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Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP);
Solution Set (SS) definitions
(3GPP TS 28.659 version 14.0.0 Release 14)

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650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
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Contents

Foreword

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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 28.657 Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP); Requirements.

TS 28.658 Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS).

TS 28.659 Evolved Universal Terrestrial Radio Access Network (E-UTRAN) 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 E-UTRAN Network Resource Model (NRM) IRP, through which an `IRPAgent` can communicate configuration management information to one or several `IRPManagers` concerning E-UTRAN resources. The E-UTRAN 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 E-UTRAN NRM IRP.

This Solution Set specification is related to 3GPP TS 28.658 V13.1.X [4].

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 21.905: “Vocabulary for 3GPP Specifications”.

[2] 3GPP TS 32.153: “Telecommunication management; Integration Reference Point (IRP) technology specific templates, rules and guidelines”.

[3] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".

[4] 3GPP TS 28.658: "Telecommunications management; Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)".

[5] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".

[6] 3GPP TS 32.606: "Telecommunication management; Configuration Management (CM); Basic CM Integration Reference Point (IRP); Solution Set (SS) definitions".

[7] 3GPP TS 32.616: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP); Solution Set (SS) definitions".

[8] 3GPP TS 28.623: “Generic network resources Integration Reference Point (IRP); Solution Set (SS) definition”.

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

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

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

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

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1], TS 32.600 [3] 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 [8].

XML document: See definition of [8].

XML declaration: See definition of [8].

XML element: See definition of [8].

empty XML element: See definition of [8].

XML content (of an XML element): See definition of [8].

XML start-tag: See definition of [8].

XML end-tag: See definition of [8].

XML empty-element tag: See definition of [8].

XML attribute specification: See definition of [8].

DTD: See definition of [8].

XML schema: See definition of [8].

XML namespace: See definition of [8].

XML complex type: See definition of [8].

XML element type: See definition of [8].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1], TS 32.600 [3], and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

CM	Configuration Management
CORBA	Common Object Request Broker Architecture
DN	Distinguished Name
DTD	Document Type Definition
EDGE	Enhanced Data for GSM Evolution
GERAN	GSM/EDGE Radio Access Network
GSM	Global System for Mobile communication
IS	Information Service
IDL	Interface Definition Language (OMG)
IOC	Information Object Class
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
UMTS	Universal Mobile Telecommunications System

UTRAN	Universal Terrestrial Radio Access Network
XML	eXtensible Markup Language
XSD	XML Schema Definition

4 Solution Set Definitions

This specification defines the following 3GPP E-UTRAN NRM IRP Solution Set Definitions:

- 3GPP E-UTRAN NRM IRP CORBA SS (Annex A).
- 3GPP E-UTRAN NRM IRP XML Definitions (Annex B).

Annex A (normative): CORBA Solution Set

A.0 General

This annex contains the CORBA Solution Set for the IRP whose semantics is specified in E-UTRAN NRM IRP: Information Service (TS 28.658 [4]).

A.1 Architectural features

The overall architectural feature of E-UTRAN Network Resources IRP is specified in 3GPP TS 28.658 [4].
This clause specifies features that are specific to the CORBA SS.

A.1.1 Syntax for Distinguished Names

See clause A.1.1 of [8].

A.1.2 Rules for NRM extensions

See clause A.1.2 of [8].

A.1.2.1 Allowed extensions

See clause A.2.1 of [8].

A.1.2.2 Extensions not allowed

See clause A.2.1 of [8].

A.2 Mapping

A.2.1 General mapping

See clause A.2.1 of [8].

A.2.2 Information Object Class (IOC) mapping

A.2.2.1 IOC ENBFunction

Mapping from NRM IOC ENBFunction attributes and associations to SS equivalent MOC ENBFunction attributes

IS Attributes	SS Attributes	SS Type
eNBId	eNBId	unsignedLong
intraANRSwitch	intraANRSwitch	boolean
iRATANRSwitch	iRATANRSwitch	boolean
x2BlackList	x2BlackList	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReferenceSet
x2WhiteList	x2WhiteList	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReferenceSet
x2HOBlackList	x2HOBlackList	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReferenceSet
x2IpAddressList	x2IpAddressList	genericEUTRANNRMAttributeTypes::ipAddressListType
tceIDMappingInfoList	tceIDMappingInfoList	genericEUTRANNRMAttributeTypes::TceIDMappingInfoListType
sharNetTceMappingInfoList	sharNetTceMappingInfoList	genericEUTRANNRMAttributeTypes::SharNetTceMappingInfo
netListeningRSForRIBS	netListeningRSForRIBS	genericEUTRANNRMAttributeTypes::NetListeningRSForRIBS
NOTE: For all conditional qualifiers, see attribute constraints in 28.658 [4]		

A.2.2.2 IOC EUtranGenericCell

Mapping from NRM IOC EUtranGenericCell attributes and associations to SS equivalent MOC EUtranGenericCell attributes

IS Attributes	SS Attributes	SS Type
cellLocalId	cellLocalId	unsignedShort
cellSize	cellSize	genericEUTRANNRMAttributeTypes:: cellSizeEnumType
plmnIdList	plmnIdList Note: the first plmnId in the SS attribute plmnIdList is the primary PLMN id	genericEUTRANNRMAttributeTypes:: plmnIdListType
tac	tac	long
pci	pci	short
pciList	pciList	genericEUTRANNRMAttributeTypes:: pciListType
maximumTransmissionPower	maximumTransmissionPower	short
referenceSignalPower	referenceSignalPower	short
pb	pb	short
partOfSectorPower	partOfSectorPower	short
relatedTmaList	relatedTmaList	GenericNetworkResourcesIRPSystem:: AttributeTypes::MOReferenceSet
relatedAntennaList	relatedAntennaList	GenericNetworkResourcesIRPSystem:: AttributeTypes::MOReferenceSet
relatedSector	relatedSector	GenericNetworkResourcesIRPSystem:: AttributeTypes::MOReference
operationalState	operationalState	StateManagementIRPOptConstDefs:: OperationalStateTypeOpt
administrativeState	administrativeState	StateManagementIRPOptConstDefs:: AdministrativeStateTypeOpt
availabilityStatus	availabilityStatus	StateManagementIRPOptConstDefs:: AvailabilityStatusTypeOpt
cellResvInfo	cellResvInfo	genericEUTRANNRMAttributeTypes:: cellResvInfoType
nbIoTcellFlag	nbIoTcellFlag	genericEUTRANNRMAttributeTypes:: yesNoType
allowedAccessClasses	allowedAccessClasses	genericEUTRANNRMAttributeTypes:: allowedAccessEnumClassesType
isChangeForEnergySavingAllowed	isChangeForEnergySavingAllowed	GenericNetworkResourcesIRPSystem:: AttributeTypes::yesNoType
Note: For all conditional qualifiers, see attribute constraints in 28.658 [4]		

A.2.2.3 IOC ExternalEUtranGenericCell

Mapping from NRM IOC ExternalEUtranGenericCell attributes and associations to SS equivalent MOC ExternalEUtranGenericCell attributes

IS Attributes	SS Attributes	SS Type
pci	pci	short
plmnIdList	plmnIdList Note: the first plmnId in the SS attribute plmnIdList is the primary PLMN id	genericEUTRANNRMAttributeTypes:: plmnIdListType
cellLocalId	cellLocalId	unsignedShort
eNBId	eNBId	unsignedLong

A.2.2.4 IOC EUtranCellFDD

Mapping from NRM IOC EUtranCellFDD attributes and associations to SS equivalent MOC EUtranCellFDD attributes

IS Attributes	SS Attributes	SS Type
earfcnDl	earfcnDl	short
earfcnUl	earfcnUl	short

A.2.2.5 IOC ExternalEUtranCellFDD

Mapping from NRM IOC ExternalEUtranCellFDD attributes and associations to SS equivalent MOC ExternalEUtranCellFDD attributes

IS Attributes	SS Attributes	SS Type
earfcnDl	earfcnDl	short
earfcnUl	earfcnUl	short

A.2.2.6 IOC EUtranRelation

Mapping from NRM IOC EUtranRelation attributes and associations to SS equivalent MOC EUtranRelation attributes

IS Attributes	SS Attributes	SS Type
id	id	**string**
tCI	tCI	**long**
isRemoveAllowed	isRemoveAllowed	**boolean**
isHOAllowed	isHOAllowed	**boolean**
adjacentCell	adjacentCell	**GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference**
isICICInformationSendAllowed	isICICInformationSendAllowed	**boolean**
isLBAllowed	isLBAllowed	**boolean**
isESCoveredBy	isESCoveredBy	**genericEUTRANNRMAttributeTypes::IsEsCoveredByEnumType**
cellIndividualOffset	cellIndividualOffset	**genericEUTRANNRMAttributeTypes::qOffsetEnumType**
qOffset	qOffset	**genericEUTRANNRMAttributeTypes::qOffsetEnumType**
NOTE: For all conditional qualifiers, see attribute constraints in 28.658 [4]		

A.2.2.7 IOC Link_ENB_ENB

None.

A.2.2.8 IOC Cdma2000Relation

Mapping from NRM IOC Cdma2000Relation attributes and associations to SS equivalent MOC Cdma2000Relation attributes

IS Attributes	SS Attributes	SS Type
id	id	string
adjacentSector	adjacentSector	GenericNetworkResourcesIRPSystem:: AttributeTypes::MOReference

A.2.2.9 IOC ExternalENBFunction

Mapping from NRM IOC ExternalENBFunction attributes and associations to SS equivalent MOC ExternalENBFunction attributes

IS Attributes	SS Attributes	SS Type
eNBId	eNBId	unsignedLong

A.2.2.10 IOC EUtranCellTDD

Mapping from NRM IOC EUtranCellTDD attributes and associations to SS equivalent MOC EUtranCellTDD attributes

IS Attributes	SS Attributes	SS Type
earfcn	earfcn	short
sfAssignment	sfAssignment	short
specialSfPatterns	specialSfPatterns	short

A.2.2.11 IOC ExternalEUtranCellTDD

Mapping from NRM IOC ExternalEUtranCellTDD attributes and associations to SS equivalent MOC ExternalEUtranCellTDD attributes

IS Attributes	SS Attributes	SS Type
earfcn	earfcn	short

A.2.2.12 IOC MCEFunction

None.

A.2.2.13 IOC MBSFNArea

Mapping from NRM IOC MBSFNAreaattributes and associations to SS equivalent MOC MBSFNAreaattributes

IS Attributes	SS Attributes	SS Type
id	id	string
mbsfnAreaId	mbsfnAreaId	short
cellIdList	cellIdList	GenericNetworkResourcesIRPSystem:: AttributeTypes::MOReferenceSet

A.2.2.14 IOC RNFunction

Mapping from NRM IOC RNFunction attributes and associations to SS equivalent MOC RNFunction attributes

IS Attributes	SS Attributes	SS Type
servingCell	servingCell	GenericNetworkResourcesIRPSystem:: AttributeTypes::MOReference
candidateDeNBCells	candidateDeNBCells	genericEUTRANNRMAttributeTypes:: EcgiListType

Editor's note: the need of attribute candidateDeNBCells is for FFS.

A.2.2.15 IOC DeNBCapability

Mapping from NRM IOC DeNBCapabilityattributes and associations to SS equivalent MOC DeNBCapabilityattributes

IS Attributes	SS Attributes	SS Type
servedRN	servedRN	GenericNetworkResourcesIRPSystem:: AttributeTypes::MOReferenceSet
maxNbrRNAllowed	maxNbrRNAllowed	unsignedShort

A.2.2.16 IOC ExternalRNFunction

None.

A.2.2.17 IOC QciDscpMapping

Mapping from NRM IOC QciDscpMapping attributes and associations to SS equivalent MOC QciDscpMapping attributes

IS Attributes	SS Attributes	SS Type
qciDscpMappingList	qciDscpMappingList	genericEUTRANNRMAttributeTypes:: qciDscpMappingListType

A.2.2.18 IOC CellOutageCompensationInformation

Mapping from NRM IOC CellOutageCompensationInformation attributes and associations to SS equivalent MOC CellOutageCompensationInformation attributes

IS Attributes	SS Attributes	SS Type
id	id	string
cOCStatus	cellOutageCompensationStatus	GenericSONPolicyNRMAttributeTypes::cellOutageCompensationStatus
isCOCAllowed	isCOCAllowed	Boolean

A.2.2.19 IOC EUtranCellNMCentralizedSON

Mapping from NRM IOC EUtranCellNMCentralizedSON attributes and associations to SS equivalent MOC EUtranCellNMCentralizedSON attributes

IS Attributes	SS Attributes	SS Type
id	id	string
a1ThresholdRsrp	a1ThresholdRsrp	unsignedShort
a1ThresholdRsrq	a1ThresholdRsrq	unsignedShort
a2ThresholdRsrp	a2ThresholdRsrp	unsignedShort
a2ThresholdRsrq	a2ThresholdRsrq	unsignedShort
a3Offset	a3Offset	short
a4ThresholdRsrp	a4ThresholdRsrp	unsignedShort
a4ThresholdRsrq	a4ThresholdRsrq	unsignedShort
a5Threshold1Rsrp	a5Threshold1Rsrp	unsignedShort
a5Threshold1Rsrq	a5Threshold1Rsrq	unsignedShort
b1ThresholdUtraRscp	b1ThresholdUtraRscp	short
b1ThresholdUtraEcN0	b1ThresholdUtraEcN0	unsignedShort
b1ThresholdGeran	b1ThresholdGeran	unsignedShort
b1ThresholdCdma2000	b1ThresholdCdma2000	unsignedShort
b2Threshold1Rsrp	b2Threshold1Rsrp	unsignedShort
b2Threshold1Rsrq	b2Threshold1Rsrq	unsignedShort
b2Threshold2UtraRscp	b2Threshold2UtraRscp	short
b2Threshold2UtraEcN0	b2Threshold2UtraEcN0	unsignedShort
b2Threshold2Geran	b2Threshold2Geran	unsignedShort
b2Threshold2Cdma2000	b2Threshold2Cdma2000	unsignedShort
commonChannelPowerOffset	commonChannelPowerOffset	short
configurationIndex	configurationIndex	unsignedShort
contentionResolutionTimer	contentionResolutionTimer	genericEUTRANNRMAttributeTypes::contentionResolutionTimerEnumType
hysteresisEutraA1	hysteresisEutraA1	unsignedShort
hysteresisEutraA2	hysteresisEutraA2	unsignedShort
hysteresisEutraA3	hysteresisEutraA3	unsignedShort
hysteresisEutraA4	hysteresisEutraA4	unsignedShort
hysteresisEutraA5	hysteresisEutraA5	unsignedShort
hysteresisIratB1	hysteresisIratB1	unsignedShort
hysteresisIratB2	hysteresisIratB2	unsignedShort
numberOfRaPreambles	numberOfRaPreambles	genericEUTRANNRMAttributeTypes::numberOfRaPreamblesEnumType
preambleInitialReceivedTargetPower	preambleInitialReceivedTargetPower	genericEUTRANNRMAttributeTypes::preambleInitialReceivedTargetPowerEnumType
preambleTransMax	preambleTransMax	genericEUTRANNRMAttributeTypes::preambleTransMaxEnumType

IS Attributes	SS Attributes	SS Type
pMax	pMax	short
powerRampingStep	powerRampingStep	genericEUTRANNRMAttributeTypes::powerRampingStepEnumType
qHyst	qHyst	genericEUTRANNRMAttributeTypes::qHystEnumType
qOffsetUtra	qOffsetUtra	unsignedShort
qOffsetGeran	qOffsetGeran	unsignedShort
qOffsetCdma2000	qOffsetCdma2000	unsignedShort
qQualMinUtra	qQualMinUtra	unsignedShort
qRxLevMinEUtraSib1	qRxLevMinEUtraSib1	short
qRxLevMinEUtraSib3	qRxLevMinEUtraSib3	short
qRxLevMinGeran	qRxLevMinGeran	unsignedShort
qRxLevMinUtra	qRxLevMinUtra	short
responseWindowSize	responseWindowSize	genericEUTRANNRMAttributeTypes::responseWindowSizeEnumType
rootSequenceIndex	rootSequenceIndex	unsignedShort
sIntraSearch	sIntraSearch	unsignedShort
sizeOfRAPreamblesGroupA	sizeOfRAPreamblesGroupA	genericEUTRANNRMAttributeTypes::sizeOfRAPreambleGroupAEnumType
timeToTriggerEutraA1	timeToTriggerEutraA1	genericEUTRANNRMAttributeTypes::timeToTriggerEUtraEnumType
timeToTriggerEutraA2	timeToTriggerEutraA2	genericEUTRANNRMAttributeTypes::timeToTriggerEUtraEnumType
timeToTriggerEutraA3	timeToTriggerEutraA3	genericEUTRANNRMAttributeTypes::timeToTriggerEUtraEnumType
timeToTriggerEutraA4	timeToTriggerEutraA4	genericEUTRANNRMAttributeTypes::timeToTriggerEUtraEnumType
timeToTriggerEutraA5	timeToTriggerEutraA5	genericEUTRANNRMAttributeTypes::timeToTriggerEUtraEnumType
timeToTriggerIratB1	timeToTriggerIratB1	genericEUTRANNRMAttributeTypes::timeToTriggerEUtraEnumType

IS Attributes	SS Attributes	SS Type
timeToTriggerIratB2	timeToTriggerIratB2	genericEUTRANNRMAttribute Types:: timeToTriggerEUtraEnumType
tReselectionCdma2000	tReselectionCdma2000	unsignedShort
tReselectionEUtra	tReselectionEUtra	unsignedShort
tReselectionGeran	tReselectionGeran	unsignedShort
tReselectionUtra	tReselectionUtra	unsignedShort
tStoreUeContext	tStoreUeContext	unsignedShort
Note: For all conditional qualifiers, see attribute constraints in 28.658 [4]		

A.3 Solution Set definitions

A.3.1 IDL definition structure

Clause A.3.2 defines the MO classes for the E-UTRAN NRM IRP.

A.3.2 IDL specification "EUtranNetworkResourcesNRMDefs.idl"

```
//File:EUtranNetworkResourcesNRMDefs.idl
#ifndef _EUTRANNETWORKRESOURCESNRMDEFS_IDL_
#define _EUTRANNETWORKRESOURCESNRMDEFS_IDL_
#include "GenericNetworkResourcesNRMDefs.idl"
#include "EPCResourcesNRMDefs.idl"
#pragma prefix "3gppsa5.org"
/**
 * This module defines constants for each MO class name and
 * the attribute names for each defined MO class.
 */
module EUtranNetworkResourcesNRMDefs
{
    /*
     * Definitions for MO class ENBFunction
     */
    interface ENBFunction: GenericNetworkResourcesNRMDefs::ManagedFunction
    {
        const string CLASS = "ENBFunction";
        // Attribute Names
        //
        const string intraANRSwitch= "intraANRSwitch";
        const string iRATANRSwitch= "iRATANRSwitch";
        const string eNBId = "eNBId";
        const string x2BlackList= "x2BlackList";
        const string x2WhiteList= "x2WhiteList";
        const string x2HOBlackList= "x2HOBlackList";
        const string x2IpAddressList= "x2IpAddressList";
        const string tceIDMappingInfoList= "tceIDMappingInfoList";
        const string sharNetTceMappingInfoList= "sharNetTceMappingInfoList";
        const string netListeningRSForRIBS= "netListeningRSForRIBS";
    };
    /*
     * Definitions for MO class RNFunction
     */
    interface RNFunction: ENBFunction
    {
        const string CLASS = "RNFunction";
        // Attribute Names
        //
        const string servingCell = "servingCell";
        const string candidateDeNBCells = "candidateDeNBCells";
    };

    /*
     * Definitions for MO class DeNBCapability
     */
    interface DeNBCapability: GenericNetworkResourcesNRMDefs::ManagedFunction
    {
        const string CLASS = "DeNBCapability";
        // Attribute Names
        //
        const string servedRN= "servedRN";
        const string maxNbrRNAllowed= "maxNbrRNAllowed";
    };
    /*
     * Definitions for MO class ExternalRNFunction
     */
    interface ExternalRNFunction: ExternalENBFunction
    {
        const string CLASS = "ExternalRNFunction";
        // Attribute Names
        //
    };
```

```
    /*

    /*
     * Definitions for MO class EUtranGenericCell
     */
    interface EUtranGenericCell: GenericNetworkResourcesNRMDefs::ManagedFunction
    {
        const string CLASS = "EUtranGenericCell";
        // Attribute Names
        //
        const string cellLocalId = "cellLocalId";
        const string cellSize = "cellSize";
        const string plmnIdList = "plmnIdList";
        const string tac = "tac";
        const string pci = "pci";
        const string pciList = "pciList";
        const string operationalState = "operationalState";
        const string administrativeState = "administrativeState";
        const string availabilityStatus = "availabilityStatus";
        const string maximumTransmissionPower = "maximumTransmissionPower";
        const string referenceSignalPower = "referenceSignalPower";
        const string pb = "pb";
        const string partOfSectorPower = "partOfSectorPower";
        const string relatedTmaList = "relatedTmaList";
        const string relatedAntennaList = "relatedAntennaList";
        const string relatedSector = "relatedSector";
        const string allowedAccessClasses = "allowedAccessClasses";
        const string isChangeForEnergySavingAllowed = "isChangeForEnergySavingAllowed";
        const string cellResvInfo = "cellResvInfo";
        const string nbIoTcellFlag = "nbIoTcellFlag";
    };


    /*
     * Definitions for MO class ExternalEUtranGenericCell
     */
    interface ExternalEUtranGenericCell: GenericNetworkResourcesNRMDefs::ManagedFunction
    {
        const string CLASS = "ExternalEUtranGenericCell";
        // Attribute Names
        //
        const string pci= "pci";
        const string plmnIdList = "plmnIdList";
        const string cellLocalId = "cellLocalId";
        const string eNBId = "eNBId";
    };

    /*
     * Definitions for MO class EUtranCellFDD
     */
    interface EUtranCellFDD: EUtranGenericCell
    {
        const string CLASS = "EUtranCellFDD";
        // Attribute Names
        //
        const string earfcnDl = "earfcnDl";
        const string earfcnUl = "earfcnUl";
    };


    /*
     * Definitions for MO class ExternalEUtranCellFDD
     */
    interface ExternalEUtranCellFDD: ExternalEUtranGenericCell
    {
        const string CLASS = "ExternalEUtranCellFDD";
        // Attribute Names
        //
        const string earfcnDl = "earfcnDl";
        const string earfcnUl = "earfcnUl";
    };

/*
     * Definitions for MO class EUtranCellTDD
     */
    interface EUtranCellTDD: EUtranGenericCell
    {
```

```
        const string CLASS = "EUtranCellTDD";
        // Attribute Names
        //
        const string earfcn = "earfcn";
        const string sfAssignment = "sfAssignment";
        const string specialSfPatterns = "specialSfPatterns";

    };
/*
     * Definitions for MO class ExternalEUtranCellTDD
     */
    interface ExternalEUtranCellTDD: ExternalEUtranGenericCell
    {
        const string CLASS = "ExternalEUtranCellTDD";
        // Attribute Names
        //
        const string earfcn = "earfcn";

    };

    /*
     * Definitions for MO class EUtranRelation
     */
    interface EUtranRelation: GenericNetworkResourcesNRMDefs::Top
    {
        const string CLASS = "EUtranRelation";
        // Attribute Names
        //
        const string id = "id";
        const string tCI = "tCI";
        const string isRemoveAllowed = "isRemoveAllowed";
        const string isHOAllowed = "isHOAllowed";
        const string adjacentCell = "adjacentCell";
        const string isICICInformationSendAllowed = "isICICInformationSendAllowed";
        const string isLBAllowed = "isLBAllowed";
        const string cellIndividualOffset = "cellIndividualOffset";
        const string qOffset = "qOffset";
    };

/*
     * Definitions for MO class Link_ENB_ENB
     */
    interface Link_ENB_ENB: GenericNetworkResourcesNRMDefs::Link
    {
        const string CLASS = "Link_ENB_ENB";
        // Attribute Names
        //

    };

/*
     * Definitions for MO class Cdma2000Relation
     */
    interface Cdma2000Relation:GenericNetworkResourcesNRMDefs::Top
    {
        const string CLASS = "Cdma2000Relation";
        // Attribute Names
        //
        const string id = "id";
        const string adjacentSector = "adjacentSector";

    };

/*
     * Definitions for MO class ExternalENBFunction
     */
    interface ExternalENBFunction: GenericNetworkResourcesNRMDefs::ManagedFunction
    {
        const string CLASS = "ExternalENBFunction";
        // Attribute Names
        //
        const string eNBId = "eNBId";

    };


/*
     * Definitions for MO class MCEFunction
```

```
     */
    interface MCEFunction: GenericNetworkResourcesNRMDefs::ManagedFunction
    {
        const string CLASS = "MCEFunction";
        // Attribute Names
        //

    };

/*
     * Definitions for MO class Link_MCE_ENB
     */
    interface Link_MCE_ENB: GenericNetworkResourcesNRMDefs::Link
    {
        const string CLASS = "Link_MCE_ENB";
        // Attribute Names
        //

    };
/*
     * Definitions for MO class Link_MCE_MME
     */
    interface Link_MCE_MME: GenericNetworkResourcesNRMDefs::Link
    {
        const string CLASS = "Link_MCE_MME";
        // Attribute Names
        //

    };

/*
     * Definitions for MO class MBSFNArea
     */

    interface MBSFNArea: GenericNetworkResourcesNRMDefs::Top
    {
        const string CLASS = "MBSFNArea";
        // Attribute Names
        //
        const string id = "id";
        const string mbsfnAreaId= "mbsfnAreaId";
        const string cellIdList= "cellIdList";

    };

/*
     * Definitions for MO class EnergySavingProperties
     */

    interface EnergySavingProperties: GenericNetworkResourcesNRMDefs::Top
    {
        const string CLASS = "EnergySavingProperties";
        // Attribute Names
        //
        const string id = "id";
        const string energySavingState= "energySavingState";
        const string energySavingControl= "energySavingControl";

    };


    /*
     * Definitions for MO class CellOutageCompensationInformation
     */
    interface CellOutageCompensationInformation: GenericNetworkResourcesNRMDefs::Top
    {
        const string CLASS = "CellOutageCompensationInformation";
        // Attribute Names
        //
        const string id = "id";
        const string cellOutageCompensationStatus = "cellOutageCompensationStatus";
        const string isCOCAllowed =
              "isCOCAllowed";
    };

    /*
     * Definitions for MO class EUtranCellNMCentralizedSON
     */
```

```
    interface EUtranCellNMCentralizedSON: GenericNetworkResourcesNRMDefs::Top
    {
        const string CLASS = "EUtranCellNMCentralizedSON";
        // Attribute Names
        //
  const string id = "id";
      const string a1ThresholdRsrp = "a1ThresholdRsrp";
        const string a1ThresholdRsrq = "a1ThresholdRsrq";
        const string a2ThresholdRsrp = "a2ThresholdRsrp";
        const string a2ThresholdRsrq = "a2ThresholdRsrq";
        const string a3Offset = "a3Offset";
        const string a4ThresholdRsrp = "a4ThresholdRsrp";
        const string a4ThresholdRsrq = "a4ThresholdRsrq";
        const string a5Threshold1Rsrp = "a5Threshold1Rsrp";
        const string a5Threshold1Rsrq = "a5Threshold1Rsrq";
        const string b1ThresholdUtraRscp = "b1ThresholdUtraRscp";
        const string b1ThresholdUtraEcN0 = "b1ThresholdUtraEcN0";
        const string b1ThresholdGeran = "b1ThresholdGeran";
        const string b1ThresholdCdma2000 = "b1ThresholdCdma2000";
        const string b2Threshold1Rsrp = "b2Threshold1Rsrp";
        const string b2Threshold1Rsrq = "b2Threshold1Rsrq";
        const string b2Threshold2UtraRscp = "b2Threshold2UtraRscp";
        const string b2Threshold2UtraEcN0 = "b2Threshold2UtraEcN0";
        const string b2Threshold2Geran = "b2Threshold2Geran";
        const string b2Threshold2Cdma2000 = "b2Threshold2Cdma2000";
        const string commonChannelPowerOffset = "commonChannelPowerOffset";
        const string configurationIndex = "configurationIndex";
        const string contentionResolutionTimer = "contentionResolutionTimer";
        const string hysteresisEutraA1 = "hysteresisEutraA1";
        const string hysteresisEutraA2 = "hysteresisEutraA2";
        const string hysteresisEutraA3 = "hysteresisEutraA3";
        const string hysteresisEutraA4 = "hysteresisEutraA4";
        const string hysteresisEutraA5 = "hysteresisEutraA5";
        const string hysteresisIratB1 = "hysteresisIratB1";
        const string hysteresisIratB2 = "hysteresisIratB2";
        const string numberOfRaPreambles = "numberOfRaPreambles";
        const string preambleInitialReceivedTargetPower = "preambleInitialReceivedTargetPower";
        const string preambleTransMax = "preambleTransMax";
        const string pMax = "pMax";
        const string powerRampingStep = "powerRampingStep";
        const string qHyst = "qHyst";
        const string qOffsetUtra = "qOffsetUtra";
        const string qOffsetGeran = " qOffsetGeran";
        const string qOffsetCdma2000 = "qOffsetCdma2000";
        const string qQualMinUtra = "qQualMinUtra";
        const string qRxLevMinEUtraSib1 = "qRxLevMinEUtraSib1";
        const string qRxLevMinEUtraSib3 = "qRxLevMinEUtraSib3";
        const string qRxLevMinGeran = "qRxLevMinGeran";
        const string qRxLevMinUtra = "qRxLevMinUtra";
        const string responseWindowSize = "responseWindowSize";
        const string rootSequenceIndex = "rootSequenceIndex";
        const string sIntraSearch = "sIntraSearch";
        const string sizeOfRAPreamblesGroupA = "sizeOfRAPreamblesGroupA";
        const string timeToTriggerEutraA1 = "timeToTriggerEutraA1";
        const string timeToTriggerEutraA2 = "timeToTriggerEutraA2";
        const string timeToTriggerEutraA3 = "timeToTriggerEutraA3";
        const string timeToTriggerEutraA4 = "timeToTriggerEutraA4";
        const string timeToTriggerEutraA5 = "timeToTriggerEutraA5";
        const string timeToTriggerIratB1 = "timeToTriggerIratB1";
        const string timeToTriggerIratB2 = "timeToTriggerIratB2";
        const string tReselectionCdma2000 = "tReselectionCdma2000";
        const string tReselectionEUtra = "tReselectionEUtra";
        const string tReselectionGeran = "tReselectionGeran";
        const string tReselectionUtra = "tReselectionUtra";
        const string tStoreUeContext = "tStoreUeContext";
};

module genericEUTRANNRMAttributeTypes
{

    enum CellSizeEnumType
    {
        verysmall,
        small,
        medium,
        large
    };
```

```
    enum AllowedAccessClassesValues
    {
    EmergencyCall,
    ForPLMNUse,
    SecurityServices,
    PublicUtilities,
    EmergencyServices,
    PLMNStaff
    };
typedef sequence < AllowedAccessClassesValues,6> AllowedAccessClasses


    struct PlmnIdType
    {
        short mcc;
        short mnc;
    };
    const short PLMNID_LIST_LENGTH = 6;
    typedef sequence<PlmnIdType > plmnIdListType;

    const short NO_OF_PCIS = 504;
    typedef sequence<short,NO_OF_PCIS> pciListType;

    typedef sequence<string> ipAddressListType;

    enum CellResvInfoType
    {
        reservedCell,
        nonReservedCell
    };

    struct QciDscpMappingType
    {
        short qci;
        short dscp;
    };

    typedef sequence<QciDscpMappingType> QciDscpMappingListType;

    struct EcgiType
    {
        short mcc;
        short mnc;
        unsignedlong eci
    };
    typedef sequence <EcgiType> EcgiListType;

  enum isEsCoveredByEnumType
    {
    no,
    partial,
    yes
  };

  enum yesNoType
    {
    no,
    yes
  };

    struct TceIDMappingInfo
    {
        short tceID;
        string tceIPAddr;
    };
    typedef sequence<TceIDMappingInfo> TceIDMappingInfoListType;

    struct SharNetTceMappingInfo
    {
        long PLMNId;
        short tceID;
        string tceIPAddr;
    };
    typedef sequence<SharNetTceMappingInfo> SharNetTceMappingInfoListType;

enum CellOutageCompensationState
{
   cOCActivating,
```

```
   cOCActive,
   cOCDeactivating,
   cOCDeactive
};


enum qOffsetEnumType
{
   dB-24,
   dB-22,
   dB-20,
   dB-18,
   dB-16,
   dB-14,
   dB-12,
   dB-10,
   dB-8,
   dB-6,
   dB-5,
   dB-4,
   dB-3,
   dB-2,
   dB-1,
   dB0,
   dB1,
   dB2,
   dB3,
   dB4,
   dB5,
   dB6,
   dB8,
   dB10,
   dB12,
   dB14,
   dB16,
   dB18,
   dB20,
   dB22,
   dB24
};

enum contentionResolutionTimerEnumType
{
   sf8,
   sf16,
   sf24,
   sf32,
   sf40,
   sf48,
   sf56,
   sf64
};

enum numberOfRaPreamblesEnumType
{
   n4,
   n8,
   n12,
   n16,
   n20,
   n24,
   n28,
   n32,
   n36,
   n40,
   n44,
   n48,
   n52,
   n56,
   n60,
   n64
};

enum preambleInitialReceivedTargetPowerEnumType
{
   dBm-120,
   dBm-118,
   dBm-116,
```

```
   dBm-114,
   dBm-112,
   dBm-110,
   dBm-108,
   dBm-106,
   dBm-104,
   dBm-102,
   dBm-100,
   dBm-98,
   dBm-96,
   dBm-94,
   dBm-92,
   dBm-90
};

enum preambleTransMaxEnumType
{
   n3,
   n4,
   n5,
   n6,
   n7,
   n8,
   n10,
   n20,
   n50,
   n100,
   n200
};

enum powerRampingStepEnumType
{
   dB0,
   dB2,
   dB4,
   dB6
};

enum qHystEnumType
{
   dB0,
   dB1,
   dB2,
   dB3,
   dB4,
   dB5,
   dB6,
   dB8,
   dB10,
   dB12,
   dB14,
   dB16,
   dB18,
   dB20,
   dB22,
   dB24
};

enum responseWindowSizeEnumType
{
   sf2,
   sf3,
   sf4,
   sf5,
   sf6,
   sf7,
   sf8,
   sf10
};

enum sizeOfRAPreambleGroupAEnumType
{
   n4,
   n8,
   n12,
   n16,
   n20,
   n24,
```

```
   n28,
   n32,
   n36,
   n40,
   n44,
   n48,
   n52,
   n56,
   n60,
};

enum timeToTriggerEUtraEnumType
{
   ms0,
   ms40,
   ms64,
   ms80,
   ms100,
   ms128,
   ms160,
   ms256,
   ms320,
   ms480,
   ms512,
   ms640,
   ms1024,
   ms1280,
   ms2560,
   ms5120
};

   typedef sequence<string> DnList;

struct CellOutageCompensationStatus
   {
   CellOutageCompensationState cellOutageCompensationState;
   DnList errorList;
   };

    struct ReferenceSignalPattern
    {
        yesNoType prs_supported;
    };

    enum ReferenceSignalPeriodicity
    {
        ms1280,
        ms2560,
        ms5120,
        ms10240
    };

    const short MAX_CONFIGURATION_NO = 4;
    struct NetListeningRefSignalType
    {
        ReferenceSignalPattern referenceSignalPattern;
        short num_of_crs_ports;
        ReferenceSignalPeriodicity referenceSignalPeriodicity;
        unsigned short referenceSignalOffset;
    };
    typedef sequence<NetListeningRefSignalType, MAX_CONFIGURATION_NO> NetListeningRSForRIBS;

};

#endif // _EUTRANNETWORKRESOURCESNRMDEFS_IDL_
```

Annex B (normative): XML Definitions

B.0 General

This annex contains the XML Definitions for the E-UTRAN NRM IRP as it applies to Itf-N, in accordance with UTRAN NRM IRP IS definitions [4].

The XML file formats are based on XML [9], XML Schema [10] [11] and XML Namespace [12] standards.

B.1 Architectural features

The overall architectural feature of E-UTRAN Network Resources IRP is specified in 3GPP TS 28.658 [4].
This clause specifies features that are specific to the Schema definitions.

The XML definitions of this document specify the schema for a configuration content.

When using the XML definitions for a configuration file transfer with the Bulk CM IRP, using either CORBA Solution Set of 3GPP TS 32.616 [7] or SOAP Solution Set of 3GPP TS 32.616 [7], the basic part of the XML file format definition is provided by 3GPP TS 32.616 [7]. The XML definitions of this document provide the schema for the configuration content to be included in such a configuration file.

When using the XML definitions with a SOAP Solution Set of any Interface IRP that perform operations on managed objects, for example the Basic CM IRP SOAP SS of 3GPP TS 32.606 [6], the XML definitions of this document provides the schema for the configuration content operated on by the interface IRP. Such configuration content can be name of managed object and, if applicable, IOC attributes.

B.1.1 Syntax for Distinguished Names

The syntax of a Distinguished Name is defined in 3GPP TS 32.300 [5].

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 [7].

Annex B.3.3 of the present document defines the NRM-specific XML schema `eutranNrm.xsd` for the E-UTRAN Network Resources IRP NRM defined in 3GPP TS 28.658 [4].

XML schema `eutranNrm.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 [7].

B.3.2 Graphical Representation

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

B.3.3 XML schema "eutranNrm.xsd"

```
<?xml version="1.1" encoding="UTF-8"?>
<!--
  3GPP TS 28.659 E-UTRAN Network Resource Model IRP
  XML schema definition
  eutranNrm.xsd
-->
<schema xmlns="http://www.w3.org/2001/XMLSchema"
xmlns:xn="http://www.3gpp.org/ftp/specs/archive/28_series/28.623#genericNrm"
xmlns:en="http://www.3gpp.org/ftp/specs/archive/28_series/28.659#eutranNrm"
xmlns:epc="http://www.3gpp.org/ftp/specs/archive/28_series/28.709#epcNrm"
xmlns:un="http://www.3gpp.org/ftp/specs/archive/28_series/28.653#utranNrm"
xmlns:gn="http://www.3gpp.org/ftp/specs/archive/28_series/28.656#geranNrm"
xmlns:sm="http://www.3gpp.org/ftp/specs/archive/28_series/28.626#stateManagementIRP"
xmlns:sp="http://www.3gpp.org/ftp/specs/archive/28_series/28.629#sonPolicyNrm"
targetNamespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.659#eutranNrm"
elementFormDefault="qualified">
  <import namespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.623#genericNrm"/>
  <import namespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.709#epcNrm"/>
  <import namespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.653#utranNrm"/>
  <import namespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.656#geranNrm"/>
  <import namespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.626#stateManagementIRP"/>
  <import namespace="http://www.3gpp.org/ftp/specs/archive/28_series/28.629#sonPolicyNrm"/>
  <complexType name="IpAddressList">
    <sequence>
      <element name="ipAddress" type="string" minOccurs="0" maxOccurs="unbounded"/>
    </sequence>
  </complexType>
  <simpleType name="EnbId">
    <restriction base="unsignedLong">
      <maxInclusive value="268435455"/>
    </restriction>
  </simpleType>
  <simpleType name="Eci">
    <restriction base="unsignedLong">
      <maxInclusive value="268435455"/>
    </restriction>
  </simpleType>
<simpleType name="CellLocalId">
    <restriction base="unsignedShort">
      <maxInclusive value="255"/>
    </restriction>
  </simpleType>
  <simpleType name="cellSize">
    <restriction base="string">
      <enumeration value="verysmall"/>
      <enumeration value="small"/>
      <enumeration value="medium"/>
      <enumeration value="large"/>
    </restriction>
  </simpleType>
  <simpleType name="allowedAccessClassesElementType">
    <restriction base="string">
      <enumeration value="EmergencyCall"/>
      <enumeration value="ForPLMNUse"/>
      <enumeration value="SecurityServices"/>
      <enumeration value="PublicUtilities"/>
      <enumeration value="EmergencyServices"/>
      <enumeration value="PLMNStaff"/>
    </restriction>
</simpleType>
  <complexType name="allowedAccessClassesType">
    <sequence minOccurs="0" maxOccurs="6">
      <element name="allowedAccessClassesElement" type="en:allowedAccessClassesElementType"/>
    </sequence>
  </complexType>
  <complexType name="PLMNId">
    <sequence>
      <element name="mcc" type="short"/>
      <element name="mnc" type="short"/>
    </sequence>
  </complexType>
  <complexType name="PLMNIdList">
    <sequence>
      <element name="pLMNId" type="en:PLMNId" maxOccurs="6"/>
      <!-- The first pLMNId of the pLMNIdList is primary PLMN id -->
```

```
    </sequence>
  </complexType>
  <complexType name="EcgiList">
    <sequence>
      <element name="plmnId" type="en:PLMNId" minOccurs="0"/>
      <element name="eci" type="en:Eci" minOccurs="0"/>
    </sequence>
  </complexType>
  <simpleType name="Pci">
    <restriction base="unsignedShort">
      <maxInclusive value="503"/>
      <!-- Minimum value is 0, maximum value is 3x167+2=503 -->
    </restriction>
  </simpleType>
  <complexType name="PciList">
    <sequence>
      <element name="pci" type="en:Pci" maxOccurs="504"/>
    </sequence>
  </complexType>
  <simpleType name="cellResvInfoType">
    <restriction base="string">
      <enumeration value="reservedCell"/>
      <enumeration value="nonReservedCell"/>
    </restriction>
  </simpleType>
  <simpleType name="mbsfnAreaIdType">
     <restriction base="unsignedLong">
    <maxInclusive value="255"/>
     </restriction>
   </simpleType>
  <complexType name="QciDscpMappingType">
    <sequence>
      <element name="qci" type="short"/>
      <element name="dscp" type="short"/>
    </sequence>
  </complexType>
  <complexType name="QciDscpMappingListType">
    <sequence>
      <element name="QciDscpMappingPair" type="en:QciDscpMappingType"/>
    </sequence>
  </complexType>
  <simpleType name="isEsCoveredByEnumType">
    <restriction base="string">
      <enumeration value="no"/>
      <enumeration value="partial"/>
      <enumeration value="yes"/>
    </restriction>
  </simpleType>
  <simpleType name="yesNoType">
    <restriction base="string">
      <enumeration value="yes"/>
      <enumeration value="no"/>
    </restriction>
  </simpleType>
  <simpleType name="QOffsetEnumType">
    <restriction base="string">
      <enumeration value="dB-24"/>
      <enumeration value="dB-22"/>
      <enumeration value="dB-20"/>
      <enumeration value="dB-18"/>
      <enumeration value="dB-16"/>
      <enumeration value="dB-14"/>
      <enumeration value="dB-12"/>
      <enumeration value="dB-10"/>
      <enumeration value="dB-8"/>
      <enumeration value="dB-6"/>
      <enumeration value="dB-5"/>
      <enumeration value="dB-4"/>
      <enumeration value="dB-3"/>
      <enumeration value="dB-2"/>
      <enumeration value="dB-1"/>
      <enumeration value="dB0"/>
      <enumeration value="dB1"/>
      <enumeration value="dB2"/>
      <enumeration value="dB3"/>
      <enumeration value="dB4"/>
      <enumeration value="dB5"/>
      <enumeration value="dB6"/>
```

```
      <enumeration value="dB8"/>
      <enumeration value="dB10"/>
      <enumeration value="dB12"/>
      <enumeration value="dB14"/>
      <enumeration value="dB16"/>
      <enumeration value="dB18"/>
      <enumeration value="dB20"/>
      <enumeration value="dB22"/>
      <enumeration value="dB24"/>
    </restriction>
  </simpleType>
  <simpleType name="ContentionResolutionTimerEnumType">
    <restriction base="string">
      <enumeration value="sf8"/>
      <enumeration value="sf16"/>
      <enumeration value="sf24"/>
      <enumeration value="sf32"/>
      <enumeration value="sf40"/>
      <enumeration value="sf48"/>
      <enumeration value="sf56"/>
      <enumeration value="sf64"/>
    </restriction>
  </simpleType>
  <simpleType name="NumberOfRaPreamblesEnumType">
    <restriction base="string">
      <enumeration value="n4"/>
      <enumeration value="n8"/>
      <enumeration value="n12"/>
      <enumeration value="n16"/>
      <enumeration value="n20"/>
      <enumeration value="n24"/>
      <enumeration value="n28"/>
      <enumeration value="n32"/>
      <enumeration value="n36"/>
      <enumeration value="n40"/>
      <enumeration value="n44"/>
      <enumeration value="n48"/>
      <enumeration value="n52"/>
      <enumeration value="n56"/>
      <enumeration value="n60"/>
      <enumeration value="n64"/>
    </restriction>
  </simpleType>
  <simpleType name="PreambleInitialReceivedTargetPowerEnumType">
    <restriction base="string">
      <enumeration value="dBm-120"/>
      <enumeration value="dBm-118"/>
      <enumeration value="dBm-116"/>
      <enumeration value="dBm-114"/>
      <enumeration value="dBm-112"/>
      <enumeration value="dBm-110"/>
      <enumeration value="dBm-108"/>
      <enumeration value="dBm-106"/>
      <enumeration value="dBm-104"/>
      <enumeration value="dBm-102"/>
      <enumeration value="dBm-100"/>
      <enumeration value="dBm-98"/>
      <enumeration value="dBm-96"/>
      <enumeration value="dBm-94"/>
      <enumeration value="dBm-92"/>
      <enumeration value="dBm-90"/>
    </restriction>
  </simpleType>
  <simpleType name="PreambleTransMaxEnumType">
    <restriction base="string">
      <enumeration value="n3"/>
      <enumeration value="n4"/>
      <enumeration value="n5"/>
      <enumeration value="n6"/>
      <enumeration value="n7"/>
      <enumeration value="n8"/>
      <enumeration value="n10"/>
      <enumeration value="n20"/>
      <enumeration value="n50"/>
      <enumeration value="n100"/>
      <enumeration value="n200"/>
    </restriction>
  </simpleType>
```

```
  <simpleType name="PowerRampingStepEnumType">
    <restriction base="string">
      <enumeration value="dB0"/>
      <enumeration value="dB2"/>
      <enumeration value="dB4"/>
      <enumeration value="dB6"/>
    </restriction>
  </simpleType>
  <simpleType name="QHystEnumType">
    <restriction base="string">
      <enumeration value="dB0"/>
      <enumeration value="dB1"/>
      <enumeration value="dB2"/>
      <enumeration value="dB3"/>
      <enumeration value="dB4"/>
      <enumeration value="dB5"/>
      <enumeration value="dB6"/>
      <enumeration value="dB8"/>
      <enumeration value="dB10"/>
      <enumeration value="dB12"/>
      <enumeration value="dB14"/>
      <enumeration value="dB16"/>
      <enumeration value="dB18"/>
      <enumeration value="dB20"/>
      <enumeration value="dB22"/>
      <enumeration value="dB24"/>
    </restriction>
  </simpleType>
  <simpleType name="ResponseWindowSizeEnumType">
    <restriction base="string">
      <enumeration value="sf2"/>
      <enumeration value="sf3"/>
      <enumeration value="sf4"/>
      <enumeration value="sf5"/>
      <enumeration value="sf6"/>
      <enumeration value="sf7"/>
      <enumeration value="sf8"/>
      <enumeration value="sf10"/>
    </restriction>
  </simpleType>
  <simpleType name="SizeOfRAPreambleGroupAEnumType">
    <restriction base="string">
      <enumeration value="n4"/>
      <enumeration value="n8"/>
      <enumeration value="n12"/>
      <enumeration value="n16"/>
      <enumeration value="n20"/>
      <enumeration value="n24"/>
      <enumeration value="n28"/>
      <enumeration value="n32"/>
      <enumeration value="n36"/>
      <enumeration value="n40"/>
      <enumeration value="n44"/>
      <enumeration value="n48"/>
      <enumeration value="n52"/>
      <enumeration value="n56"/>
      <enumeration value="n60"/>
    </restriction>
  </simpleType>
  <simpleType name="TimeToTriggerEUtraEnumType">
    <restriction base="string">
      <enumeration value="ms0"/>
      <enumeration value="ms40"/>
      <enumeration value="ms64"/>
      <enumeration value="ms80"/>
      <enumeration value="ms100"/>
      <enumeration value="ms128"/>
      <enumeration value="ms160"/>
      <enumeration value="ms256"/>
      <enumeration value="ms320"/>
      <enumeration value="ms480"/>
      <enumeration value="ms512"/>
      <enumeration value="ms640"/>
      <enumeration value="ms1024"/>
      <enumeration value="ms1280"/>
      <enumeration value="ms2560"/>
      <enumeration value="ms5120"/>
    </restriction>
```

```
  </simpleType>
  <simpleType name="ThresholdRsrpRangeType">
    <restriction base="unsignedShort">
      <minInclusive value="0"/>
      <maxInclusive value="97"/>
    </restriction>
  </simpleType>
  <simpleType name="ThresholdRsrqRangeType">
    <restriction base="unsignedShort">
      <minInclusive value="0"/>
      <maxInclusive value="34"/>
    </restriction>
  </simpleType>
  <simpleType name="OffsetRangeType">
    <restriction base="short">
      <minInclusive value="-30"/>
      <maxInclusive value="30"/>
    </restriction>
  </simpleType>
  <simpleType name="ThresholdUtraRscpRangeType">
    <restriction base="short">
      <minInclusive value="-5"/>
      <maxInclusive value="91"/>
    </restriction>
  </simpleType>
  <simpleType name="ThresholdUtraEcN0RangeType">
    <restriction base="unsignedShort">
      <minInclusive value="0"/>
      <maxInclusive value="49"/>
    </restriction>
  </simpleType>
  <simpleType name="ThresholdGeranRangeType">
    <restriction base="unsignedShort">
      <minInclusive value="0"/>
      <maxInclusive value="63"/>
    </restriction>
  </simpleType>
  <simpleType name="ThresholdCDMA2000RangeType">
    <restriction base="unsignedShort">
      <minInclusive value="0"/>
      <maxInclusive value="63"/>
    </restriction>
  </simpleType>
  <simpleType name="CommonChannelPowerOffsetRangeType">
    <restriction base="short">
      <minInclusive value="-350"/>
      <maxInclusive value="150"/>
    </restriction>
  </simpleType>
  <simpleType name="ConfigurationIndexRangeType">
    <restriction base="unsignedShort">
      <minInclusive value="0"/>
      <maxInclusive value="63"/>
    </restriction>
  </simpleType>
  <simpleType name="HysteresisRangeType">
    <restriction base="unsignedShort">
      <minInclusive value="0"/>
      <maxInclusive value="30"/>
    </restriction>
  </simpleType>
  <simpleType name="PMaxRangeType">
    <restriction base="short">
      <minInclusive value="-30"/>
      <maxInclusive value="33"/>
    </restriction>
  </simpleType>
  <simpleType name="QOffsetRangeType">
    <restriction base="short">
      <minInclusive value="-15"/>
      <maxInclusive value="15"/>
    </restriction>
  </simpleType>
  <simpleType name="QQualMinUtraRangeType">
    <restriction base="short">
      <minInclusive value="-24"/>
      <maxInclusive value="0"/>
    </restriction>
```

```
</simpleType>
<simpleType name="QRxLevMinEUtraRangeType">
  <restriction base="short">
    <minInclusive value="-77"/>
    <maxInclusive value="-22"/>
  </restriction>
</simpleType>
<simpleType name="QRxLevMinGeranRangeType">
  <restriction base="unsignedShort">
    <minInclusive value="0"/>
    <maxInclusive value="63"/>
  </restriction>
</simpleType>
<simpleType name="QRxLevMinUtraRangeType">
  <restriction base="short">
    <minInclusive value="-60"/>
    <maxInclusive value="-13"/>
  </restriction>
</simpleType>
<simpleType name="RootSequenceIndexRangeType">
  <restriction base="unsignedShort">
    <minInclusive value="0"/>
    <maxInclusive value="837"/>
  </restriction>
</simpleType>
<simpleType name="SIntraSearchRangeType">
  <restriction base="unsignedShort">
    <minInclusive value="0"/>
    <maxInclusive value="31"/>
  </restriction>
</simpleType>
<simpleType name="TReselectionRangeType">
  <restriction base="unsignedShort">
    <minInclusive value="0"/>
    <maxInclusive value="7"/>
  </restriction>
</simpleType>
<simpleType name="TStoreUeContextRangeType">
  <restriction base="unsignedShort">
    <minInclusive value="0"/>
    <maxInclusive value="1023"/>
  </restriction>
</simpleType>

<complexType name="TceIDMappingInfo">
  <sequence>
    <element name="tceID" type="short"/>
    <element name="tceIPAddr" type="string"/>
  </sequence>
</complexType>
<complexType name="TceIDMappingInfoList">
  <sequence>
    <element name="tceIDMappingInfo" type="en:TceIDMappingInfo" minOccurs="0"/>
  </sequence>
</complexType>

<complexType name="SharNetTceMappingInfo">
  <sequence>
    <element name="pLMNId" type="long"/>
    <element name="tceID" type="short"/>
    <element name="tceIPAddr" type="string"/>
  </sequence>
</complexType>
<complexType name="SharNetTceMappingInfoList">
  <sequence>
    <element name="sharNetTceMappingInfo" type="en:SharNetTceMappingInfo" minOccurs="0"/>
  </sequence>
</complexType>

<simpleType name="cellOutageCompensationState">
  <restriction base="string">
    <enumeration value="cOCActivating"/>
    <enumeration value="cOCActive"/>
    <enumeration value="cOCDeactivating"/>
    <enumeration value="cOCDeactive"/>
  </restriction>
</simpleType>
<complexType name="cellOutageCompensationStatus">
```

```
    <sequence>
      <element name="cellOutageCompensationState" type="en:cellOutageCompensationState"/>
      <element name="errorList" type="xn:dnList"/>
    </sequence>
  </complexType>
  <element name="CellOutageCompensationInformation">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes">
              <complexType>
                <all>
                  <element name="cellOutageCompensationStatus"
                           type="en:cellOutageCompensationStatus"/>
                  <element name="isCOCAllowed" type="boolean"/>
                </all>
              </complexType>
            </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>

  <simpleType name="NumOfCRSPorts">
    <restriction base="unsignedShort">
      <minInclusive value="1"/>
      <maxInclusive value="2"/>
    </restriction>
  </simpleType>

  <complexType name="ReferenceSignalPattern">
    <sequence>
      <element name="prsSupported" type="en:yesNoType"/>
    </sequence>
  </complexType>

  <simpleType name="ReferenceSignalPeriodicity">
    <restriction base="string">
      <enumeration value="ms1280"/>
      <enumeration value="ms2560"/>
      <enumeration value="ms5120"/>
      <enumeration value="ms10240"/>
    </restriction>
  </simpleType>

  <simpleType name="ReferenceSignalOffset">
    <restriction base="unsignedShort">
      <minInclusive value="0"/>
      <maxInclusive value="10239"/>
    </restriction>
  </simpleType>

  <complexType name="NetListeningRefSignalType">
    <sequence>
      <element name="referenceSignalPattern" type="en:ReferenceSignalPattern"/>
      <element name="numOfCRSPorts" type="en:NumOfCRSPorts"/>
      <element name="referenceSignalPeriodicity" type="en:ReferenceSignalPeriodicity"/>
      <element name="referenceSignalOffset" type="en:ReferenceSignalOffset"/>
    </sequence>
  </complexType>

  <complexType name="NetListeningRSForRIBS">
    <sequence>
      <element name="netListeningRefSignal" type="en:NetListeningRefSignalType" maxOccurs="4"/>
    </sequence>
  </complexType>

  <element name="EUtranCellNMCentralizedSON">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes">
              <complexType>
                <all>
                  <element name="a1ThresholdRsrp" type="en:ThresholdRsrpRangeType" minOccurs="0"/>
```

```
                    <element name="a1ThresholdRsrq" type="en:ThresholdRsrqRangeType" minOccurs="0"/>
                    <element name="a2ThresholdRsrp" type="en:ThresholdRsrpRangeType" minOccurs="0"/>
                    <element name="a2ThresholdRsrq" type="en:ThresholdRsrqRangeType" minOccurs="0"/>
                    <element name="a3Offset" type="en:OffsetRangeType" minOccurs="0"/>
                    <element name="a4ThresholdRsrp" type="en:ThresholdRsrpRangeType" minOccurs="0"/>
                    <element name="a4ThresholdRsrq" type="en:ThresholdRsrqRangeType" minOccurs="0"/>
                    <element name="a5Threshold1Rsrp" type="en:ThresholdRsrpRangeType" minOccurs="0"/>
                    <element name="a5Threshold1Rsrq" type="en:ThresholdRsrqRangeType" minOccurs="0"/>

                    <element name="b1ThresholdUtraRscp" type="en:ThresholdUtraRscpRangeType"
minOccurs="0"/>

                    <element name="b1ThresholdUtraEcN0" type="en:ThresholdUtraEcN0RangeType"
minOccurs="0"/>
                    <element name="b1ThresholdGeran" type="en:ThresholdGeranRangeType" minOccurs="0"/>
                    <element name="b1ThresholdCdma2000" type="en:ThresholdCDMA2000RangeType"
minOccurs="0"/>
                    <element name="b2Threshold1Rsrp" type="en:ThresholdRsrpRangeType" minOccurs="0"/>
                    <element name="b2Threshold1Rsrq" type="en:ThresholdRsrqRangeType" minOccurs="0"/>
                    <element name="b2Threshold2UtraRscp" type="en:ThresholdUtraRscpRangeType"
minOccurs="0"/>
                    <element name="b2Threshold2UtraEcN0" type="en:ThresholdUtraEcN0RangeType"
minOccurs="0"/>
                    <element name="b2Threshold2Geran" type="en:ThresholdGeranRangeType"
minOccurs="0"/>
                    <element name="b2Threshold2Cdma2000" type="en:ThresholdCDMA2000RangeType"
minOccurs="0"/>
                    <element name="commonChannelPowerOffset"
type="en:CommonChannelPowerOffsetRangeType" minOccurs="0"/>
                    <element name="configurationIndex" type="en:ConfigurationIndexRangeType"
minOccurs="0"/>
                    <element name="contentionResolutionTimer"
type="en:ContentionResolutionTimerEnumType" minOccurs="0"/>
                    <element name="hysteresisEutraA1" type="en:HysteresisRangeType" minOccurs="0"/>
                    <element name="hysteresisEutraA2" type="en:HysteresisRangeType" minOccurs="0"/>
                    <element name="hysteresisEutraA3" type="en:HysteresisRangeType" minOccurs="0"/>
                    <element name="hysteresisEutraA4" type="en:HysteresisRangeType" minOccurs="0"/>
                    <element name="hysteresisEutraA5" type="en:HysteresisRangeType" minOccurs="0"/>
                    <element name="hysteresisIratB1" type="en:HysteresisRangeType" minOccurs="0"/>
                    <element name="hysteresisIratB2" type="en:HysteresisRangeType" minOccurs="0"/>
                    <element name="numberOfRaPreambles" type="en:NumberOfRaPreamblesEnumType"
minOccurs="0"/>
                    <element name="preambleInitialReceivedTargetPower"
type="en:PreambleInitialReceivedTargetPowerEnumType" minOccurs="0"/>
                    <element name="preambleTransMax" type="en:PreambleTransMaxEnumType"
minOccurs="0"/>
                    <element name="pMax" type="en:PMaxRangeType" minOccurs="0"/>
                    <element name="powerRampingStep" type="en:PowerRampingStepEnumType"
minOccurs="0"/>
                    <element name="qHyst" type="en:PreambleInitialReceivedTargetPowerEnumType"
minOccurs="0"/>
                    <element name="qOffsetUtra" type="en:QOffsetRangeType" minOccurs="0"/>
                    <element name="qOffsetGeran" type="en:QOffsetRangeType" minOccurs="0"/>
                    <element name="qOffsetCdma2000" type="en:QOffsetRangeType" minOccurs="0"/>
                    <element name="qQualMinUtra" type="en:QQualMinUtraRangeType" minOccurs="0"/>
                    <element name="qRxLevMinEUtraSib1" type="en:QRxLevMinEUtraRangeType"
minOccurs="0"/>
                    <element name="qRxLevMinEUtraSib3" type="en:QRxLevMinEUtraRangeType"
minOccurs="0"/>
                    <element name="qRxLevMinGeran" type="en:QRxLevMinGeranRangeType" minOccurs="0"/>
                    <element name="qRxLevMinUtra" type="en:QRxLevMinUtraRangeType" minOccurs="0"/>
                    <element name="responseWindowSize" type="en:ResponseWindowSizeEnumType"
minOccurs="0"/>
                    <element name="rootSequenceIndex" type="en:RootSequenceIndexRangeType"
minOccurs="0"/>
                    <element name="sIntraSearch" type="en:SIntraSearchRangeType" minOccurs="0"/>
                    <element name="sizeOfRAPreamblesGroupA" type="en:SizeOfRAPreambleGroupAEnumType"
minOccurs="0"/>
                    <element name="timeToTriggerEutraA1" type="en:TimeToTriggerEUtraEnumType"
minOccurs="0"/>
                    <element name="timeToTriggerEutraA2" type="en:TimeToTriggerEUtraEnumType"
minOccurs="0"/>
                    <element name="timeToTriggerEutraA3" type="en:TimeToTriggerEUtraEnumType"
minOccurs="0"/>
                    <element name="timeToTriggerEutraA4" type="en:TimeToTriggerEUtraEnumType"
minOccurs="0"/>
                    <element name="timeToTriggerEutraA5" type="en:TimeToTriggerEUtraEnumType"
minOccurs="0"/>
```

```
                  <element name="timeToTriggerIratB1" type="en:TimeToTriggerEUtraEnumType"
minOccurs="0"/>
                  <element name="timeToTriggerIratB2" type="en:TimeToTriggerEUtraEnumType"
minOccurs="0"/>
                  <element name="tReselectionCdma2000" type="en:TReselectionRangeType"
minOccurs="0"/>
                  <element name="tReselectionEUtra" type="en:TReselectionRangeType" minOccurs="0"/>
                  <element name="tReselectionGeran" type="en:TReselectionRangeType" minOccurs="0"/>
                  <element name="tReselectionUtra" type="en:TReselectionRangeType" minOccurs="0"/>
                  <element name="tStoreUeContext" type="en:TStoreUeContextRangeType" minOccurs="0"/>
                </all>
              </complexType>
            </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>

  <element name="ENBFunction" substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="userLabel" type="string"/>
                  <element name="intraANRSwitch" type="boolean" minOccurs="0"/>
                  <element name="iRATANRSwitch" type="boolean" minOccurs="0"/>
                  <element name="enbId" type="en:EnbId" minOccurs="0"/>
                  <element name="x2BlackList" type="xn:dnList" minOccurs="0"/>
                  <element name="x2WhiteList" type="xn:dnList" minOccurs="0"/>
                  <element name="x2HOBlackList" type="xn:dnList" minOccurs="0"/>
                  <element name="x2IpAddressList" type="string" minOccurs="0"/>
                  <element name="tceIDMappingInfoList" type="en:TceIDMappingInfoList"
minOccurs="0"/>
                  <element name="sharNetTceMappingInfoList" type="en:SharNetTceMappingInfoList"
minOccurs="0"/>
                  <element name="netListeningRSForRIBS" type="en:NetListeningRSForRIBS"
minOccurs="0"/>
                  <!-- linkList attribute is to be added when defined in the IS -->
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="en:EUtranCellFDD"/>
              <element ref="en:EUtranCellTDD"/>
              <element ref="epc:EP_RP_EPS"/>
              <element ref="en:ENBFunctionOptionallyContainedNrmClass"/>
              <element ref="en:DeNBCapability"/>
              <element ref="xn:VsDataContainer"/>
            </choice>
            <choice minOccurs="0" maxOccurs="1">
              <element ref="sp:ESPolicies"/>
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
  <element name="RNFunction" substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="userLabel" type="string"/>
                  <element name="servingCell" type="xn:dn"/>
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="epc:EP_RP_EPS"/>
              <element ref="en:RNFunctionOptionallyContainedNrmClass"/>
              <element ref="xn:VsDataContainer"/>
```

```
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
  <element name="DeNBCapability">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="userLabel" type="string"/>
                  <element name="servedRN" type="xn:dnList" minOccurs="0"/>
                  <element name="maxNbrRNAllowed" type="unsignedShort"/>
                </all>
              </complexType>
            </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
   </element>
  <element name="ExternalRNFunction"
substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="userLabel" type="string"/>
                  <element name="candidateDeNBCells" type="en:EcgiList" minOccurs="0"/>
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="epc:EP_RP_EPS"/>
              <element ref="en:ExternalRNFunctionOptionallyContainedNrmClass"/>
              <element ref="xn:VsDataContainer"/>
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
  <element name="ExternalENBFunction" substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="userLabel" type="string"/>
                  <element name="enbId" type="en:EnbId" minOccurs="0"/>
                  <!-- Attributes are to be added when defined in the IS -->
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="en:ExternalEUtranCellFDD"/>
              <element ref="en:ExternalEUtranCellTDD"/>
              <element ref="en:ExternalENBFunctionOptionallyContainedNrmClass"/>
              <element ref="xn:VsDataContainer"/>
            </choice>
            <choice minOccurs="0" maxOccurs="1">
              <element ref="sp:InterRatEsPolicies"/>
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
  <element name="EUtranCellFDD">
```

```
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <!-- Inherited attributes from EUtranGenericCell-->
                  <element name="userLabel" type="string"/>
                  <element name="cellLocalId" type="en:CellLocalId"/>
                  <element name="cellSize" type="en:cellSize"/>
                  <element name="pLMNIdList" type="en:PLMNIdList"/>
                  <element name="tac" type="long"/>
                  <element name="pci" type="en:Pci"/>
                  <element name="pciList" type="en:PciList" minOccurs="0"/>
                  <element name="maximumTransmissionPower" type="short"/>
                  <element name="partOfSectorPower" type="short" minOccurs="0"/>
                  <element name="referenceSignalPower" type="short"/>
                  <element name="pb" type="short"/>
                  <element name="relatedTmaList" type="xn:dnList" minOccurs="0"/>
                  <element name="relatedAntennaList" type="xn:dnList" minOccurs="0"/>
                  <element name="relatedSector" type="xn:dn" minOccurs="0"/>
                  <element name="operationalState" type="sm:operationalStateType" minOccurs="0"/>
                  <element name="administrativeState" type="sm:administrativeStateType"
                                minOccurs="0"/>
                  <element name="availabilityStatus" type="sm:availabilityStatusType"
                                minOccurs="0"/>
                  <element name="allowedAccessClasses" type="en:allowedAccessClassesType"/>
                  <element name="cellResvInfo" type="en:cellResvInfoType" minOccurs="0"/>
                  <element name="nbIoTcellFlag" type="en:yesNoType" minOccurs="0"/>
                  <element name="isChangeForEnergySavingAllowed"
                                 type="en:yesNoType" minOccurs="0"/>
                  <!-- End of inherited attributes from EUtranGenericCell -->
                  <element name="earfcnDl" type="short"/>
                  <element name="earfcnUl" type="short"/>
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="en:EUtranRelation"/>
              <element ref="en:Cdma2000Relation"/>
              <element ref="gn:GsmRelation"/>
              <element ref="un:UtranRelation"/>
              <element ref="en:EUtranCellFDDOptionallyContainedNrmClass"/>
              <element ref="xn:VsDataContainer"/>
            </choice>
            <choice minOccurs="0" maxOccurs="1">
              <element ref="sp:EnergySavingProperties"/>
              <element ref="sp:ESPolicies"/>
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
  <element name="ExternalEUtranCellFDD"
substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <!-- Inherited attributes from ExternalEUtranGenericCell-->
                  <element name="userLabel" type="string"/>
                  <element name="pci" type="en:Pci"/>
                  <element name="pLMNIdList" type="en:PLMNIdList"/>
                  <element name="cellLocalId" type="en:CellLocalId"/>
                  <element name="enbId" type="en:EnbId" minOccurs="0"/>
                  <!-- End of inherited attributes from ExternalEUtranGenericCell -->
                  <element name="earfcnDl" type="short"/>
                  <element name="earfcnUl" type="short"/>
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="en:ExternalEUtranCellFDDOptionallyContainedNrmClass"/>
```

```
            <element ref="xn:VsDataContainer"/>
          </choice>
          <choice minOccurs="0">
            <element ref="en:CellOutageCompensationInformation"/>
          </choice>
          <choice minOccurs="0" maxOccurs="1">
            <element ref="sp:InterRatEsPolicies"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>
<element name="EUtranCellTDD">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <!-- Inherited attributes from EUtranGenericCell-->
                <element name="userLabel" type="string"/>
                <element name="cellLocalId" type="en:CellLocalId"/>
                <element name="cellSize" type="en:cellSize"/>
                <element name="pLMNIdList" type="en:PLMNIdList"/>
                <element name="tac" type="long"/>
                <element name="pci" type="en:Pci" />
                <element name="pciList" type="en:PciList" minOccurs="0"/>
                <element name="maximumTransmissionPower" type="short"/>
                <element name="partOfSectorPower" type="short" minOccurs="0"/>
                <element name="referenceSignalPower" type="short"/>
                <element name="pb" type="short"/>
                <element name="relatedTmaList" type="xn:dnList" minOccurs="0"/>
                <element name="relatedAntennaList" type="xn:dnList" minOccurs="0"/>
                <element name="relatedSector" type="xn:dn" minOccurs="0"/>
                <element name="operationalState" type="sm:operationalStateType" minOccurs="0"/>
                <element name="administrativeState" type="sm:administrativeStateType"
                          minOccurs="0"/>
                <element name="availabilityStatus" type="sm:availabilityStatusType"
                          minOccurs="0"/>
                <element name="allowedAccessClasses" type="en:allowedAccessClassesType"/>
                <element name="cellResvInfo" type="en:cellResvInfoType" minOccurs="0"/>
                <element name="nbIoTcellFlag" type="en:yesNoType" minOccurs="0"/>
                <element name="isChangeForEnergySavingAllowed"
                           type="en:yesNoType" minOccurs="0"/>
                <!-- End of inherited attributes from EUtranGenericCell -->
                   <element name="earfcn" type="short"/>
                   <element name="sfAssignment" type="short"/>
                <element name="specialSfPatterns" type="short"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="en:EUtranRelation"/>
            <element ref="en:Cdma2000Relation"/>
            <element ref="gn:GsmRelation"/>
            <element ref="un:UtranRelation"/>
            <element ref="en:EUtranCellTDDOptionallyContainedNrmClass"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
          <choice minOccurs="0" maxOccurs="1">
            <element ref="sp:EnergySavingProperties"/>
            <element ref="sp:ESPolicies"/>
          </choice>
          <choice minOccurs="0">
            <element ref="en:CellOutageCompensationInformation"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>
<element name="ExternalEUtranCellTDD"
substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
```

```
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <!-- Inherited attributes from ExternalEUtranGenericCell-->
                <element name="userLabel" type="string"/>
                <element name="pci" type="en:Pci"/>
                <element name="pLMNIdList" type="en:PLMNIdList"/>
                <element name="cellLocalId" type="en:CellLocalId"/>
                <element name="enbId" type="en:EnbId" minOccurs="0"/>
                <!-- End of inherited attributes from ExternalEUtranGenericCell -->
                  <element name="earfcn" type="short"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="en:ExternalEUtranCellTDDOptionallyContainedNrmClass"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
          <choice minOccurs="0" maxOccurs="1">
            <element ref="sp:InterRatEsPolicies"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>
<element name="EUtranRelation">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="tCI" type="long" minOccurs="0"/>
                <element name="isRemoveAllowed" type="boolean" minOccurs="0"/>
                <element name="isHOAllowed" type="boolean" minOccurs="0"/>
                <element name="isICICInformationSendAllowed" type="boolean" minOccurs="0"/>
                <element name="isLBAllowed" type="boolean" minOccurs="0"/>
                <element name="adjacentCell" type="xn:dn"/>
                <element name="isEsCoveredBy" type="en:isEsCoveredByEnumType" minOccurs="0"/>
                <element name="cellIndividualOffset" type="en:QOffsetEnumType" minOccurs="0"/>
                <element name="qOffset" type="en:QOffsetEnumType" minOccurs="0"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="en:EUtranRelationOptionallyContainedNrmClass"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>
<element name="Cdma2000Relation">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="adjacentSector" type="xn:dn"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="en:Cdma2000RelationOptionallyContainedNrmClass"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>
<element name="Link_ENB_ENB" substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
```

```
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <!-- Inherited attributes from Link -->
                  <element name="aEnd" type="xn:dn"/>
                  <element name="linkType" type="xn:linkType" minOccurs="0"/>
                  <element name="protocolName" type="string" minOccurs="0"/>
                  <element name="protocolVersion" type="string" minOccurs="0"/>
                  <element name="userLabel" type="string"/>
                  <element name="zEnd" type="xn:dn"/>
                  <!-- End of inherited attributes from Link -->
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="en:Link_ENB_ENBOptionallyContainedNrmClass"/>
              <element ref="xn:VsDataContainer"/>
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
<element name="MCEFunction" substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="userLabel" type="string" minOccurs="0"/>
                  <!-- Attributes are to be added when defined in the IS -->
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="en:MCEFunctionOptionallyContainedNrmClass"/>
                 <element ref="en:MBSFNArea"/>
              <element ref="xn:VsDataContainer"/>
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
  <element name="MBSFNArea" >
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                   <element name="mbsfnAreaId" type="en:mbsfnAreaIdType" minOccurs="0"/>
                   <element name="cellIdList" type="xn:dnList" minOccurs="0"/>
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="en:MBSFNAreaOptionallyContainedNrmClass"/>
              <element ref="xn:VsDataContainer"/>
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
<element name="Link_MCE_ENB" substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
```

```
            <complexType>
              <all>
                <!-- Inherited attributes from Link -->
                <element name="aEnd" type="xn:dn" minOccurs="0"/>
                <element name="linkType" type="xn:linkType" minOccurs="0"/>
                <element name="protocolName" type="string" minOccurs="0"/>
                <element name="protocolVersion" type="string" minOccurs="0"/>
                <element name="userLabel" type="string" minOccurs="0"/>
                <element name="zEnd" type="xn:dn" minOccurs="0"/>
                <!-- End of inherited attributes from Link -->
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="en:Link_MCE_ENBOptionallyContainedNrmClass"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>
<element name="Link_MCE_MME" substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <!-- Inherited attributes from Link -->
                <element name="aEnd" type="xn:dn" minOccurs="0"/>
                <element name="linkType" type="xn:linkType" minOccurs="0"/>
                <element name="protocolName" type="string" minOccurs="0"/>
                <element name="protocolVersion" type="string" minOccurs="0"/>
                <element name="userLabel" type="string" minOccurs="0"/>
                <element name="zEnd" type="xn:dn" minOccurs="0"/>
                <!-- End of inherited attributes from Link -->
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="en:Link_MCE_MMEOptionallyContainedNrmClass"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>


<element name="QciDscpMapping"
  substitutionGroup="en:RNFunctionOptionallyContainedNrmClass"
>
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="userLabel" type="string"/>
                <element name="QciDscpMappingList" type="en:QciDscpMappingListType"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<!--  The element definition for EP_RP_EPS is available through
      the epcNrm.xsd (3GPP TS 28.709), by using epc:EP_RP_EPS -->
```

```
  <element name="ENBFunctionOptionallyContainedNrmClass" type="xn:NrmClass" abstract="true"/>
  <element name="ExternalENBFunctionOptionallyContainedNrmClass" type="xn:NrmClass"
abstract="true"/>
  <element name="EUtranCellFDDOptionallyContainedNrmClass" type="xn:NrmClass" abstract="true"/>
  <element name="ExternalEUtranCellFDDOptionallyContainedNrmClass" type="xn:NrmClass"
abstract="true"/>
  <element name="EUtranCellTDDOptionallyContainedNrmClass" type="xn:NrmClass" abstract="true"/>
  <element name="ExternalEUtranCellTDDOptionallyContainedNrmClass" type="xn:NrmClass"
abstract="true"/>
  <element name="EUtranRelationOptionallyContainedNrmClass" type="xn:NrmClass" abstract="true"/>
  <element name="Cdma2000RelationOptionallyContainedNrmClass" type="xn:NrmClass" abstract="true"/>
  <element name="Link_ENB_ENBOptionallyContainedNrmClass" type="xn:NrmClass" abstract="true"/>
  <element name="MCEFunctionOptionallyContainedNrmClass" type="xn:NrmClass" abstract="true"/>
  <element name="Link_MCE_ENBOptionallyContainedNrmClass" type="xn:NrmClass" abstract="true"/>
  <element name="Link_MCE_MMEOptionallyContainedNrmClass" type="xn:NrmClass" abstract="true"/>
  <element name="MBSFNAreaOptionallyContainedNrmClass" type="xn:NrmClass" abstract="true"/>
  <element name="RNFunctionOptionallyContainedNrmClass" type="xn:NrmClass" abstract="true"/>
  <element name="ExternalRNFunctionOptionallyContainedNrmClass" type="xn:NrmClass" abstract="true"/>
</schema>
```

Annex C (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
03-2013	SA#59	SP-130048	001	1	Correction of attribute name relatedSector	11.0.0	11.1.0
		SP-130057	002	-	Alignment with 28.658: Addition of missing Network Sharing support for MDT		
06-2013	SA#60	SP-130304	003	1	Energy saving synchronization with 32.766	11.1.0	11.2.0
12-2013	SA#62	SP-130614	005	1	Add blacklist member	11.2.0	11.3.0
06-2014	SA#64	SP-140332	006	-	upgrade XSD	11.3.0	11.4.0
		SP-140332	007	1	Add the missing attribute cellResvInfo in IDL specification		
		SP-140359	008	-	remove the feature support statements		
09-2014	SA#65	SP-140560	009	-	Update the link from Solution Set to Information Service due to the end of Release 12	11.4.0	12.0.0
12-2014	SA#66	SP-140797	011	-	Remove obsolete EUtranRelationSon - Align with 28.658	12.0.0	12.1.0
		SP-140798	012	-	Add missing OAM support for radio interface based synchronization - Align with TS 36.300		
12-2015	SA#70	SP-150691	014	1	Align id attribute definitions	12.1.0	12.2.0
01-2016	SA#70				Upgrade to Rel-13 (MCC)	12.2.0	13.0.0

Change history							
Date	**Meeting**	**TDoc**	**CR**	**Rev**	**Cat**	**Subject/Comment**	**New version**
2016-06	SA#72	SP-160419	0016	1	B	Adding NB-IoT cell type attribute in EUtranGenericCell IOC – Align with IS	13.1.0
2016-06	SA#72	SP-160407	0017	-	F	Update the link from IRP Solution Set to IRP Information Service	13.1.0
2017-03	SA#75	-	-	-		Promotion to Release 14 without technical change	**14.0.0**

History

Document history		
V14.0.0	April 2017	Publication