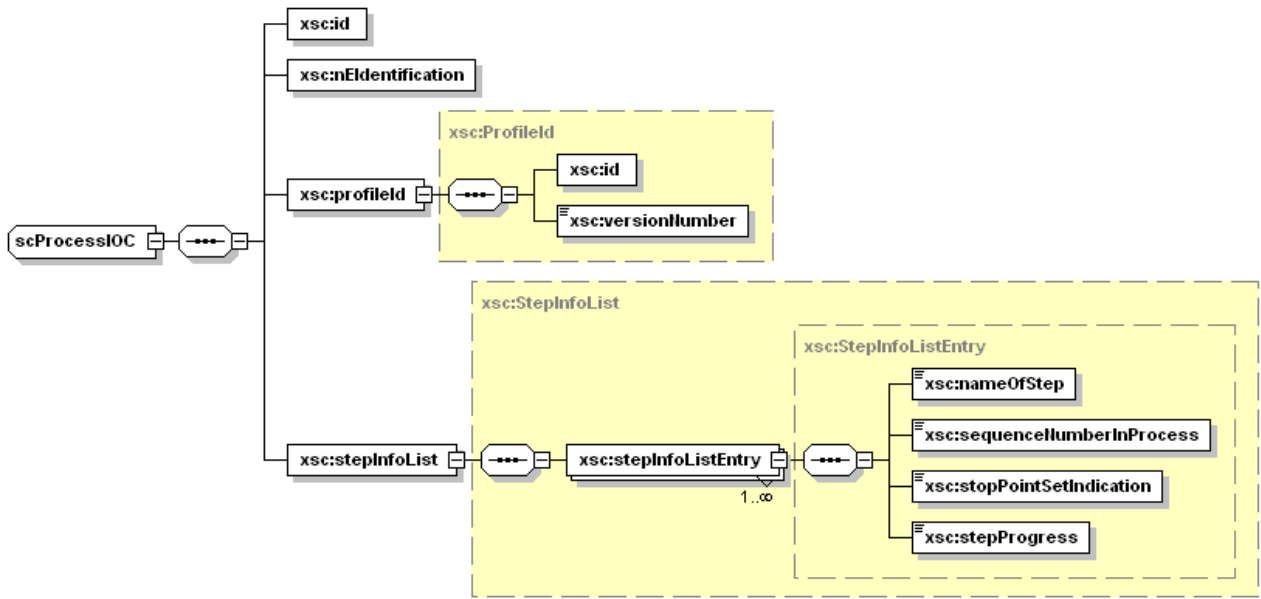
<simpleType name="StepProgress">
  <restriction base="string">
    <enumeration value="NOT_YET_STARTED"/>
    <enumeration value="RUNNING"/>
    <enumeration value="COMPLETED"/>
    <enumeration value="AWAITING_RESUME"/>
    <enumeration value="FAILURE"/>
    <enumeration value="TERMINATED"/>
  </restriction>
</simpleType>
<complexType name="StepInfoListEntry">
  <sequence>
    <element name="nameOfStep" type="xsc:NameOfStep"/>
    <element name="sequenceNumberInProgress" type="xsc:SequenceNumberInProgress"/>
    <element name="stopPointSetIndication" type="xsc:StopPointSetIndication"/>
    <element name="stepProgress" type="xsc:StepProgress"/>
  </sequence>
</complexType>
<complexType name="StepInfoList">
  <sequence>
    <element name="stepInfoListEntry" type="xsc:StepInfoListEntry" maxOccurs="unbounded"/>
  </sequence>
</complexType>
<complexType name="scManagementCapabilityIOC">
  <sequence>
    <element name="id" type="xsc:Id"/>
    <element name="neInformation" type="xsc:NEInformation"/>
    <element name="stepsAndOfferedStopPointList" type="xsc:StepsAndOfferedStopPointList"/>
    <element name="offeredFinalAdministrativeStateInformation"
type="xsc:OfferedFinalAdministrativeStateInformation"/>
  </sequence>
</complexType>
<complexType name="scManagementProfileIOC">
  <sequence>
    <element name="id" type="xsc:Id"/>
    <element name="versionNumber" type="xsc:VersionNumber"/>
    <element name="neInformation" type="xsc:NEInformation"/>
    <element name="stepsAndSelectedStopPointList" type="xsc:StepsAndSelectedStopPointList"/>
    <element name="selectedFinalAdministrativeState"
type="xsc:FinalAdministrativeStateValue"/>
  </sequence>
</complexType>
<complexType name="scProcessIOC">
  <sequence>
    <element name="id" type="xsc:Id"/>
    <element name="neIdentification" type="xsc:NEInformation"/>
    <element name="profileId" type="xsc:ProfileId"/>
    <element name="stepInfoList" type="xsc:StepInfoList"/>
  </sequence>
</complexType>
</schema>

```

4.4 Self Configuration IRP IOC XML definition structure







Annex A (informative):
Void

Annex B (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Dec 2009	SA#46	SP-0907355	--	--	Presentation to SA for Information and approval	--	1.0.0
Dec 2009	--	--	--	--	Publication	1.0.0	8.0.0
Dec 2009	-	-	-	-	Update to Rel-9 version	8.0.0	9.0.0
Mar 2010	SA#47	SP-100034	006	--	Correction of XML definitions structure of Self Configuration IOC	9.0.0	9.1.0
Mar 2010	SA#47	SP-100034	009	--	Add XML definitions structure diagram of Self Configuration Notifications	9.0.0	9.1.0

History

Document history		
V9.0.0	February 2010	Publication
V9.1.0	April 2010	Publication