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Telecommunication management;
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interface Network Resource Model (NRM)
Integration Reference Point (IRP);
Solution Set (SS) definitions
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Foreword

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- 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:

28.734: Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP): Requirements

28.735: Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)

28.736: Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Solution Set (SS) definitions

1 Scope

The present document is part of an Integration Reference Point (IRP) named Signalling Transport Network (STN) interface Network Resource Model (NRM) IRP, through which an `IRPAgent` can communicate configuration management information to one or several `IRPManagers` concerning STN interface resources. The STN interface 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 STN interface NRM IRP.

This Solution Set definition is related to 3GPP TS 28.735 [9] V11.0.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 TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 32.612: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP): Information Service (IS)".

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

[4] W3C REC-xml11-20060816: "Extensible Markup Language (XML) 1.1 (Second Edition)".

[5] Void

[6] W3C XML Schema Definition Language (XSD) 1.1 Part 1: Structures.

[7] W3C XML Schema Definition Language (XSD) 1.1 Part 2: Datatypes.

[8] W3C REC-xml-names-20060816: "Namespaces in XML 1.1 (Second Edition)".

[9] 3GPP TS 28.735: "Telecommunication management; Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

[10] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".

[11] 3GPP TS 28.623: "Telecommunication management; Generic Network Resources Model (NRM) Integration Reference Point (IRP); Solution Set (SS) definitions".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

XML file: See definition of [11].

XML document: See definition of [11].

XML declaration: See definition of [11].

XML element: See definition of [11].

empty XML element: See definition of [11].

XML content (of an XML element): See definition of [11].

XML start-tag: See definition of [11].

XML end-tag: See definition of [11].

XML empty-element tag: See definition of [11].

XML attribute specification: See definition of [11].

DTD: See definition of [11].

XML schema: See definition of [11].

XML namespace: See definition of [11].

XML complex type: See definition of [11].

XML element type: See definition of [11].

3.2 Abbreviations

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

CM	Configuration Management
CORBA	Common Object Request Broker Architecture
DN	Distinguished Name
DTD	Document Type Definition
IDL	Interface Definition Language
IRP	Integration Reference Point
IS	Information Service
MO	Managed Object
MOC	Managed Object Class
NRM	Network Resource Model
OMG	Object Management Group
SS	Solution Set
STN	Signalling Transport Network
UMTS	Universal Mobile Telecommunications System
UTRAN	Universal Terrestrial Radio Access Network
XML	eXtensible Markup Language

4 Solution Set Definitions

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

- 3GPP STN NRM IRP CORBA SS (Annex A)
- 3GPP STN NRM IRP XML Definitions (Annex B)

Annex A (normative): CORBA Solution Set

This annex contains the CORBA Solution Set for the IRP whose semantics is specified in STN NRM IRP: Information Service (TS 28.735 [9]).

A.1 Architectural features

The overall architectural feature of STN Network Resources IRP is specified in 3GPP TS 28.735 [9].
This clause specifies features that are specific to the CORBA SS.

A.1.1 Syntax for Distinguished Names

See clause A.1.1 of [11].

A.1.2 Rules for NRM extensions

See clause A.1.2 of [11].

A.2 Mapping

A.2.1 General mappings

See clause A.2.1 of [11].

A.2.2 Information Object Class (IOC) mapping

This SS supports reference attributes for relations other than containment relations between objects. Reference attributes are therefore introduced in each MOC where needed.

A.2.2.1 IOC MtpSignPoint

Mapping from NRM IOC MtpSignPoint attributes to SS equivalent MOC MtpSignPoint attributes

IS Attributes	SS Attributes	SS Type
id	mtpSignPointId	string
pointCode	pointCode	unsigned long
networkIndicator	networkIndicator	STNNetworkResourcesIRPSystem::AttributeTypes::NetworkIndicatorType
pointCodeLength	pointCodeLength	STNNetworkResourcesIRPSystem::AttributeTypes::PointCodeLengthType
spType	spType	STNNetworkResourcesIRPSystem::AttributeTypes::SPTypeType
userLabel	userLabel	string

A.2.2.2 IOC SignLinkSetTp

Mapping from NRM IOC SignLinkSetTp attributes to SS equivalent MOC SignLinkSetTp attributes

IS Attributes	SS Attributes	SS Type
id	signLinkSetTpId	string
adjPc	adjPc	unsigned long
userLabel	userLabel	string
maxCapacityLS	maxCapacityLS	float

A.2.2.3 IOC SignLinkTp

Mapping from NRM IOC SignLinkTp attributes to SS equivalent MOC SignLinkTp attributes

IS Attributes	SS Attributes	SS Type
id	signLinkTpId	string
slCode	slCode	unsigned long
slsCodeNormalList	slsCodeNormalList	STNNetworkResourcesIRPSystem::AttributeTypes::SLSListType
slsCodeCurrentList	slsCodeCurrentList	STNNetworkResourcesIRPSystem::AttributeTypes::SLSListType
linkTpStatus	linkTpStatus	STNNetworkResourcesIRPSystem::AttributeTypes::LinkStatusType
maxCapacitySL	maxCapacitySL	float
userLabel	userLabel	string
signLinkType	signLinkType	STNNetworkResourcesIRPSystem::AttributeTypes::SignLinkTypeType

A.2.2.4 IOC SignRouteSetNePart

Mapping from NRM IOC SignRouteSetNePart attributes to SS equivalent MOC SignRouteSetNePart attributes

IS Attributes	SS Attributes	SS Type
id	signRouteSetNePartId	string
destinationPc	destinationPc	unsigned long
userLabel	userLabel	string
loadsharingInformationRouteSetNePart	loadsharingInformationRouteSetNePart	string

A.2.2.5 IOC SignRouteNePart

Mapping from NRM IOC SignRouteNePart attributes and association roles to SS equivalent MOC SignRouteNePart attributes

IS Attributes	SS Attributes	SS Type
id	signRouteNePartId	string
signLinkSetTpPointer	signLinkSetTpPointer	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference
fixedPriority	fixedPriority	unsigned long
userLabel	userLabel	string

A.2.3 Information Object Class (IOC) Mapping

This SS supports reference attributes for relations other than containment relations between objects. Reference attributes are therefore introduced in each MOC where needed.

A.2.3.1 IOC M3UAEntity

Mapping from NRM IOC M3UAEntity attributes to SS equivalent MOC M3UAEntity attributes

IS Attributes	SS Attributes	SS Type
id	m3UAEntityId	string
m3UAEntityPointCode	m3UAEntityPoint Code	unsigned long
m3UAEntityType	m3UAEntityType	STNNetworkResourcesIRPSystem::AttributeTypes::m3UAEntityTypeType
networkIndicator	networkIndicator	STNNetworkResourcesIRPSystem::AttributeTypes::networkIndicatorType
pointCodeLength	pointCodeLength	STNNetworkResourcesIRPSystem::AttributeTypes::PointCodeLengthType

A.2.3.2 IOC M3UALinkSetTp

Mapping from NRM IOC m3UALinkSetTp attributes to SS equivalent MOC m3UALinkSetTp attributes

IS Attributes	SS Attributes	SS Type
id	m3UALinkSetTPId	string
adjPc	adjPc	unsigned long
trafficMode	trafficMode	STNNetworkResourcesIRPSystem::AttributeTypes::trafficModeType

A.2.3.3 IOC M3UALinkTp

Mapping from NRM IOC m3UALinkTp attributes to SS equivalent MOC m3UALinkTp attributes

IS Attributes	SS Attributes	SS Type
id	m3UALinkTpId	string
m3UALinkTPState	m3UALinkTPState	STNNetworkResourcesIRPSystem::AttributeTypes::m3UALinkTPStateType
sCTPAssocLocalAddr	sCTPAssocLocalAddr	STNNetworkResourcesIRPSystem::AttributeTypes::sCTPAssocAddrType
sCTPAssocRemoteAddr	sCTPAssocRemoteAddr	STNNetworkResourcesIRPSystem::AttributeTypes::sCTPAssocAddrType

A.2.3.4 IOC M3UARouteSetNePart

Mapping from NRM IOC m3UARouteSetNePart attributes to SS equivalent MOC m3UARouteSetNePart attributes

IS Attributes	SS Attributes	SS Type
id	m3UARouteSetNePartId	string
destinationPc	destinationPc	unsigned long
m3UARouteNePartm3UALinkSetTP	m3UARouteNePart m3UALinkSetTP	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference

A.2.3.5 IOC M3UARouteNePart

Mapping from NRM IOC m3UARouteNePart attributes to SS equivalent MOC m3UARouteNePart attributes

IS Attributes	SS Attributes	SS Type
id	m3UARouteNePartId	string
relatedM3UALinkSetTPId	m3UALinkSetTPId	string
fixedPriority	fixedPriority	STNNetworkResourcesIRPSystem::AttributeTypes::fixedPriorityType

A.3 Solution Set definitions

A.3.1 IDL definition structure

Clause A.3.2 defines the types which are used by the STN NRM IRP.

Clause A.3.3 defines the MO classes for the STN NRM IRP.

A.3.2 IDL specification "STNNetworkResourcesIRPSystem.idl"

```
// File: STNNetworkResourcesIRPSystem.idl
#ifndef _STN_NETWORK_RESOURCES_IRP_SYSTEM_IDL_
#define _STN_NETWORK_RESOURCES_IRP_SYSTEM_IDL_
#pragma prefix "3gppsa5.org"
module STNNetworkResourcesIRPSystem
{
   /**
   *  This module adds datatype definitions for types
   *  used in the NRM which are not basic datatypes defined
   *  already in CORBA.
   */
   module AttributeTypes
   {
     enum NetworkIndicatorType
     {
       INTERNATIONAL,
       SPARE,
       NATIONAL,
       NATIONAL_SPARE
     };
     enum PointCodeLengthType
     {
       BITS_24,
       BITS_14
     };
     enum SPTypeType
     {
       SEP,
       STP,
       STEP
     };
     typedef unsigned long SLSType; // 0..15
     typedef sequence<SLSType,16> SLSListType;
     enum LinkStati
     {
       DEACTIVATED,
       FAILED,
       LOCAL_BLOCKED,
       REMOTE_BLOCKED,
       LOCAL_INHIBITED,
       REMOTE_INHIBITED
     };
```

```
      typedef sequence <LinkStati,6> LinkStatusType;
      enum SignLinkTypeType
      {
        ST_64K,
        ST_2M
      };
      enum m3UAEntityType
      {
        M3UA_AS,
        SG
      };
      enum m3UALinkTPStateType
      {
        UNESTABLISH,
        ESTABLISHED,
        INACTIVE,
        ACTIVE
      };
      enum AddrType
      {
        IPV4,
        IPV6
      };
      struct sCTPAssocAddrType
      {
        unsigned long portId;
        AddrType addrType;
        string IPaddr;
      };
      enum trafficModeType
      {
        OVERRIDE,
        LOAD_SHARE,
        BROADCAST
      };
     };
};
#endif // _STN_NETWORK_RESOURCES_IRP_SYSTEM_IDL_
```

A.3.3 IDL specification "STNNetworkResourcesIRPDefs.idl"

```
// File: STNNetworkResourcesIRPDefs.idl
#ifndef _STN_NETWORK_RESOURCES_IRP_DEFS_IDL_
#define _STN_NETWORK_RESOURCES_IRP_DEFS_IDL_

#include "GenericNetworkResourcesNRMDefs.idl"

#pragma prefix "3gppsa5.org"

/**
 * This module defines constants for each MO class name and
 * the attribute names for each defined MO class.
 */
module STNNetworkResourcesIRPDefs
{

 /**
       *  Definitions for MO class MtpSignPoint
       */
      interface MtpSignPoint: GenericNetworkResourcesNRMDefs::Top
      {
         const string CLASS = "MtpSignPoint";

         // Attribute Names
         //
         const string mtpSignPointId = "mtpSignPointId";
         const string pointCode = "pointCode";
         const string networkIndicator = "networkIndicator";
         const string pointCodeLength = "pointCodeLength";
         const string spType = "spType";
         const string userLabel = "userLabel";
      };

      /**
       *  Definitions for MO class SignLinkSetTp
       */
      interface SignLinkSetTp: GenericNetworkResourcesNRMDefs::Top
```

```
      {
         const string CLASS = "SignLinkSetTp";

         // Attribute Names
         //
              const string signLinkSetTpId = "signLinkSetTpId";
              const string adjPc = "adjPc";
              const string userLabel = "userLabel";
              const string maxCapacityLS = "maxCapacityLS";

      };


      /**
       *  Definitions for MO class SignLinkTp
       */
      interface SignLinkTp: GenericNetworkResourcesNRMDefs::Top
      {
         const string CLASS = "SignLinkTp";

         // Attribute Names
         //
         const string signLinkTpId = "signLinkTpId";
         const string slCode = "slCode";
         const string slsCodeNormalList = "slsCodeNormalList";
         const string slsCodeCurrentList = "slsCodeCurrentList";
         const string linkTpStatus = "linkTpStatus";
         const string maxCapacitySL = "maxCapacitySL";
         const string userLabel = "userLabel";
         const string signLinkType = "signLinkType";
      };

      /**
       *  Definitions for MO class SignRouteSetNePart
       */
      interface SignRouteSetNePart: GenericNetworkResourcesNRMDefs::Top
      {
         const string CLASS = "SignRouteSetNePart";

         // Attribute Names
         //
         const string signRouteSetNePartId = "signRouteSetNePartId";
         const string destinationPc = "destinationPc";
         const string userLabel = "userLabel";
         const string loadsharingInformationRouteSetNePart = "loadsharingInformationRouteSetNePart";
      };


      /**
       *  Definitions for abstract MO class SignRouteNePart
       *
       */
      interface SignRouteNePart: GenericNetworkResourcesNRMDefs::Top
      {
         const string CLASS = "SignRouteNePart";

         // Attribute Names
         //
         const string signRouteNePartId = "signRouteNePartId";
         const string signLinkSetTpPointer = "signLinkSetTpPointer";
         const string fixedPriority = "fixedPriority";
         const string userLabel = "userLabel";
      };
/**
       *  Definitions for MO class M3UAEntity
       *
       */
    interface M3UAEntity: GenericNetworkResourcesNRMDefs::ManagedFunction
      {
         const string CLASS = "M3UAEntity";
         // Attribute Names
         //
         const string m3UAEntityId = "m3UAEntityId";
         const string m3UAEntityPointCode = "m3UAEntityPointCode";
         const string m3UAEntityType = "m3UAEntityType";
         const string networkIndicator = "networkIndicator";
         const string pointCodeLength = "pointCodeLength";
      };
```

```
      /**
       *  Definitions for MO class M3UALinkSetTp
       */
      interface M3UALinkSetTp: GenericNetworkResourcesNRMDefs::ManagedFunction
      {
         const string CLASS = "M3UALinkSetTp";
         // Attribute Names
         //
          const string m3UALinkSetTPId = "m3UALinkSetTPId";
          const string adjPc = "adjPc";
          const string trafficMode = "trafficMode";
      };

      /**
       *  Definitions for MO class M3UALinkTp
       */
      interface M3UALinkTp: GenericNetworkResourcesNRMDefs::ManagedFunction
      {
         const string CLASS = "M3UALinkTp";
         // Attribute Names
         //
         const string m3UALinkTpId = "m3UALinkTpId";
         const string m3UALinkTPState = "m3UALinkTPState";
         const string sCTPAssocLocalAddr = "sCTPAssocLocalAddr";
         const string sCTPAssocRemoteAddr = "sCTPAssocRemoteAddr";
      };
      /**
       *  Definitions for MO class M3UARouteSetNePart
       */
      interface M3UARouteSetNePart: GenericNetworkResourcesNRMDefs::ManagedFunction
      {
         const string CLASS = "M3UARouteSetNePart";

         // Attribute Names
         const string m3UARouteSetNePartId = "m3UARouteSetNePartId";
         const string destinationPc = "destinationPc";
         const string m3UARouteNePartm3UALinkSetTP = "m3UARouteNePartm3UALinkSetTP";
      };

      /**
       *  Definitions for abstract MO class M3UARouteNePart
       *
       */
      interface M3UARouteNePart: GenericNetworkResourcesNRMDefs::ManagedFunction
      {
         const string CLASS = "M3UARouteNePart";
         // Attribute Names
         //
         const string m3UARouteNePartId = "m3UARouteNePartId";
         const string m3UALinkSetTPId = "m3UALinkSetTPId";
         const string fixedPriority = "fixedPriority";
      };
};
#endif // _STN_NETWORK_RESOURCES_IRP_DEFS_IDL_
```

Annex B (normative): XML Definitions

This annex contains the XML Definitions for the Generic NRM IRP as it applies to Itf-N, in accordance with STN NRM IRP Information Service (TS 28.735 [9]).

The XML file formats are based on XML [4], XML Schema [6] [7] and XML Namespace [8] standards.

B.1 Architectural features

The overall architectural feature of STN IRP is specified in 3GPP TS 28.735 [9].
This clause specifies features that are specific to the Schema definitions.

B.1.1 Syntax for Distinguished Names

The syntax of a Distinguished Name is defined in 3GPP TS 32.300 [10].

B.2 Mapping

B.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.

B.2.2 Information Object Class (IOC) mapping

The mapping is not present in the current version of this specification.

B.3 Solution Set definitions

B.3.1 XML definition structure

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

Annex B.3.3 defines the NRM-specific XML schema `stnNrm.xsd` for the STN NRM IRP defined in 3GPP TS 28.735 [9].

XML schema `stnNrm.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 [3].

B.3.2 Graphical Representation

The graphical representation is not present in the current version of this specification.

B.3.3 XML schema "`stnNrm.xsd`"

```
<?xml version="1.1" encoding="UTF-8"?>

<!--
  3GPP TS 28.736 STN Network Resources IRP
  Bulk CM Configuration data file NRM-specific XML schema
  stnNrm.xsd
-->

<schema
  targetNamespace=
"http://www.3gpp.org/ftp/specs/archive/28_series/28.736#stnNrm"
  elementFormDefault="qualified"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xn=
"http://www.3gpp.org/ftp/specs/archive/28_series/28.623#genericNrm"
  xmlns:stn=
"http://www.3gpp.org/ftp/specs/archive/28_series/28.736#stnNrm"
>
  <import
    namespace=
"http://www.3gpp.org/ftp/specs/archive/28_series/28.623#genericNrm"
  />
```

```
<!-- STN Network Resources IRP NRM attribute related XML types -->

<simpleType name="networkIndicator">
  <restriction base="string">
    <enumeration value="International"/>
    <enumeration value="Spare"/>
    <enumeration value="National"/>
    <enumeration value="NationalSpare"/>
  </restriction>
</simpleType>

<simpleType name="pointCodeLength">
  <restriction base="string">
    <enumeration value="BITS_24"/>
    <enumeration value="BITS_14"/>
  </restriction>
</simpleType>

<simpleType name="spType">
  <restriction base="string">
    <enumeration value="SEP"/>
    <enumeration value="STP"/>
    <enumeration value="STEP"/>
  </restriction>
</simpleType>

<complexType name="slsCodeList">
  <sequence>
    <element name="slsCode" minOccurs="0" maxOccurs="16">
      <simpleType>
        <restriction base="integer">
          <minInclusive value="0"/>
          <maxInclusive value="15"/>
        </restriction>
      </simpleType>
    </element>
  </sequence>
</complexType>

<simpleType name="linkTpStatusElementType">
  <restriction base="string">
    <enumeration value="deactivated"/>
    <enumeration value="failed"/>
    <enumeration value="localBlocked"/>
    <enumeration value="remoteBlocked"/>
    <enumeration value="localInhibited"/>
    <enumeration value="remoteInhibited"/>
  </restriction>
</simpleType>
<complexType name="linkTpStatusType">
  <sequence minOccurs="0" maxOccurs="6">
    <element name="linkTpStatusElement" type="stn:linkTpStatusElementType"/>
  </sequence>
</complexType>
<simpleType name="signLinkType">
  <restriction base="string">
    <enumeration value="ST_64K"/>
    <enumeration value="ST_2M"/>
  </restriction>
</simpleType>
<simpleType name="m3UAEntityTypeType">
  <restriction base="string">
    <enumeration value="M3UA_AS"/>
    <enumeration value="SG"/>
  </restriction>
</simpleType>
<simpleType name="m3UALinkTPStateType">
 <restriction base="string">
    <enumeration value="UNESTABLISH"/>
    <enumeration value="ESTABLISHED"/>
    <enumeration value="INACTIVE"/>
    <enumeration value="ACTIVE"/>
  </restriction>
</simpleType>
<simpleType name="IPAddrTypeType">
 <restriction base="string">
    <enumeration value="IPv4"/>
    <enumeration value="IPv6"/>
```

```
    </restriction>
  </simpleType>
  <complexType name="sCTPAssocAddrType">
    <sequence minOccurs="0" maxOccurs="unbounded">
      <element name="IPAddrType" type="stn:IPAddrTypeType"/>
      <element name="IPAddr" type="string"/>
    </sequence>
  </complexType>
  <simpleType name="trafficModeType">
    <restriction base="string">
      <enumeration value="Override"/>
      <enumeration value="LoadShare"/>
      <enumeration value="Broadcast"/>
    </restriction>
  </simpleType>
<!-- STN Network Resources IRP NRM class associated XML elements -->

  <element name="MtpSignPoint" substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="pointCode" type="unsignedLong"/>
                  <element name="networkIndicator" type="stn:networkIndicator"/>
                  <element name="pointCodeLength" type="stn:pointCodeLength"/>
                  <element name="spType" type="stn:spType"/>
                  <element name="userLabel" type="string"/>
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="stn:SignLinkSetTp"/>
              <element ref="stn:SignRouteSetNePart"/>
              <element ref="xn:VsDataContainer"/>
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>

  <element name="SignLinkSetTp">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="adjPc" type="unsignedLong"/>
                  <element name="userLabel" type="string"/>
                  <element name="maxCapacityLS" type="float"/>
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="stn:SignLinkTp"/>
              <element ref="xn:VsDataContainer"/>
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>

  <element name="SignLinkTp">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="slCode" type="integer"/>
                  <element name="slsCodeNormalList" type="stn:slsCodeList" minOccurs="0"/>
```

```
                <element name="slsCodeCurrentList" type="stn:slsCodeList"/>
                <element name="linkTpStatus" type="stn:linkTpStatusType"/>
                <element name="maxCapacitySL" type="integer"/>
                <element name="userLabel" type="string"/>
                <element name="signLinkType" type="stn:signLinkType"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>
<element name="SignRouteSetNePart">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="destinationPc" type="unsignedLong"/>
                <element name="userLabel" type="string"/>
                <element name="loadsharingInformationRouteSetNePart" type="string"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="stn:SignRouteNePart"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="SignRouteNePart">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="signLinkSetTpPointer" type="xn:dn"/>
                <element name="fixedPriority" type="unsignedLong"/>
                <element name="userLabel" type="string"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>
<!-- M3UA Network Resources IRP NRM class associated XML elements -->
<element name="M3UAEntity" substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
        <sequence>
          <element name="m3UAEntityPointCode" type="unsignedLong"/>
          <element name="m3UAEntityType" type="stn:m3UAEntityTypeType"/>
          <element name="networkIndicator" type="stn:networkIndicator"/>
          <element name="pointCodeLength" type="stn:pointCodeLength"/>
          <element name="userLabel" type="string"/>
         </sequence>
            </complexType>
```

```
                        </element>
                        <choice minOccurs="0" maxOccurs="unbounded">
                            <element ref="stn:M3UALinkSetTp"/>
                            <element ref="stn:M3UALinkTp"/>
                            <element ref="stn:M3UARouteSetNePart"/>
                            <element ref="stn:M3UARouteNePart"/>
                            <element ref="xn:VsDataContainer"/>
                        </choice>
                    </sequence>
                </extension>
            </complexContent>
        </complexType>
    </element>
    <element name="M3UALinkSetTp">
        <complexType>
            <complexContent>
                <extension base="xn:NrmClass">
                    <sequence>
                        <element name="attributes" minOccurs="0">
                            <complexType>
                                <all>
                                    <element name="adjPc" type="unsignedLong"/>
                                    <element name="trafficMode" type="stn:trafficModeType"/>
                                    <element name="userLabel" type="string"/>
                                </all>
                            </complexType>
                        </element>
                        <choice minOccurs="0" maxOccurs="unbounded">
                            <element ref="stn:M3UALinkTp"/>
                            <element ref="xn:VsDataContainer"/>
                        </choice>
                    </sequence>
                </extension>
            </complexContent>
        </complexType>
    </element>
    <element name="M3UALinkTp">
        <complexType>
            <complexContent>
                <extension base="xn:NrmClass">
                    <sequence>
                        <element name="attributes" minOccurs="0">
                            <complexType>
                                <all>
                                    <element name="m3UALinkTPState" type="stn:m3UALinkTPStateType"
/>
                                    <element name="sCTPAssocLocalAddr" type="stn:sCTPAssocAddrType"
/>
                                    <element name="sCTPAssocRemoteAddr" type="stn:sCTPAssocAddrType"
minOccurs="0"/>
                                    <element name="userLabel" type="string"/>
                                </all>
                            </complexType>
                        </element>
                        <choice minOccurs="0" maxOccurs="unbounded">
                            <element ref="xn:VsDataContainer"/>
                        </choice>
                    </sequence>
                </extension>
            </complexContent>
        </complexType>
    </element>
    <element name="M3UARouteSetNePart">
        <complexType>
            <complexContent>
                <extension base="xn:NrmClass">
                    <sequence>
                        <element name="attributes" minOccurs="0">
                            <complexType>
                                <all>
                                    <element name="destinationPc" type="unsignedLong"/>
                                    <element name="m3UARouteNePartm3UALinkSetTP" type="xn:dn"/>
                                    <element name="userLabel" type="string"/>
                                </all>
                            </complexType>
                        </element>
                        <choice minOccurs="0" maxOccurs="unbounded">
                            <element ref="stn:M3UARouteNePart"/>
```

```
                        <element ref="xn:VsDataContainer"/>
                    </choice>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
</element>
<element name="M3UARouteNePart">
    <complexType>
        <complexContent>
            <extension base="xn:NrmClass">
                <sequence>
                    <element name="attributes" minOccurs="0">
                        <complexType>
                            <all>
                                <element name="m3UALinkSetTPId" type="string"/>
                                <element name="fixedPriority" type="unsignedLong"/>
                                <element name="userLabel" type="string"/>
                            </all>
                        </complexType>
                    </element>
                    <choice minOccurs="0" maxOccurs="unbounded">
                        <element ref="xn:VsDataContainer"/>
                    </choice>
                </sequence>
            </extension>
        </complexContent>
    </complexType>
</element>
</schema>
```

Annex C (informative): Change history

Change history								
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Cat	Old	New
2014-06	SA#64	SP-140332	001	-	Upgrade W3C XML Schema version from 1.0 to 1.1	F	11.0.0	11.1.0
		SP-140358	002	-	remove the feature support statements	F		

History

Document history		
V11.0.0	April 2013	Publication
V11.1.0	July 2014	Publication