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Technical Specification

3rd Generation Partnership Project;
Technical Specification Group Services and System Aspects;
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Network Resource Model (NRM)
Integration Reference Point (IRP);
Solution Set (SS) definitions
(Release 11)

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Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

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Version x.y.z

where:

x   the first digit:

1   presented to TSG for information;

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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:

TS 32.140:   "Subscription Management (SuM) requirements".

TS 32.141:   "Subscription Management (SuM) architecture".

TS 32.171:   "Subscription Management (SuM) Network Resource Model (NRM) Integration Reference Point (IRP): Requirements ".

TS 32.172:   "Subscription Management (SuM) Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)".

TS 32.176:   "Subscription Management (SuM) Network Resource Model (NRM) Integration Reference Point (IRP): Solution Set (SS) definitions".

Subscription Management (SuM) is a feature that permits Service Providers, Value Added Service Providers and Mobile Operators to provision services for a specific subscriber. The feature is necessary to allow Service Providers and Operators to provision, control, monitor, and bill the configuration of services that they offer to their subscribers. SuM focuses on the OAM processes to manage subscription information. The overall SuM requirements and architecture are detailed in 3GPP TS 32.140 [2] and 3GPP TS 32.141 [3].

The Itf-N interface for Subscription Management is built up by a number of Integration Reference Points (IRPs) and a related Name Convention, which realise the functional capabilities over this interface. The basic structure of the IRPs is defined in 3GPP TS 32.150 [1]. For SuM, a number of IRPs (and the Name Convention) are defined herein, used by this as well as other technical specifications for telecom management produced by 3GPP.

1 Scope

The present document is part of an Integration Reference Point (IRP) named Subscription Management (SuM) Network Resource Model (NRM) IRP, through which an `IRPAgent` can communicate configuration management information to one or several `IRPManagers` concerning SuM resources. The SuM NRM IRP comprises a set of specifications defining Requirements, a protocol neutral Information Service and one or more Solution Set(s).

The present document specifies the Solution Sets for the SuM NRM IRP.

This specification is related to 3GPP TS 32.172 [5] V10.2.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 32.140: "Telecommunication management; Subscription Management (SuM) requirements".

[3]   3GPP TS 32.141: "Telecommunication management; Subscription Management (SuM) architecture".

[4]   3GPP TS 32.171: "Telecommunication management; Subscription Management (SuM) resources Integration Reference Point (IRP); Requirements".

[5]   3GPP TS 32.172: "Telecommunication management; Subscription Management Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)".

[6]   3GPP TS 32.101: "Telecommunication management; Principles and high level requirements".

[7]   3GPP TS 32.102: "Telecommunication management; Architecture".

[8]   3GPP TS 32.616: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP): Solution Set (SS) definitions".

[9]   3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects"

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions in 3GPP TS 32.101 [6], TS 32.102 [7], TS 32.140 [2], TS 32.141 [3], TS 32.171 [4] and TS 32.172 [5] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations in 3GPP TS 32.101 [6], TS 32.102 [7], TS 32.140 [2], TS 32.141 [3], TS 32.171 [4] and TS 32.172 [5] apply.

4 Solution Set Definitions

This specification defines the following 3GPP SuM NRM IRP Solution Set Definitions:

- 3GPP SuM NRM IRP XML Definitions (Annex A)

CORBA Solution Set is not supported.

Annex A (normative): XML Definitions

This annex contains the XML Definitions for the SuM NRM IRP as it applies to Itf-N, in accordance with SuM NRM IRP Information Service (TS 32.172 [5])

A.1 Architectural features

The overall architectural feature of Subscription Management (SuM) resources is specified in 3GPP TS 32.172 [5]. This clause specifies features that are specific to the Schema definitions.

A.1.1 Syntax for Distinguished Names

The syntax of a Distinguished Name is defined in 3GPP TS 32.300 [9].

A.2 Mapping

A.2.1 General mapping

An IOC maps to an XML element of the same name as the IOC's name in the IS. An IOC attribute maps to a sub-element of the corresponding IOC's XML element, and the name of this sub-element is the same as the attribute's name in the IS.

A.2.2 Information Object Class (IOC) mapping

Not present in the current version of this specification.

A.3 Solution Set definitions

A.3.1 XML definition structure

The overall description of the file format of configuration data XML files is provided by 3GPP TS 32.616 [8].

Annex A.3.3 of the present document defines the NRM-specific XML schema `sumNrm.xsd` for the Subscription Management IRP NRM defined in 3GPP TS 32.172 [5].

XML schema `sumNrm.xsd` explicitly declares NRM-specific XML element types for the related NRM.

The definition of those NRM-specific XML element types complies with the generic mapping rules defined in 3GPP TS 32.616 [8].

A.3.2 Graphical Representation

Not present in the current version of this specification.

A.3.3 XML schema "sumNrm.xsd"

```
<?xml version="1.0" encoding="UTF-8"?>

<!--
  3GPP TS 32.176 SuM Network Resources IRP
  SuM NRM-specific XML schema
  sumNrm.xsd
-->

<schema
  targetNamespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.176#sumNrm"
  elementFormDefault="qualified"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:sn=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.176#sumNrm"
  xmlns:xn=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.626#genericNrm"
>

  <import
    namespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.626#genericNrm"
  />

  <!-- SuM Network Resources IRP NRM class associated XML elements -->

  <element
    name="SubscriptionFunction"
    substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass"
  >
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="userLabel"/>
                  <element name="theUser" type="xn:dnList"/>
                  <element name="theSubscriberProfile" type="xn:dnList"/>
                </all>
              </complexType>
            </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
  <element name="SuMSubscriberProfile" substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="suMSubscriberProfileInfo"/>
                  <element name="theUser" type="xn:dnList"/>
                  <element name="theSubscribedService" type="xn:dnList"/>
                  <element name="theMobileUserData" type="xn:dnList"/>
                </all>
              </complexType>
            </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
<element name="MobileUserData" substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
```

```
                    <element name="theServiceProfile" type="xn:dnList"/>
                    <element name="iMSI" type="string"/>
                    <element name="mSISDN" type="string"/>
                    <element name="multinumberingMSISDNs" type="sn:multinumberingMSISDNList"/>
                    <element name="iMEISV" type="string" minOccurs="0"/>
                </all>
              </complexType>
            </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>

  <element name="SuMUser" substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="theMobileUserData" type="xn:dnList"/>
                  <element name="theSubscriber" type="xn:dnList" minOccurs="0"/>
                  <element name="theCredentials" type="xn:dnList"/>
                  <element name="theServiceProfile" type="xn:dnList"/>
                  <element name="theIdentity" type="xn:dnList" minOccurs="0"/>
                </all>
              </complexType>
            </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>

  <element name="SuMCredentials" substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="thePublicId" type="xn:dnList"/>
                  <element name="theServiceProfile" type="xn:dnList"/>
                  <element name="iMSPrivateUserIdentity" type="string"/>
                </all>
              </complexType>
            </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>


  <element name="SuMService" type="xn:NrmClass" abstract="true"
substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass"/>

  <element
    name="CSService"
    substitutionGroup="sn:SuMService"
  >
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="theContract" minOccurs="0"/>
                  <element name="networkAccessMode"/>
                  <element name="basicMSISDNIndicator" minOccurs="0"/>
                  <element name="mSISDNAlertIndicator" minOccurs="0"/>
                  <element name="subscriptionRestriction" minOccurs="0"/>
                  <element name="rSZIlists" minOccurs="0"/>
                  <element name="lSAIdentity" minOccurs="0"/>
                  <element name="lSAPriority" minOccurs="0"/>
                  <element name="lSAPreferentialAccessIndicator" minOccurs="0"/>
```

```
<element name="lSAActiveModeSupportIndicator" minOccurs="0"/>
<element name="lSAOnlyAccessIndicator" minOccurs="0"/>
<element name="lSAActiveModeIndicator" minOccurs="0"/>
<element name="vPLMNIdentifier" minOccurs="0"/>
<element name="accessRestrictionData" minOccurs="0"/>
<element name="privacyExceptionList" minOccurs="0"/>
<element name="gMLCNumbers" minOccurs="0"/>
<element name="mOLRList" minOccurs="0"/>
<element name="serviceTypes" minOccurs="0"/>
<element name="mobileStationCategory" minOccurs="0"/>
<element name="lMUIdentifier" minOccurs="0"/>
<element name="subscriberStatus" minOccurs="0"/>
<element name="gsmSCFaddresslistForODB"/>
<element name="provisionOfBearerService"/>
<element name="provisionOfTeleservice"/>
<element name="bCAllocation" minOccurs="0"/>
<element name="barringOfOutgoingCalls" minOccurs="0"/>
<element name="barringOfIncomingCalls" minOccurs="0"/>
<element name="barringOfRoaming" minOccurs="0"/>
<element name="barringOfPremiumRateCalls" minOccurs="0"/>
<element
  name="barringOfSupplementaryServiceManagement"
  minOccurs="0"
/>
<element
  name="barringOfRegistrationOfCallForwarding"
  minOccurs="0"
/>
<element
  name="barringOfInvocationOfCallTransfer"
  minOccurs="0"
/>
<element
  name="operatorDeterminedBarringPLMNspecificData"
  minOccurs="0"
/>
<element name="vGCSGroupMembershipList" minOccurs="0"/>
<element name="vBSGroupMembershipList" minOccurs="0"/>
<element
  name="broadcastCallInitiationAllowedList"
  minOccurs="0"
/>
<element
  name="originatingCAMELSubscriptionInformationOCSI"
  minOccurs="0"
/>
<element
  name="terminatingCAMELSubscriptionInformationTCSI"
  minOccurs="0"
/>
<element
  name="vMSCTerminatingCAMELSubscriptionInformationVTCSI"
  minOccurs="0"
/>
<element
  name="locationInformationSubscriberStateInformation"
  minOccurs="0"
/>
<element
  name="uSSDCAMELSubscriptionInformationUCSI"
  minOccurs="0"
/>
<element name="sSInvocationNotificationSSCSI" minOccurs="0"/>
<element
  name="translationInformationFlagTIFCSI"
  minOccurs="0"
/>
<element
  name="dialledServiceCAMELSubscriptionInformationDCSI"
  minOccurs="0"
/>
<element
  name="uSSDGeneralCAMELServiceInformationUGCSI"
  minOccurs="0"
/>
<element
name="shortMessageServiceCAMELSubscriptionInformationMOSMSCSI"
  minOccurs="0"
/>
<element
```

```
                                name="shortMessageServiceCAMELSubscriptionInformationMTSMSCSI"
                                  minOccurs="0"
                                />
                                <element
                                  name="mTSMSCSIVLRNegotiatedCAMELCapabilityHandling"
                                  minOccurs="0"
                                />
                                <element name="gsmSCFaddressforCSI" minOccurs="0"/>
                                <element name="iSTAlertTimer" minOccurs="0"/>
                                <element name="cSAllocationRetentionpriority" minOccurs="0"/>
                                <element name="iCSIndicator" minOccurs="0"/>
                                <element name="theCSSupplServiceForCS" type="xn:dnList"/>
                              </all>
                          </complexType>
                        </element>
                    </sequence>
                  </extension>
                </complexContent>
              </complexType>
            </element>
            <element name="SuMCSSupplService"
              substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
              <complexType>
                <complexContent>
                  <extension base="xn:NrmClass">
                    <sequence>
                      <element name="attributes" minOccurs="0">
                        <complexType>
                          <all>
                            <element name="sS-Code"/>
                            <element name="provisioningState"/>
                            <element name="activationState"/>
                            <element name="registrationState" minOccurs="0"/>
                            <element name="overrideCategory" minOccurs="0"/>
                            <element name="cLIRestrictionOption" minOccurs="0"/>
                            <element name="forwarded-toNumber" minOccurs="0"/>
                            <element name="forwarded-toSubaddress" minOccurs="0"/>
                            <element name="noReplyConditionTimer" minOccurs="0"/>
                            <element name="maximumEntitledPriority" minOccurs="0"/>
                            <element name="defaultPriority" minOccurs="0"/>
                            <element name="nbrUser" minOccurs="0"/>
                            <element name="nbrSB" minOccurs="0"/>
                          </all>
                        </complexType>
                      </element>
                    </sequence>
                  </extension>
                </complexContent>
              </complexType>
            </element>


            <element
              name="GPRSService"
              substitutionGroup="sn:SuMService"
            >
              <complexType>
                <complexContent>
                  <extension base="xn:NrmClass">
                    <sequence>
                      <element name="attributes" minOccurs="0">
                        <complexType>
                          <all>
                            <element name="theContract" minOccurs="0"/>
                            <element name="networkAccessMode" minOccurs="0"/>
                            <element name="basicMSISDNIndicator" minOccurs="0"/>
                            <element name="mSISDNAlertIndicator" minOccurs="0"/>
                            <element name="rSZIlists" minOccurs="0"/>
                            <element name="lSAIdentity" minOccurs="0"/>
                            <element name="lSAPriority" minOccurs="0"/>
                            <element name="lSAPreferentialAccessIndicator" minOccurs="0"/>
                            <element name="lSAActiveModeSupportIndicator" minOccurs="0"/>
                            <element name="lSAOnlyAccessIndicator" minOccurs="0"/>
                            <element name="lSAActiveModeIndicator" minOccurs="0"/>
                            <element name="vPLMNIdentifier" minOccurs="0"/>
                            <element name="accessRestrictionData" minOccurs="0"/>
                            <element name="privacyExceptionList" minOccurs="0"/>
                            <element name="gMLCNumbers" minOccurs="0"/>
                            <element name="mOLRList" minOccurs="0"/>
                            <element name="serviceTypes" minOccurs="0"/>
```

```
<element name="gGSNNumber" minOccurs="0"/>
<element name="provisionofTeleservice" minOccurs="0"/>
<element name="subscriberStatus" minOccurs="0"/>
<element name="transferofSMoption" minOccurs="0"/>
<element
  name="barringofPacketOrientedServices"
  minOccurs="0"
/>
<element name="pDPType" minOccurs="0"/>
<element name="pDPAddress" minOccurs="0"/>
<element name="accessPointName" minOccurs="0"/>
<element name="vPLMNAddressAllowed" minOccurs="0"/>
<element name="qualityofServiceSubscribed" minOccurs="0"/>
<element
  name="pDPContextChargingCharacteristics"
  minOccurs="0"
/>
<element
  name="gPRSCAMELSubscriptionInformationGPRSCSI"
  minOccurs="0"
/>
<element
name="mOShortMessageServiceCAMELSubscriptionInformationMOSMSCSI"
  minOccurs="0"
/>
<element
name="mTShortMessageServiceCAMELSubscriptionInformationMTSMSCSI"
  minOccurs="0"
/>
<element
  name="mOSMSCSISGSNNegotiatedCAMELCapabilityHandling"
  minOccurs="0"
/>
<element
  name="mTSMSCSISGSNNegotiatedCAMELCapabilityHandling"
  minOccurs="0"
/>
<element
  name="mobilityManagementforGPRSeventnotificationMGCSI"
  minOccurs="0"
/>
<element
  name="mGCSINegotiatedCAMELCapabilityHandling"
  minOccurs="0"
/>
<element name="gsmSCFaddressforCSI" minOccurs="0"/>
<element
  name="subscribedChargingCharacteristics"
  minOccurs="0"
/>
<element name="closedSubscriberGroupInformation" minOccurs="0"/>
<element name="gSMSCFaddresslistForODB" minOccurs="0"/>
<element name="barringOfOutgoingCalls" minOccurs="0"/>
<element name="barringOfRoaming" minOccurs="0"/>
<element name="operatorDeterminedBarringPLMNspecificData" minOccurs="0"/>
<element name="sTNSR" minOccurs="0"/>
<element name="iCSIndicator" minOccurs="0"/>
<element
  name="listofauthorizedvisitednetworkidentifiers"
  minOccurs="0"
/>
<element name="wLANUERemoteIPaddress" minOccurs="0"/>
<element name="staticWLANUERemoteIPAddressList" minOccurs="0"/>
<element name="w-APNBarringTypeList" minOccurs="0"/>
<element name="w-APNChargingDataList" minOccurs="0"/>
<element name="accessDependenceFlag" minOccurs="0"/>
<element name="chargingCharacteristics" minOccurs="0"/>
<element name="primaryOCSChargingFunctionName" minOccurs="0"/>
<element
  name="secondaryOCSChargingFunctionName"
  minOccurs="0"
/>
<element
  name="primaryChargingCollectionFunctionName"
  minOccurs="0"
/>
<element
  name="secondaryChargingCollectionFunctionName"
  minOccurs="0"
/>
```

```
                    <element name="w-APNIdentifierList" minOccurs="0"/>
                    <element name="maxNumberAccessesList" minOccurs="0"/>
                    <element name="subscribed3GPPWLANQoSProfile" minOccurs="0"/>
                    <element name="maxSubscribedBandwidth" minOccurs="0"/>
                    <element name="theGPRSSupplServiceForGPRS" type="xn:dnList"/>
                  </all>
                </complexType>
              </element>
            </sequence>
          </extension>
        </complexContent>
      </complexType>
    </element>

    <element name="SuMGPRSSupplService"
    substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
      <complexType>
        <complexContent>
          <extension base="xn:NrmClass">
            <sequence>
              <element name="attributes" minOccurs="0">
                <complexType>
                  <all>
                    <element name="sS-Code" minOccurs="0"/>
                    <element name="provisioningState" minOccurs="0"/>
                    <element name="activationState" minOccurs="0"/>
                  </all>
                </complexType>
              </element>
            </sequence>
          </extension>
        </complexContent>
      </complexType>
    </element>
    <element name="EPSService" substitutionGroup="sn:SuMService">
      <complexType>
        <complexContent>
          <extension base="xn:NrmClass">
            <sequence>
              <element name="attributes" minOccurs="0">
                <complexType>
                  <all>
                    <element name="theContract" minOccurs="0"/>
                    <element name="accessPointName" minOccurs="0"/>
                    <element name="accessRestrictionData" minOccurs="0"/>
                    <element name="aPNAMBR" minOccurs="0"/>
                    <element name="barringofPacketOrientedServices" minOccurs="0"/>
                    <element name="contextIdentifier" minOccurs="0"/>
                    <element name="operatorDeterminedBarringPLMNspecificData" minOccurs="0"/>
                    <element name="pDNAddress" minOccurs="0"/>
                    <element name="rSZILists" minOccurs="0"/>
                    <element name="sTNSR" minOccurs="0"/>
                    <element name="subscribedChargingCharacteristics" minOccurs="0"/>
                    <element name="subscriberStatus" minOccurs="0"/>
                    <element name="networkAccessMode" minOccurs="0"/>
                    <element name="barringOfOutgoingCalls" minOccurs="0"/>
                    <element name="barringOfRoaming" minOccurs="0"/>
                    <element name="privacyExceptionList" minOccurs="0"/>
                    <element name="gMLCNumbers" minOccurs="0"/>
                    <element name="mOLRList" minOccurs="0"/>
                    <element name="serviceTypes" minOccurs="0"/>
                    <element name="iCSIndicator" minOccurs="0"/>
                    <element name="aPNOIReplacement" minOccurs="0"/>
                    <element name="subscribedUEAMBR" minOccurs="0"/>
                    <element name="aPNConfigurationProfile" minOccurs="0"/>
                    <element name="rFSP" minOccurs="0"/>
                    <element name="vPLMNAddressAllowed-EPS" minOccurs="0"/>
                    <element name="pDNGWIdentity" minOccurs="0"/>
                    <element name="ePSPDNConnectedChargingCharacteristics" minOccurs="0"/>
                    <element name="pDNGWAllocationType" minOccurs="0"/>
                    <element name="aPNLevelAPNOIReplacement" minOccurs="0"/>
                    <element name="closedSubscriberUserGroupInformation" minOccurs="0"/>
                    <element name="listofAuthorizedvisitednetowrkidentifiers" minOccurs="0"/>
                    <element name="staticWLANUERemoteIPAddressList" minOccurs="0"/>
                    <element name="w-APONBarringTypeList" minOccurs="0"/>
                    <element name="w-APNChargingDataList" minOccurs="0"/>
                    <element name="wLANUERemoteIPAddress" minOccurs="0"/>
                    <element name="accessDependenceFlag" minOccurs="0"/>
                    <element name="chargingCharacteristics" minOccurs="0"/>
                    <element name="primaryOCSChargingFunctionName" minOccurs="0"/>
```

```xml
                        <element name="secondaryOCSChargingFunctionName" minOccurs="0"/>
                        <element name="primaryChargingCollectionFunctionName" minOccurs="0"/>
                        <element name="secondaryChargingCollectionFunctionName" minOccurs="0"/>
                        <element name="w-APNIdentifierList" minOccurs="0"/>
                        <element name="maxNumberAccessesList" minOccurs="0"/>
                        <element name="maxSubscribedBandwidth" minOccurs="0"/>
                        <element name="subscribed3GPPWLANQoSProfile" minOccurs="0"/>
                        <element name="permanentUserIdentity" minOccurs="0"/>
                        <element name="mIPSubscriberProfile" minOccurs="0"/>
                    </all>
                </complexType>
            </element>
        </sequence>
    </extension>
  </complexContent>
 </complexType>
</element>

<element
  name="IMSService"
  substitutionGroup="sn:SuMService"
>
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="theContract" minOccurs="0"/>
                <element
                  name="listofauthorizedvisitednetworkidentifiers"/>
                <element name="registrationStatus"/>
                <element name="sCSCFName" minOccurs="0"/>
                <element name="diameterClientAddressofSCSCF" minOccurs="0"/>
                <element name="theServerCapabilities" type="xn:dn" minOccurs="0"/>
                <element
                  name="subscribedMediaProfileIdentifier"
                  minOccurs="0"
                />
                <element name="initialFilterCriteriaList" minOccurs="0">
  <complexType>
    <sequence>
      <element name="initialFilterCriteria" minOccurs="1" maxOccurs="unbounded"/>
    </sequence>
  </complexType>
    </element>
                <element name="applicationServerInformation" minOccurs="0"/>
                <element name="serviceIndicationList" minOccurs="0">
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  <element name="serviceIndication" minOccurs="1" maxOccurs="unbounded"/>
  </sequence>
 </complexType>
</element>
                <element
                  name="primaryEventChargingFunctionName"
                  minOccurs="0"
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                <element
                  name="secondaryEventChargingFunctionName"
                  minOccurs="0"
                />
                <element name="primaryChargingCollectionFunctionName"/>
                <element
                  name="secondaryChargingCollectionFunctionName"
                  minOccurs="0"
                />
                <element name="gsmSCFaddressforIMCSI" minOccurs="0"/>
                <element name="oIMCSI" minOccurs="0"/>
                <element name="vTIMCSI" minOccurs="0"/>
                <element name="dIMCS" minOccurs="0"/>
                <element name="gAAServiceType" minOccurs="0"/>
                <element name="gAAServiceIdentifier" minOccurs="0"/>
                <element name="gBAUserSecuritySettings" minOccurs="0"/>
                <element name="userSecuritySetting" minOccurs="0"/>
                <element name="userPublicIdentity" minOccurs="0"/>
                <element name="gAAAuthorizationflag" minOccurs="0"/>
                <element name="keyLifetime" minOccurs="0"/>
                <element name="uICCSecurityType" minOccurs="0"/>
```

```
                      <element name="nAFGroupIdentity" minOccurs="0"/>
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                </complexType>
             </element>
          </sequence>
       </extension>
    </complexContent>
  </complexType>
</element>

<element name="SuMSubscribedService"
substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass" type="xn:NrmClass"
abstract="true"/>

<element
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  substitutionGroup="sn:SuMSubscribedService"
>
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        <sequence>
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            <complexType>
              <all>
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                <element name="theOffer" minOccurs="0"/>
                <element name="networkAccessMode"/>
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                <element name="mSISDNAlertIndicator" minOccurs="0"/>
                <element name="subscriptionRestriction" minOccurs="0"/>
                <element name="rSZIlists" minOccurs="0"/>
                <element name="lSAIdentity" minOccurs="0"/>
                <element name="lSAPriority" minOccurs="0"/>
                <element name="lSAPreferentialAccessIndicator" minOccurs="0"/>
                <element name="lSAActiveModeSupportIndicator" minOccurs="0"/>
                <element name="lSAOnlyAccessIndicator" minOccurs="0"/>
                <element name="lSAActiveModeIndicator" minOccurs="0"/>
                <element name="vPLMNIdentifier" minOccurs="0"/>
                <element name="accessRestrictionData" minOccurs="0"/>
                <element name="privacyExceptionList" minOccurs="0"/>
                <element name="gMLCNumbers" minOccurs="0"/>
                <element name="mOLRList" minOccurs="0"/>
                <element name="serviceTypes" minOccurs="0"/>
                <element name="mobileStationCategory" minOccurs="0"/>
                <element name="lMUIdentifier" minOccurs="0"/>
                <element name="subscriberStatus" minOccurs="0"/>
                <element name="gsmSCFaddresslistForODB"/>
                <element name="provisionOfBearerService"/>
                <element name="provisionOfTeleservice"/>
                <element name="bCAllocation" minOccurs="0"/>
                <element name="barringOfOutgoingCalls" minOccurs="0"/>
                <element name="barringOfIncomingCalls" minOccurs="0"/>
                <element name="barringOfRoaming" minOccurs="0"/>
                <element name="barringOfPremiumRateCalls" minOccurs="0"/>
                <element
                  name="barringOfSupplementaryServiceManagement"
                  minOccurs="0"
                />
                <element
                  name="barringOfRegistrationOfCallForwarding"
                  minOccurs="0"
                />
                <element
                  name="barringOfInvocationOfCallTransfer"
                  minOccurs="0"
                />
                <element
                  name="operatorDeterminedBarringPLMNspecificData"
                  minOccurs="0"
                />
                <element name="vGCSGroupMembershipList" minOccurs="0"/>
                <element name="vBSGroupMembershipList" minOccurs="0"/>
                <element
                  name="broadcastCallInitiationAllowedList"
                  minOccurs="0"
                />
                <element
                  name="originatingCAMELSubscriptionInformationOCSI"
                  minOccurs="0"
```

```
                    />
                    <element
                      name="terminatingCAMELSubscriptionInformationTCSI"
                      minOccurs="0"
                    />
                    <element
                      name="vMSCTerminatingCAMELSubscriptionInformationVTCSI"
                      minOccurs="0"
                    />
                    <element
                      name="locationInformationSubscriberStateInformation"
                      minOccurs="0"
                    />
                    <element
                      name="uSSDCAMELSubscriptionInformationUCSI"
                      minOccurs="0"
                    />
                    <element name="sSInvocationNotificationSSCSI" minOccurs="0"/>
                    <element
                      name="translationInformationFlagTIFCSI"
                      minOccurs="0"
                    />
                    <element
                      name="dialledServiceCAMELSubscriptionInformationDCSI"
                      minOccurs="0"
                    />
                    <element
                      name="uSSDGeneralCAMELServiceInformationUGCSI"
                      minOccurs="0"
                    />
                    <element
                    name="shortMessageServiceCAMELSubscriptionInformationMOSMSCSI"
                      minOccurs="0"
                    />
                    <element
                    name="shortMessageServiceCAMELSubscriptionInformationMTSMSCSI"
                      minOccurs="0"
                    />
                    <element
                      name="mTSMSCSIVLRNegotiatedCAMELCapabilityHandling"
                      minOccurs="0"
                    />
                    <element name="gsmSCFaddressforCSI" minOccurs="0"/>
                    <element name="iSTAlertTimer" minOccurs="0"/>
                    <element name="cSAllocationRetentionpriority" minOccurs="0"/>
                    <element name="iCSIndicator" minOccurs="0"/>
                    <element name="theCSSupplServiceForCSSS" type="xn:dnList"/>
                  </all>
                </complexType>
              </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>

  <element
    name="GPRSSubscribedService"
    substitutionGroup="sn:SuMSubscribedService"
  >
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
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                <all>
                  <element name="theService" minOccurs="0"/>
                  <element name="theOffer" minOccurs="0"/>
                  <element name="networkAccessMode" minOccurs="0"/>
                  <element name="basicMSISDNIndicator" minOccurs="0"/>
                  <element name="mSISDNAlertIndicator" minOccurs="0"/>
                  <element name="rSZIlists" minOccurs="0"/>
                  <element name="lSAIdentity" minOccurs="0"/>
                  <element name="lSAPriority" minOccurs="0"/>
                  <element name="lSAPreferentialAccessIndicator" minOccurs="0"/>
                  <element name="lSAActiveModeSupportIndicator" minOccurs="0"/>
                  <element name="lSAOnlyAccessIndicator" minOccurs="0"/>
                  <element name="lSAActiveModeIndicator" minOccurs="0"/>
                  <element name="vPLMNIdentifier" minOccurs="0"/>
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<element name="accessRestrictionData" minOccurs="0"/>
<element name="privacyExceptionList" minOccurs="0"/>
<element name="gMLCNumbers" minOccurs="0"/>
<element name="mOLRList" minOccurs="0"/>
<element name="serviceTypes" minOccurs="0"/>
<element name="gGSNNumber" minOccurs="0"/>
<element name="provisionofTeleservice" minOccurs="0"/>
<element name="subscriberStatus" minOccurs="0"/>
<element name="transferofSMoption" minOccurs="0"/>
<element
  name="barringofPacketOrientedServices"
  minOccurs="0"
/>
<element name="pDPType" minOccurs="0"/>
<element name="pDPAddress" minOccurs="0"/>
<element name="accessPointName" minOccurs="0"/>
<element name="vPLMNAddressAllowed" minOccurs="0"/>
<element name="qualityofServiceSubscribed" minOccurs="0"/>
<element
  name="pDPContextChargingCharacteristics"
  minOccurs="0"
/>
<element
  name="gPRSCAMELSubscriptionInformationGPRSCSI"
  minOccurs="0"
/>
<element
name="mOShortMessageServiceCAMELSubscriptionInformationMOSMSCSI"
  minOccurs="0"
/>
<element
name="mTShortMessageServiceCAMELSubscriptionInformationMTSMSCSI"
  minOccurs="0"
/>
<element
  name="mOSMSCSISGSNNegotiatedCAMELCapabilityHandling"
  minOccurs="0"
/>
<element
  name="mTSMSCSISGSNNegotiatedCAMELCapabilityHandling"
  minOccurs="0"
/>
<element
  name="mobilityManagementforGPRSeventnotificationMGCSI"
  minOccurs="0"
/>
<element
  name="mGCSINegotiatedCAMELCapabilityHandling"
  minOccurs="0"
/>
<element name="gsmSCFaddressforCSI" minOccurs="0"/>
<element name="closedSubscriberGroupInformation" minOccurs="0"/>
<element name="gSMSCFaddresslistForODB" minOccurs="0"/>
<element name="barringOfOutgoingCalls" minOccurs="0"/>
<element name="barringOfRoaming" minOccurs="0"/>
<element name="operatorDeterminedBarringPLMNspecificData" minOccurs="0"/>
<element name="sTNSR" minOccurs="0"/>
<element name="iCSIndicator" minOccurs="0"/>
<element
  name="subscribedChargingCharacteristics"
  minOccurs="0"
/>
<element
  name="listofauthorizedvisitednetworkidentifiers"
  minOccurs="0"
/>
<element name="wLANUERemoteIPaddress" minOccurs="0"/>
<element name="staticWLANUERemoteIPAddressList" minOccurs="0"/>
<element name="w-APNBarringTypeList" minOccurs="0"/>
<element name="w-APNChargingDataList" minOccurs="0"/>
<element name="accessDependenceFlag" minOccurs="0"/>
<element name="chargingData" minOccurs="0"/>
<element name="chargingCharacteristics" minOccurs="0"/>
<element name="primaryOCSChargingFunctionName" minOccurs="0"/>
<element name="secondaryOCSChargingFunctionName" minOccurs="0"/>
<element name="w-APNIdentifierList" minOccurs="0"/>
<element name="maxNumberAccessesList" minOccurs="0"/>
<element name="maxSubscribedBandwidth" minOccurs="0"/>
<element name="subscribed3GPPWLANQoSProfile" minOccurs="0"/>
<element
```

```
                                      name="primaryChargingCollectionFunctionName"
                                      minOccurs="0"
                                    />
                                    <element
                                      name="secondaryChargingCollectionFunctionName"
                                      minOccurs="0"
                                    />
                                    <element name="theGPRSSupplServiceForGPRSSS" type="xn:dnList"/>
                                </all>
                            </complexType>
                        </element>
                    </sequence>
                </extension>
            </complexContent>
        </complexType>
    </element>

<element name="EPSSubscribedService" substitutionGroup="sn:SuMSubscribedService">
    <complexType>
        <complexContent>
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                <sequence>
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                        <complexType>
                            <all>
                                <element name="theService" minOccurs="0"/>
                                <element name="theOffer" minOccurs="0"/>
                                <element name="accessPointName" minOccurs="0"/>
                                <element name="accessRestrictionData" minOccurs="0"/>
                                <element name="aPNAMBR" minOccurs="0"/>
                                <element name="barringofPacketOrientedServices" minOccurs="0"/>
                                <element name="contextIdentifier" minOccurs="0"/>
                                <element name="operatorDeterminedBarringPLMNspecificData" minOccurs="0"/>
                                <element name="pDNAddress" minOccurs="0"/>
                                <element name="rSZILists" minOccurs="0"/>
                                <element name="sTNSR" minOccurs="0"/>
                                <element name="subscribedChargingCharacteristics" minOccurs="0"/>
                                <element name="subscriberStatus" minOccurs="0"/>
                                <element name="networkAccessMode" minOccurs="0"/>
                                <element name="barringOfOutgoingCalls" minOccurs="0"/>
                                <element name="barringOfRoaming" minOccurs="0"/>
                                <element name="privacyExceptionList" minOccurs="0"/>
                                <element name="gMLCNumbers" minOccurs="0"/>
                                <element name="mOLRList" minOccurs="0"/>
                                <element name="serviceTypes" minOccurs="0"/>
                                <element name="iCSIndicator" minOccurs="0"/>
                                <element name="aPNOIReplacement" minOccurs="0"/>
                                <element name="subscribedUEAMBR" minOccurs="0"/>
                                <element name="aPNConfigurationProfile" minOccurs="0"/>
                                <element name="rFSP" minOccurs="0"/>
                                <element name="vPLMNAddressAllowed-EPS" minOccurs="0"/>
                                <element name="pDNGWIdentity" minOccurs="0"/>
                                <element name="ePSPDNConnectedChargingCharacteristics" minOccurs="0"/>
                                <element name="pDNGWAllocationType" minOccurs="0"/>
                                <element name="aPNLevelAPNOIReplacement" minOccurs="0"/>
                                <element name="closedSubscriberUserGroupInformation" minOccurs="0"/>
                                <element name="listofAuthorizedvisitednetowrkidentifiers" minOccurs="0 "/>
                                <element name="staticWLANUERemoteIPAddressList" minOccurs="0"/>
                                <element name="w-APONBarringTypeList" minOccurs="0"/>
                                <element name="w-APNChargingDataList" minOccurs="0"/>
                                <element name="wLANUERemoteIPAddress" minOccurs="0"/>
                                <element name="accessDependenceFlag" minOccurs="0"/>
                                <element name="chargingCharacteristics" minOccurs="0"/>
                                <element name="primaryOCSChargingFunctionName" minOccurs="0"/>
                                <element name="secondaryOCSChargingFunctionName" minOccurs="0"/>
                                <element name="primaryChargingCollectionFunctionName" minOccurs="0"/>
                                <element name="secondaryChargingCollectionFunctionName" minOccurs="0"/>
                                <element name="w-APNIdentifierList" minOccurs="0"/>
                                <element name="maxNumberAccessesList" minOccurs="0"/>
                                <element name="maxSubscribedBandwidth" minOccurs="0"/>
                                <element name="subscribed3GPPWLANQoSProfile" minOccurs="0"/>
                                <element name="permanentUserIdentity" minOccurs="0"/>
                                <element name="mIPSubscriberProfile" minOccurs="0"/>
                            </all>
                        </complexType>
                    </element>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
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    </element>


  <element
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    substitutionGroup="sn:SuMSubscribedService"
  >
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        <extension base="xn:NrmClass">
          <sequence>
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              <complexType>
                <all>
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                  <element name="theOffer" minOccurs="0"/>
                  <element name="listofauthorizedvisitednetworkidentifiers"/>
                  <element name="registrationStatus"/>
                  <element name="sCSCFName" minOccurs="0"/>
                  <element name="diameterClientAddressofSCSCF" minOccurs="0"/>
                  <element name="theServerCapabilities" type="xn:dn" minOccurs="0"/>
                  <element
                    name="subscribedMediaProfileIdentifier"
                    minOccurs="0"
                  />
                  <element name="initialFilterCriteriaList" minOccurs="0">
              <complexType>
            <sequence>
              <element name="initialFilterCriteria" minOccurs="1" maxOccurs="unbounded"/>
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            <sequence>
              <element name="serviceIndication" minOccurs="1" maxOccurs="unbounded"/>
            </sequence>
                  </complexType>
                  </element>
                  <element
                    name="primaryEventChargingFunctionName"
                    minOccurs="0"
                  />
                  <element
                    name="secondaryEventChargingFunctionName"
                    minOccurs="0"
                  />
                  <element name="primaryChargingCollectionFunctionName"/>
                  <element
                    name="secondaryChargingCollectionFunctionName"
                    minOccurs="0"
                  />
                  <element name="gsmSCFaddressforIMCSI" minOccurs="0"/>
                  <element name="oIMCSI" minOccurs="0"/>
                  <element name="vTIMCSI" minOccurs="0"/>
                  <element name="dIMCS" minOccurs="0"/>
                  <element name="gAAServiceType" minOccurs="0"/>
                  <element name="gAAServiceIdentifier" minOccurs="0"/>
                  <element name="gBAUserSecuritySettings" minOccurs="0"/>
                  <element name="userSecuritySetting" minOccurs="0"/>
                  <element name="userPublicIdentity" minOccurs="0"/>
                  <element name="gAAAuthorizationflag" minOccurs="0"/>
                  <element name="keyLifetime" minOccurs="0"/>
                  <element name="uICCSecurityType" minOccurs="0"/>
                  <element name="nAFGroupIdentity" minOccurs="0"/>
                </all>
              </complexType>
            </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>

  <element name="SuMServiceProfile" substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass"
type="xn:NrmClass" abstract="true"/>

  <element
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```
              substitutionGroup="sn:SuMServiceProfile"
    >
       <complexType>
         <complexContent>
           <extension base="sn:Common3GPPAccessServiceProfile">
             <sequence>
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                 <complexType>
                   <all>
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                     <element name="basicMSISDNIndicator" minOccurs="0"/>
                     <element name="mSISDNAlertIndicator" minOccurs="0"/>
                     <element name="vLRNumber"/>
                     <element name="mSCNumber"/>
                     <element name="subscriptionRestriction" minOccurs="0"/>
                     <element name="mSCAreaRestrictedFlag"/>
                     <element name="oDBinducedBarringData" minOccurs="0"/>
                     <element name="roamingRestrictionDueToUnsupportedFeature"/>
                     <element name="lSAIdentity" minOccurs="0"/>
                     <element name="lSAPriority" minOccurs="0"/>
                     <element name="lSAPreferentialAccessIndicator" minOccurs="0"/>
                     <element name="lSAActiveModeSupportIndicator" minOccurs="0"/>
                     <element name="lSAOnlyAccessIndicator" minOccurs="0"/>
                     <element name="lSAActiveModeIndicator" minOccurs="0"/>
                     <element name="vPLMNIdentifier" minOccurs="0"/>
                     <element name="ageIndicator" minOccurs="0"/>
                     <element name="lMSI"/>
                     <element name="mobileStationCategory"/>
                     <element name="lMUIdentifier" minOccurs="0"/>
                     <element name="mNRRMSC"/>
                     <element name="notificationToCSEFlagForODB" minOccurs="0"/>
                     <element name="gsmSCFaddresslistForODB" minOccurs="0"/>
                     <element name="messagesWaitingData" minOccurs="0"/>
                     <element name="mobileStationNotReachableFlag" minOccurs="0"/>
                     <element name="memoryCapacityExceededFlag"/>
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                     <element name="traceType" minOccurs="0"/>
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                     <element name="mAPErrorOnTrace" minOccurs="0"/>
                     <element name="traceActivatedInVLR" minOccurs="0"/>
                     <element name="provisionOfBearerService"/>
                     <element name="provisionOfTeleservice"/>
                     <element name="bCAllocation" minOccurs="0"/>
                     <element name="checkSSIndicator"/>
                     <element name="mSPurgedForNonGPRSFlag"/>
                     <element name="barringOfIncomingCalls" minOccurs="0"/>
                     <element name="barringOfPremiumRateCalls" minOccurs="0"/>
                     <element
                       name="barringOfSupplementaryServiceManagement"
                       minOccurs="0"
                     />
                     <element
                       name="barringOfRegistrationOfCallForwarding"
                       minOccurs="0"
                     />
                     <element
                       name="barringOfInvocationOfCallTransfer"
                       minOccurs="0"
                     />
                     <element name="vGCSGroupMembershipList" minOccurs="0"/>
                     <element name="vBSGroupMembershipList" minOccurs="0"/>
                     <element
                       name="broadcastCallInitiationAllowedList"
                       minOccurs="0"
                     />
                     <element
                       name="originatingCAMELSubscriptionInformationOCSI"
                       minOccurs="0"
                     />
                     <element
                       name="terminatingCAMELSubscriptionInformationTCSI"
                       minOccurs="0"
                     />
                     <element
                       name="vMSCTerminatingCAMELSubscriptionInformationVTCSI"
                       minOccurs="0"
                     />
                     <element
                       name="locationInformationSubscriberStateInformation"
```

```
                                    minOccurs="0"
                                />
                                <element
                                  name="uSSDCAMELSubscriptionInformationUCSI"
                                  minOccurs="0"
                                />
                                <element name="sSInvocationNotificationSSCSI" minOccurs="0"/>
                                <element
                                  name="translationInformationFlagTIFCSI"
                                  minOccurs="0"
                                />
                                <element
                                  name="dialledServiceCAMELSubscriptionInformationDCSI"
                                  minOccurs="0"
                                />
                                <element
                                  name="uSSDGeneralCAMELServiceInformationUGCSI"
                                  minOccurs="0"
                                />
                                <element
                                  name="oCSINegotiatedCAMELCapabilityHandling"
                                  minOccurs="0"
                                />
                                <element
                                  name="sSCSINegotiatedCAMELCapabilityHandling"
                                  minOccurs="0"
                                />
                                <element
                                  name="vTCSINegotiatedCAMELCapabilityHandling"
                                  minOccurs="0"
                                />
                                <element
                                name="shortMessageServiceCAMELSubscriptionInformationMOSMSCSI"
                                  minOccurs="0"
                                />
                                <element
                                name="shortMessageServiceCAMELSubscriptionInformationMTSMSCSI"
                                  minOccurs="0"
                                />
                                <element
                                  name="mOSMSCSIVLRNegotiatedCAMELCapabilityHandling"
                                  minOccurs="0"
                                />
                                <element
                                  name="mTSMSCSIVLRNegotiatedCAMELCapabilityHandling"
                                  minOccurs="0"
                                />
                                <element
                                  name="mCSINegotiatedCAMELCapabilityHandling"
                                  minOccurs="0"
                                />
                                <element name="vLRSupportedCAMELPhases" minOccurs="0"/>
                                <element name="gsmSCFaddressforCSI" minOccurs="0"/>
                                <element name="vLROfferedCAMEL4CSIs" minOccurs="0"/>
                                <element name="iSTAlertTimer" minOccurs="0"/>
                                <element name="cSAllocationRetentionpriority" minOccurs="0"/>
                                <element name="theCSSupplServiceForCSSP" type="xn:dnList"/>
                            </all>
                        </complexType>
                    </element>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
</element>

<element
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  substitutionGroup="sn:SuMServiceProfile"
>
    <complexType>
        <complexContent>
            <extension base="sn:PSCommonServiceProfile">
                <sequence>
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                            <all>
                                <element name="theSpecification" minOccurs="0"/>
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                                <element name="mSISDNAlertIndicator" minOccurs="0"/>
```

```xml
                        <element name="vLRNumber" minOccurs="0"/>
                        <element name="lSAIdentity" minOccurs="0"/>
                        <element name="lSAPriority" minOccurs="0"/>
                        <element name="lSAPreferentialAccessIndicator" minOccurs="0"/>
                        <element name="lSAActiveModeSupportIndicator" minOccurs="0"/>
                        <element name="lSAOnlyAccessIndicator" minOccurs="0"/>
                        <element name="lSAActiveModeIndicator" minOccurs="0"/>
                        <element name="vPLMNIdentifier" minOccurs="0"/>
                        <element name="ageIndicator" minOccurs="0"/>
                        <element name="sGSNNumber" minOccurs="0"/>
                        <element name="gGSNNumber" minOccurs="0"/>
                        <element name="mNRG" minOccurs="0"/>
                        <element name="provisionofTeleservice" minOccurs="0"/>
                        <element name="transferofSMoption" minOccurs="0"/>
                        <element name="mSpurgedforGPRSflag" minOccurs="0"/>
                        <element name="pDPType" minOccurs="0"/>
                        <element name="pDPAddress" minOccurs="0"/>
                        <element name="vPLMNAddressAllowed" minOccurs="0"/>
                        <element name="gGSNlist" minOccurs="0"/>
                        <element name="qualityofServiceSubscribed" minOccurs="0"/>
                        <element name="pDPContextIdentifier" minOccurs="0"/>
                        <element
                          name="pDPContextChargingCharacteristics"
                          minOccurs="0"
                        />
                        <element
                          name="gPRSCAMELSubscriptionInformationGPRSCSI"
                          minOccurs="0"
                        />
                        <element
                        name="mOShortMessageServiceCAMELSubscriptionInformationMOSMSCSI"
                          minOccurs="0"
                        />
                        <element
                        name="mTShortMessageServiceCAMELSubscriptionInformationMTSMSCSI"
                          minOccurs="0"
                        />
                        <element
                          name="mOSMSCSISGSNNegotiatedCAMELCapabilityHandling"
                          minOccurs="0"
                        />
                        <element
                          name="mTSMSCSISGSNNegotiatedCAMELCapabilityHandling"
                          minOccurs="0"
                        />
                        <element
                          name="mobilityManagementforGPRSeventnotificationMGCSI"
                          minOccurs="0"
                        />
                        <element
                          name="mGCSINegotiatedCAMELCapabilityHandling"
                          minOccurs="0"
                        />
                        <element
                          name="gPRSCSINegotiatedCAMELCapabilityHandling"
                          minOccurs="0"
                        />
                        <element name="sGSNSupportedCAMELPhases" minOccurs="0"/>
                        <element name="sGSNOfferedCAMEL4CSIs" minOccurs="0"/>
                        <element name="gsmSCFaddressforCSI" minOccurs="0"/>
                        <element name="gSMSCFaddresslistForODB" minOccurs="0"/>
                        <element name="iPSMGWNumber" minOccurs="0"/>
                        <element name="mNRR-SGSN" minOccurs="0"/>
                        <element name="notificationToCSEFlagForODB" minOccurs="0"/>
                        <element name="theGPRSSupplServiceForGPRSSP" type="xn:dnList"/>
                    </all>
                </complexType>
            </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
<element name="EPSServiceProfile" substitutionGroup="sn:SuMServiceProfile">
    <complexType>
      <complexContent>
        <extension base="sn:PSCommonServiceProfile">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
```

```
                    <all>
                      <element name="theSpecification" minOccurs="0"/>
                      <element name="aPNAMBR" minOccurs="0"/>
                      <element name="contextIdentifier" minOccurs="0"/>
                      <element name="pDNAddress" minOccurs="0"/>
                      <element name="aPNOIReplacement" minOccurs="0"/>
                      <element name="subscribedUEAMBR" minOccurs="0"/>
                      <element name="aPNConfigurationProfile" minOccurs="0"/>
                      <element name="rFSP" minOccurs="0"/>
                      <element name="pDNGWIdentity" minOccurs="0"/>
                      <element name="ePSPDNConnectionChargingCharacteristics" minOccurs="0"/>
                      <element name="pDNGWAllocationType" minOccurs="0"/>
                      <element name="aPNLevelAPNOIReplacement" minOccurs="0"/>
                      <element name="roamingRestrictionsDueToUnsupportedFeatureMME" minOccurs="0"/>
                      <element name="roamingRestrictionsDueToUnsupportedFeatureSGSN" minOccurs="0"/>
                      <element name="mSPurgedForEPSFlag" minOccurs="0"/>
                      <element name="uRRPMME" minOccurs="0"/>
                      <element name="mMEName" minOccurs="0"/>
                      <element name="sGSNName" minOccurs="0"/>
                      <element name="iWFNumber" minOccurs="0"/>
                      <element name="sGSNAreaRestrictedFlag" minOccurs="0"/>
                      <element name="permanentUserIdentity" minOccurs="0"/>
                      <element name="vPLMNAddressAllowed-EPS" minOccurs="0"/>
                      <element name="theOptHandover3GPP2Par" type="xn:dn"/>
                      <element name="theNon3GPPAccessPar" type="xn:dn"/>
                    </all>
                  </complexType>
                </element>
              </sequence>
            </extension>
          </complexContent>
        </complexType>
      </element>

  <element name="PSCommonServiceProfile" abstract="true" substitutionGroup="sn:SuMServiceProfile">
      <complexType>
        <complexContent>
          <extension base="sn:Common3GPPAccessServiceProfile">
            <sequence>
              <element name="attributes" minOccurs="0">
                <complexType>
                  <all>
                    <element name="roamingRestrictedintheSGSNduetounsupportedfeature" minOccurs="0"/>
                    <element name="barringofPacketOrientedServices" minOccurs="0"/>
                    <element name="traceActivatedinSGSN" minOccurs="0"/>
                    <element name="iPAddressOfTraceCollectionEntity" minOccurs="0"/>
                    <element name="accessPointName" minOccurs="0"/>
                    <element name="subscribedChargingCharacteristics" minOccurs="0"/>
                    <element name="sTNSR" minOccurs="0"/>
                    <element name="closedSubscriberGroupInformation" minOccurs="0"/>
                    <element name="theIWANPar" type="xn:dn" minOccurs="0"/>
                  </all>
                </complexType>
              </element>
            </sequence>
          </extension>
        </complexContent>
      </complexType>
    </element>
  <element name="Common3GPPAccessServiceProfile" abstract="true"
  substitutionGroup="sn:SuMServiceProfile">
      <complexType>
        <complexContent>
          <extension base="sn:SuMServiceProfile">
            <sequence>
              <element name="attributes" minOccurs="0">
                <complexType>
                  <all>
                    <element name="rSZILists" minOccurs="0"/>
                    <element name="accessRestrictionData" minOccurs="0" />
                    <element name="subscriberStatus" minOccurs="0"/>
                    <element name="barringOfOutgoingCalls" minOccurs="0"/>
                    <element name="barringOfRoaming" minOccurs="0"/>
                    <element name="operatorDeterminedBarringPLMNspecificData" minOccurs="0"/>
                    <element name="traceReference2" minOccurs="0"/>
                    <element name="traceDepth" minOccurs="0"/>
                    <element name="listOfNETypestoTrace" minOccurs="0"/>
                    <element name="triggeringEvents" minOccurs="0"/>
                    <element name="listOfInterfacesToTrace" minOccurs="0"/>
```

```xml
                    <element name="privacyExceptionList" minOccurs="0"/>
                    <element name="gMLCNumbers" minOccurs="0"/>
                    <element name="iCSIndicator" minOccurs="0"/>
                    <element name="mOLRList" minOccurs="0"/>
                    <element name="serviceTypes" minOccurs="0"/>
                    <element name="networkAccessMode" minOccurs="0"/>
                  </all>
                </complexType>
              </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>

<element name="IWANParameters" substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="w-APN" minOccurs="0"/>
                  <element name="listofauthorizedvisitednetworkidentifiers" minOccurs="0"/>
                  <element name="threeGPPAAAServerName" minOccurs="0" />
                  <element name="threeGPPAAAProxyName" minOccurs="0"/>
                  <element name="wLANUERemoteIPaddress" minOccurs="0"/>
                  <element name="statisWLANUERemoteIPAddressList" minOccurs="0"/>
                  <element name="w-APNBarringTypeList" minOccurs="0"/>
                  <element name="w-APNChargingDataList" minOccurs="0"/>
                  <element name="accessDependenceFlag" minOccurs="0"/>
                  <element name="i-WLANAccessType" minOccurs="0"/>
                  <element name="wLANIdentifierList" minOccurs="0"/>
                  <element name="maxNumberAccessesList" minOccurs="0"/>
                  <element name="maxSubscribedBandwidth" minOccurs="0"/>
                  <element name="subscribed3GPPWLANQoSProfile" minOccurs="0"/>
                  <element name="chargingChracteristics" minOccurs="0"/>
                  <element name=" primaryOCSChargingFunctionName" minOccurs="0"/>
                  <element name="secondaryOCSChargingFunctionName" minOccurs="0"/>
                  <element name="primaryChargingCollectionFunctionName" minOccurs="0"/>
                  <element name="secondaryChargingCollectionFunctionName" minOccurs="0"/>
                  <element name="userStatus" minOccurs="0"/>
                </all>
              </complexType>
            </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>

<element name="OptHandover3GPP2Parameters"
substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="rATType" minOccurs="0"/>
                </all>
              </complexType>
            </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>

<element name="Non3GPPAccessParameters"
substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
```

```xml
                    <all>
                      <element name="rATType" minOccurs="0"/>
                      <element name="visitedNetworkIdentifier" minOccurs="0"/>
                      <element name="mIPSubscriberProfile" minOccurs="0"/>
                      <element name="permanentUserIdentity" minOccurs="0"/>
                    </all>
                  </complexType>
                </element>
              </sequence>
            </extension>
          </complexContent>
        </complexType>
      </element>

      <element
        name="IMSServiceProfile"
        substitutionGroup="sn:SuMServiceProfile"
      >
        <complexType>
          <complexContent>
            <extension base="xn:NrmClass">
              <sequence>
                <element name="attributes" minOccurs="0">
                  <complexType>
                    <all>
                      <element name="theSpecification" minOccurs="0"/>
                      <element name="listofauthorizedvisitednetworkidentifiers"/>
                      <element name="registrationStatus"/>
                      <element name="sCSCFName" minOccurs="0"/>
                      <element name="diameterClientAddressofSCSCF" minOccurs="0"/>
                      <element name="theServerCapabilities" type="xn:dn" minOccurs="0"/>
                      <element
                        name="subscribedMediaProfileIdentifier"
                        minOccurs="0"
                      />
                      <element name="initialFilterCriteriaList" minOccurs="0">
                  <complexType>
                  <sequence>
                    <element name="initialFilterCriteria" minOccurs="1" maxOccurs="unbounded"/>
                  </sequence>
                        </complexType>
                      </element>
                      <element name="applicationServerInformation" minOccurs="0"/>
                      <element name="serviceIndicationList" minOccurs="0">
                  <complexType>
                  <sequence>
                    <element name="serviceIndication" minOccurs="1" maxOccurs="unbounded"/>
                  </sequence>
                        </complexType>
                      </element>
                      <element
                        name="primaryEventChargingFunctionName"
                        minOccurs="0"
                      />
                      <element
                        name="secondaryEventChargingFunctionName"
                        minOccurs="0"
                      />
                      <element name="primaryChargingCollectionFunctionName"/>
                      <element
                        name="secondaryChargingCollectionFunctionName"
                        minOccurs="0"
                      />
                      <element name="gsmSCFaddressforIMCSI" minOccurs="0"/>
                      <element name="iMSSFaddressforIMCSI" minOccurs="0"/>
                      <element name="oIMCSI" minOccurs="0"/>
                      <element name="vTIMCSI" minOccurs="0"/>
                      <element name="dIMCS" minOccurs="0"/>
                      <element name="gAAServiceType" minOccurs="0"/>
                      <element name="gAAServiceIdentifier" minOccurs="0"/>
                      <element name="gBAUserSecuritySettings" minOccurs="0"/>
                      <element name="userSecuritySetting" minOccurs="0"/>
                      <element name="userPublicIdentity" minOccurs="0"/>
                      <element name="gAAAuthorizationflag" minOccurs="0"/>
                      <element name="keyLifetime" minOccurs="0"/>
                      <element name="uICCSecurityType" minOccurs="0"/>
                      <element name="nAFGroupIdentity" minOccurs="0"/>
                      <element name="thePublicId" type="xn:dnList"/>
                    </all>
                  </complexType>
```

```
                </element>
              </sequence>
            </extension>
          </complexContent>
        </complexType>
      </element>

      <complexType name="IMSPublicIdentificationType">
        <complexContent>
          <extension base="sn:SuMIdentityType">
       <all>
         <element name="publicUserIdentity" type="string" minOccurs="0"/>
         <element name="barringIndication" type="sn:binEnum" minOccurs="0"/>
       </all>
          </extension>
        </complexContent>
      </complexType>

      <element name="IMSPublicIdentification" type="sn:IMSPublicIdentificationType"
    substitutionGroup="sn:SuMIdentity"/>


      <simpleType name="binEnum">
        <restriction base="string">
          <enumeration value="FALSE"/>
          <enumeration value="TRUE"/>
        </restriction>
      </simpleType>

      <simpleType name="multinumberingMSISDNIndicator">
        <restriction base="string">
          <enumeration value="BASIC"/>
          <enumeration value="ALERT"/>
        </restriction>
      </simpleType>

      <complexType name="multinumberingMSISDNList">
        <sequence minOccurs="0" maxOccurs="unbounded">
          <element name="mSISDN" type="string"/>
          <element name="indicator" type="sn:multinumberingMSISDNIndicator"/>
        </sequence>
      </complexType>

      <complexType name="ServerCapabilitiesType">
        <complexContent>
          <extension base="sn:SuMServiceParameterType">
            <all>
              <element name="serverCapabilities"/>
            </all>
          </extension>
        </complexContent>
      </complexType>

      <element name="ServerCapabilities" type="sn:ServerCapabilitiesType"
    substitutionGroup="sn:SuMServiceParameter"/>

      <complexType name="SuMIdentityType">
        <complexContent>
          <restriction base="xn:NrmClass"/>
        </complexContent>
      </complexType>

      <complexType name="SuMServiceParameterType">
        <complexContent>
          <restriction base="xn:NrmClass"/>
        </complexContent>
      </complexType>

      <element name="SuMIdentity" type="sn:SuMIdentityType"
    substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass" abstract="true"/>

      <element name="SuMServiceParameter" type="sn:SuMServiceParameterType"
    substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass" abstract="true"/>

    </schema>
```

Annex B (informative): Change history

Change history								
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Cat	Old	New
05-2010	SA-48	SP-100270	--	--	Presentation to SA for information and approval	--	--	1.0.0
06-2010	SA-48	--	--	--	Publication	--	1.0.0	10.0.0
09-2010	SA-49	SP-100489	001	--	Correct the support qualifier in XML definition to be aligned with IS	F	10.0.0	10.1.0
09-2010	SA-49	SP-100494	002	--	Modifications to Packet Access Service Parameters and Modeling	C	10.0.0	10.1.0
09-2010	SA-49	SP-100494	003	--	Aligning with the SuM NRM IRP IS - removing some SuM IOCs from Itf-N	C	10.0.0	10.1.0
12-2010	SA-50	SP-100833	004	--	Correcting the IOC PSSubscribedService name in XML definition - Align with 32.172 IS	F	10.1.0	10.2.0
12-2010	SA-50	SP-100755	006	--	Correcting faults in schema definition	F	10.1.0	10.2.0
12-2010	SA-50	SP-100755	007	--	Add the missing MobileUserData attribute in SuMSubscriberProfile - Align with 32.172 SuM NRM IS	F	10.1.0	10.2.0
03-2011	SA-51	SP-110104	008	1	Improve Subscription Management (SuM) Network Resource Model (NRM) Integration Reference Point (IRP) access service modelling - Align with 32.172 IS	C	10.2.0	10.3.0
2012-09	-	-	-	-	-	Update to Rel-11 version (MCC)	10.3.0	**11.0.0**