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Technical Specification

Universal Mobile Telecommunications System (UMTS);
LTE;
Telecommunication management;
Evolved Packet Core (EPC) Network Resource Model (NRM)
Integration Reference Point (IRP);
Information Service (IS)
(3GPP TS 28.708 version 11.0.0 Release 11)

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Foreword

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Contents

Foreword

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

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

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           1   presented to TSG for information;

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      z   the third digit is incremented when editorial only changes have been incorporated in the document.

Ready for Converged Management

This specification is part of a set that has been developed for converged management solutions.

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:

   28.707:   "Evolved Packet Core (EPC) Network Resource Model (NRM) Integration Reference Point (IRP); Requirements";

   28.708:   **"Evolved Packet Core (EPC) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)";**

   28.709:   "Evolved Packet Core (EPC) Network Resource Model (NRM) Integration Reference Point (IRP); Solution Set (SS) definitions";

Configuration Management (CM), in general, provides the operator with the ability to assure correct and effective operation of the 3G network as it evolves. CM actions have the objective to control and monitor the actual configuration on the Network Elements (NEs) and Network Resources (NRs), and they may be initiated by the operator or by functions in the Operations Systems (OSs) or NEs.

CM actions may be requested as part of an implementation programme (e.g. additions and deletions), as part of an optimization programme (e.g. modifications), and to maintain the overall Quality of Service (QoS). The CM actions are initiated either as single actions on single NEs of the 3G network, or as part of a complex procedure involving actions on many resources/objects in one or several NEs.

1 Scope

The present document specifies Evolved Packet Core (EPC) network resource information that can be communicated between an IRPAgent and an IRPManager for telecommunication network management purposes, including management of converged networks. . It reuses relevant parts of the Generic NRM in 3GPP TS 28.622 [6], either by direct reuse or sub-classing, and in addition to that defines EPC specific Information Object Classes.

This document specifies the semantics and behaviour of information object class attributes and relations visible across the reference point in a protocol and technology neutral way.   It does not define their syntax and encoding.

In order to access the information defined by this NRM, an Interface IRP such as the "Basic CM IRP" is needed (3GPP TS 32.602 [7]). However, which Interface IRP is applicable is outside the scope of the present document.

2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies.   In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1]   3GPP TS 32.101: "Telecommunication management; Principles and high level requirements".

[2]   3GPP TS 32.102: "Telecommunication management; Architecture".

[3]   3GPP TS 32.111-2: "Telecommunication management; Fault Management; Part 2: Alarm Integration Reference Point (IRP): Information Service (IS)".

[4]   3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".

[5]   3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".

[6]   3GPP TS 28.622: "Telecommunication management; Generic Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

[7]   3GPP TS 32.602: "Telecommunication management; Configuration Management (CM); Basic Configuration Management Integration Reference Point (IRP): Information Service (IS)".

[8]   3GPP TS 28.702: " Telecommunication management; Core Network (CN) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

[9]   3GPP TS 23.401: "GPRS enhancements for E-UTRAN access".

[10]   3GPP TS 28.705: "Telecommunication management; IP Multimedia Subsystem (IMS) Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)".

[11]   3GPP TS 28.658: "Telecommunication management; Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

[12]   3GPP TS 23.402: "Architecture Enhancements for non-3GPP accesses".

[13]   3GPP TS 32.662: "Telecommunication management; Configuration Management (CM); Kernel CM; Information service (IS)".

[14]   3GPP TS 23.003: " Technical Specification Group Core Network and Terminals; Numbering, addressing and identification".

[15]   3GPP TR 32.816-160: "Telecommunication management; Study on management of Evolved Universal Terrestrial Radio Access Network (E-UTRAN) and Evolved Packet Core (EPC) ".

[16]   3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2".

[17]   3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".

[18]   3GPP TS 36.331: " Evolved Universal Terrestrial Radio Access Network   (E-UTRAN); S1 Application Protocol (S1AP)".

[19]   3GPP TS 23.203: "Policy and charging control architecture".

[20]   3GPP TS 32.302: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Information Service (IS)".

3   Definitions and abbreviations

3.1   Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TS 32.101 [1], 3GPP TS 32.102 [2], 3GPP TS 32.600 [5] and the following apply:

Association: See definition in TS 28.622 [6].

Managed Element (ME): See definition in TS 28.622 [6].

Managed Object (MO): See definition in TS 28.622 [6].

Management Information Model (MIM): also referred to as NRM - see the definition below.

Network Resource Model (NRM): See definition in TS 28.622 [6].

3.2   Abbreviations

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

CIM	Common Information Model
EM	Element Manager
eNodeB	evolved NodeB
EPC	Evolved Packet Core
ePDG	evolved Packet Data Gateway
E-UTRAN	Evolved Universal Terrestrial Radio Access Network
GPRS	General Packet Radio System
IOC	Information Object Class
IRP	Integration Reference Point
IS	Information Service
ME	Managed Element
MIM	Management Information Model
MME	Mobility Management Entity
MO	Managed Object
NE	Network Element
NR	Network Resource
NRM	Network Resource Model
PCRF	Policy and Charging Rules Function

P-GW   PDN Gateway
RDN   Relative Distinguished Name (see 3GPP TS 32.300 [4])
S-GW   Serving Gateway
TMN   Telecom Management Network
UML   Unified Modelling Language

4   Model

4.1   Imported information entities and local labels

Label reference	Local label
TS 28.658 [11], information object class, `ENBFunction`	`ENBFunction`
TS 28. 705 [10], information object class, `HssFunction`	`HssFunction`
TS 28.622 [6], information object class, `Link`	`Link`
TS 28.622 [6], information object class, `ManagedElement`	`ManagedElement`
TS 28.622 [6], information object class, `ManagedFunction`	`ManagedFunction`
TS 28.632 [8], information object class, `SgsnFunction`	`SgsnFunction`
TS 28.622 [6], information object class, `SubNetwork`	`SubNetwork`
TS 28.622 [6], information object class, `EP_RP`	`EP_RP`

4.2   Class diagram

4.2.1   Relationships

This clause depicts the set of IOCs that encapsulate information relevant for this service. This clause provides the overview of the relationships of relevant classes in UML. Subsequent clauses provide more detailed specification of various aspects of these classes.

The figures below show the containment/naming hierarchy and the associations of the information object classes defined in the present document.

  1) NOTE: The listed cardinality numbers represent transient as well as steady-state numbers, and reflect all managed object creation and deletion scenarios in all figures.

Each IOC is identified with a Distinguished Name (DN) according to 3GPP TS 32.300 [4] that expresses its containment hierarchy. As an example, the DN of an IOC representing a MME (3GPP TS 23.401 [9]) could have a format like:

  1) `SubNetwork=China, MeContext =MEC-Gbg-1, ManagedElement =MME-Gbg-1, MMEFunction=MME-1`.
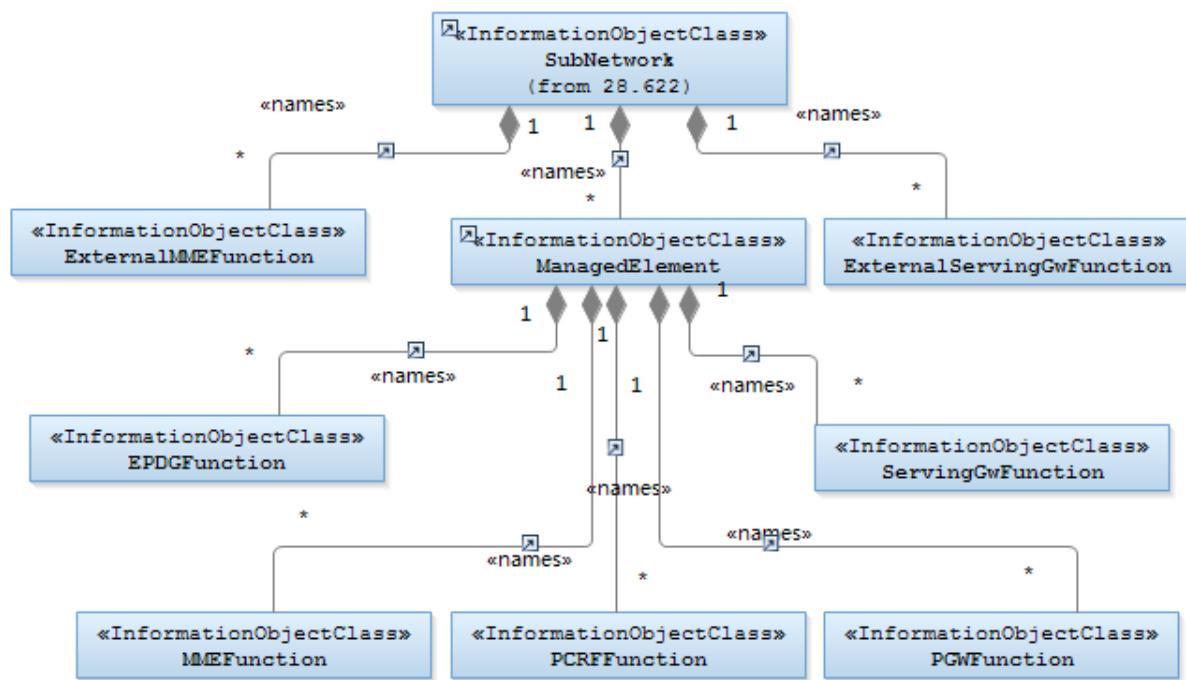
Figure 4.2.1-1: EPC NRM Containment/Naming Relationships
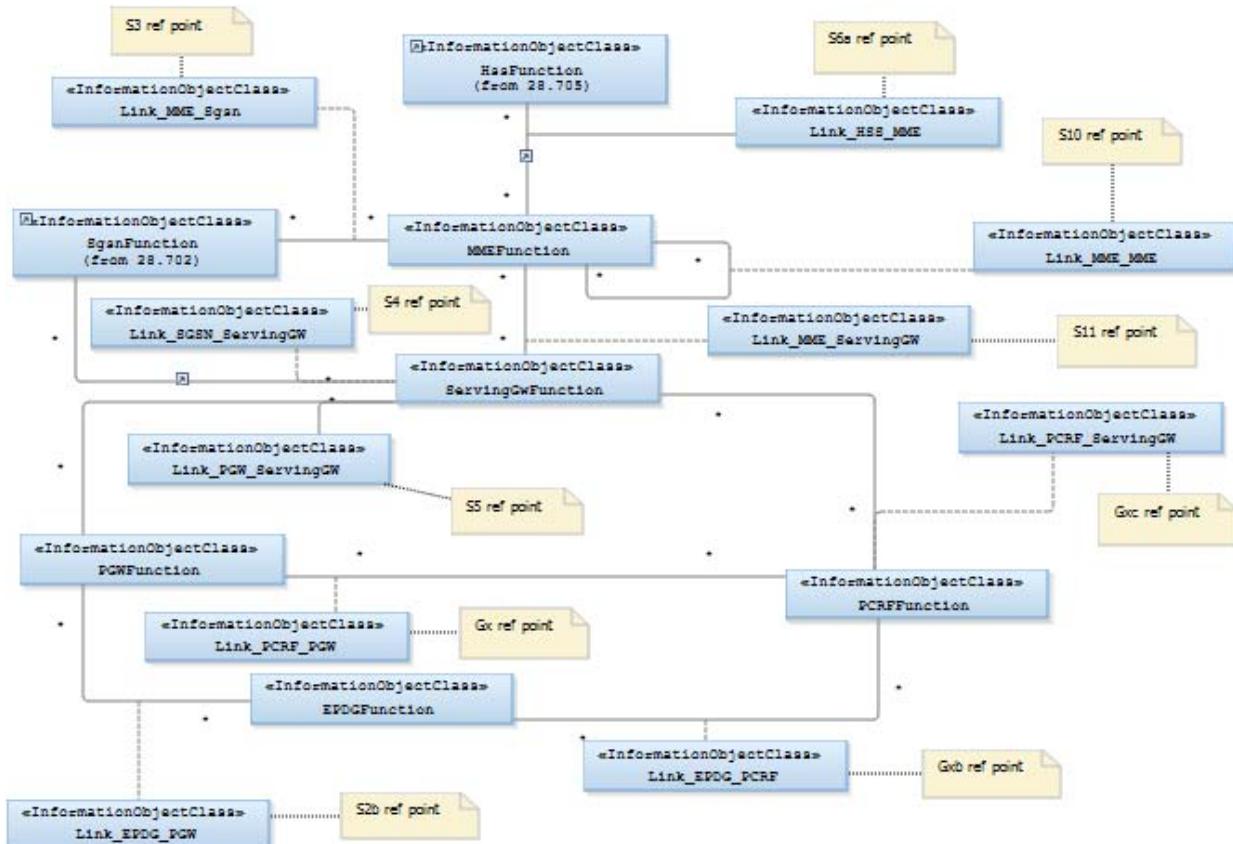
Figure 4.2.1-2: EPC NRM Containment/Naming and Association_1

«InformationObjectClass»
MMEFunction

«InformationObjectClass»
ServingGwFunction

«InformationObjectClass»
Link_ENB_MME

«InformationObjectClass»
Link_ENB_ServingGW

«InformationObjectClass»
ENBFunction
(from 28.658)

S1-MME ref point

S1-U ref point
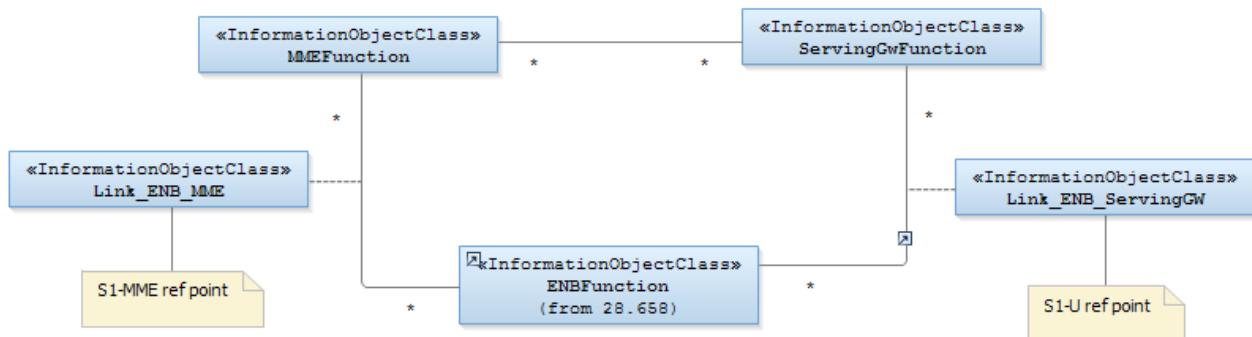
Figure 4.2.1-3: EPC NRM Containment/Naming and Association_2

«InformationObjectClass»
MMEFunction

«InformationObjectClass»
EP_RP_EPS

+ proxy_FarEndNE

«ProxyClass»
Proxy_FarEndNE

This proxy class represents HssFunction from 28.705 or MMEFunction, or SgsnFunction from 28.702, or ServingGwFunction or ENBFunction from 28.658, ExternalServingGwFunction

«InformationObjectClass»
ServingGwFunction

«InformationObjectClass»
EP_RP_EPS

proxy_FarEndNE2

«ProxyClass»
Proxy_FarEndNE

This proxy class represents MMEFunction, or SgsnFunction from 28.702, or ENBFunction from 28.658 or PGWFunction, or PCRFFunction.

«InformationObjectClass»
PGWFunction

«InformationObjectClass»
EP_RP_EPS

proxy_FarEndNE3

«ProxyClass»
Proxy_FarEndNE

This proxy class represents ServingGwFunction, or PGWFunction, or EPDGFunction, or ExternalServingGwFunction

«InformationObjectClass»
PCRFFunction

«InformationObjectClass»
EP_RP_EPS

proxy_FarEndNE4

«ProxyClass»
Proxy_FarEndNE

This proxy class represents ServingGwFunction, or PGWFunction, or EPDGFunction, or ExternalServingGwFunction

«InformationObjectClass»
EPDGFunction

«InformationObjectClass»
EP_RP_EPS

proxy_FarEndNE5

«ProxyClass»
Proxy_FarEndNE

MMEFunction This proxy class represents PGWFunction, or PCRFFunction

Figure 4.2.1-4: EPC NRM Containment/Naming and Association3
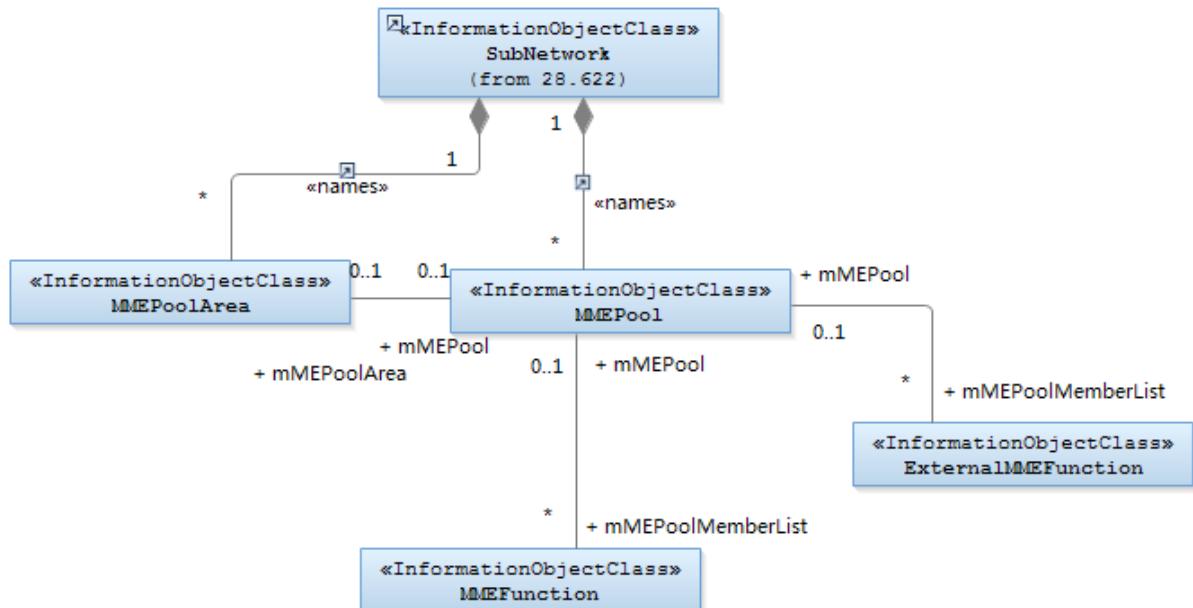
Figure 4.2.1-5 MME Pool Object Model of EPC NRM
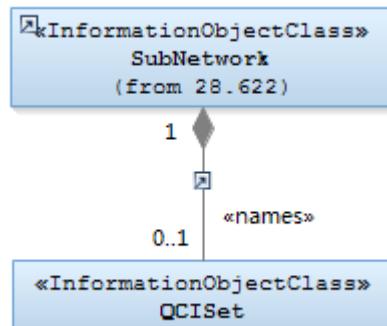
NOTE: QCISet shall be contained in the root SubNetwork instance.

**Figure 4.2.1-6: EPC NRM Containment/Naming and Association 3**
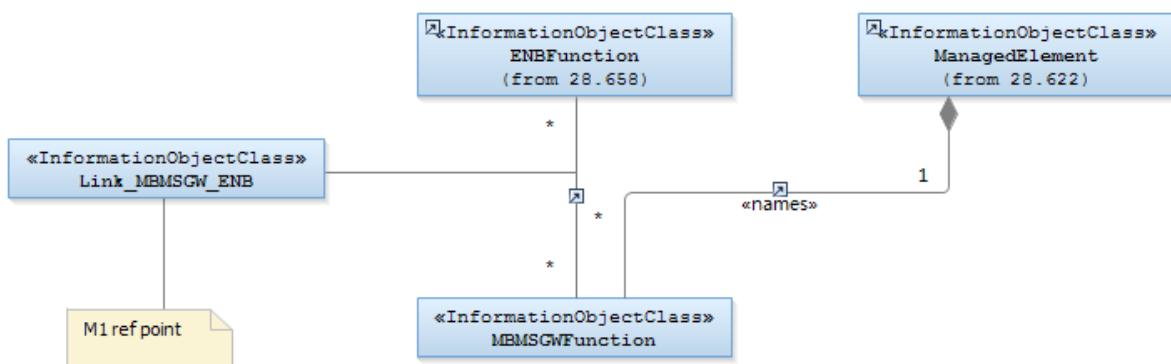
Figure 4.2.1-7: EPC NRM Containment/Naming and Association 4

4.2.2 Inheritance

This clause depicts the inheritance relationships that exist between IOCs.

The figures below show the inheritance hierarchy for the EPC NRM.
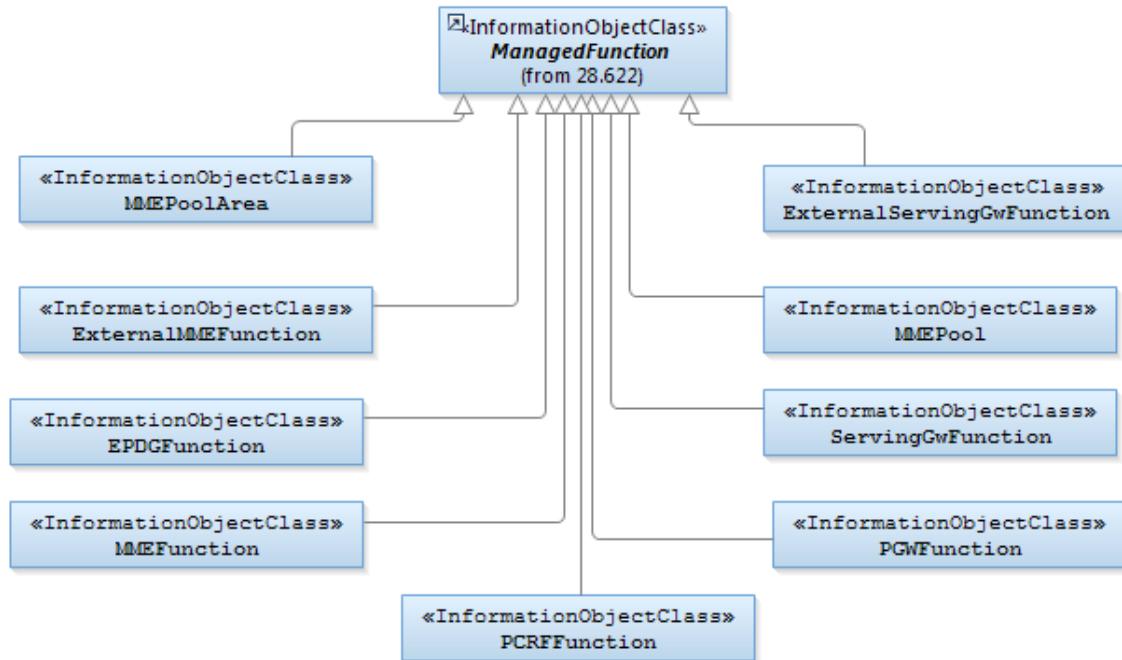
Figure 4.2.2-1: EPC NRM Inheritance Hierarchy_1
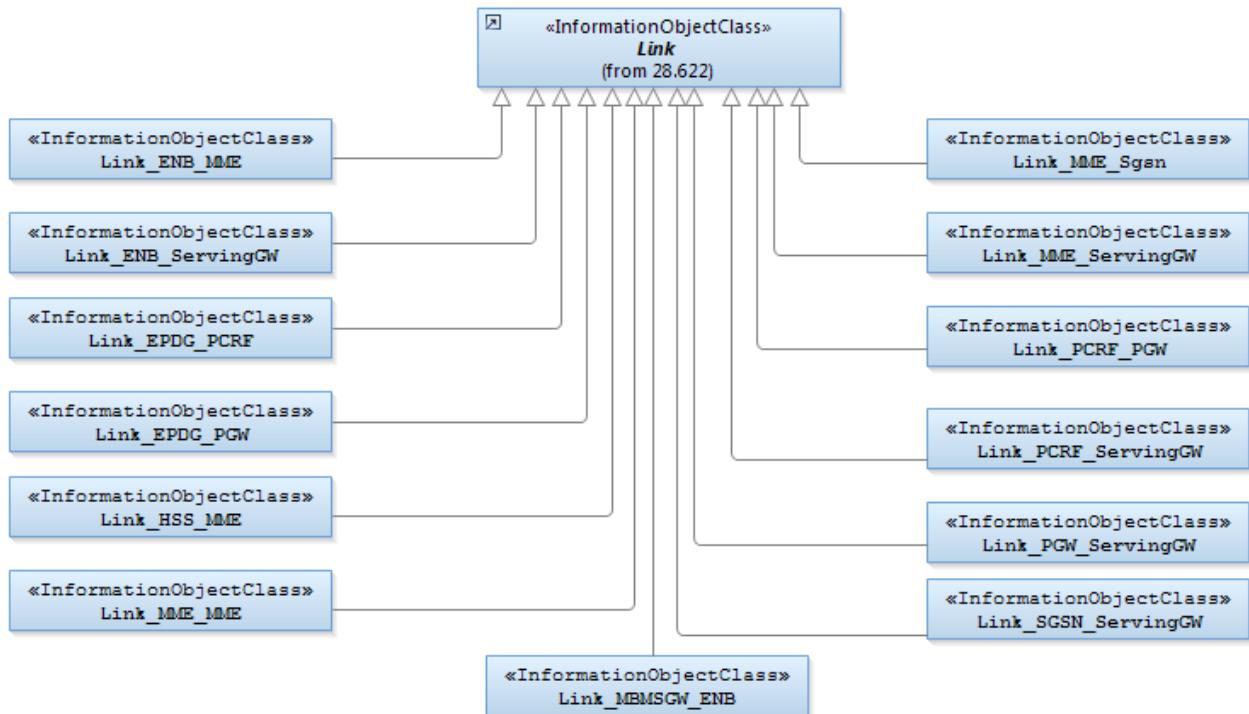
Figure 4.2.2-2: EPC NRM Inheritance Hierarchy_2
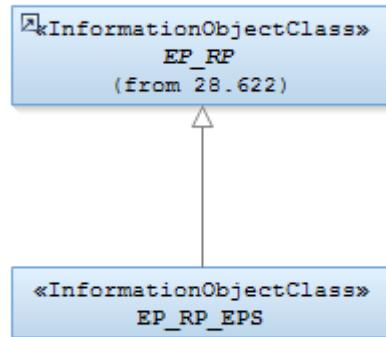
Figure 4.2.2-3: EPC NRM Inheritance Hierarchy_3
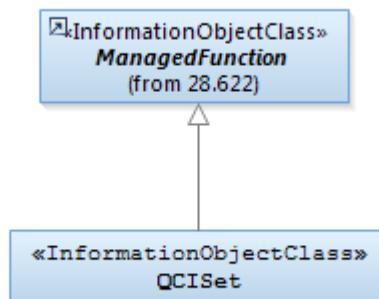
Figure 4.2.2-4: EPC NRM Inheritance Hierarchy_4
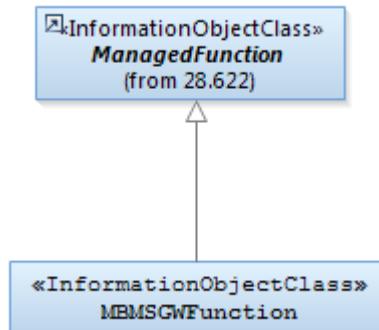
Figure 4.2.2-5: E-UTRAN NRM Inheritance Hierarchy_5

4.3 Class definitions

4.3.1 EPDGFunction

4.3.1.1 Definition

This IOC represents ePDG functionality. For more information about the ePDG, see 3GPP TS 23.402 [12].

4.3.2 MMEFunction

4.3.2.1 Definition

This IOC represents MME functionality. For more information about the MME, see 3GPP TS 23.401 [9].

4.3.2.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
pLMNIdList	M	M	-	-	M
mMEC	M	M	-	-	M
Attribute related to role					
mMEPool	M	M	-	-	M

4.3.2.3 Attribute constraints

None.

4.3.3 PCRFFunction

4.3.3.1 Definition

This IOC represents PCRF functionality. For more information about the PCRF, see 3GPP TS 23.401 [9].

4.3.4 `PGWFunction`

4.3.4.1 Definition

This IOC represents PDN Gateway functionality. For more information about the PDN Gateway, see 3GPP TS 23.401 [9].

4.3.5 `ServingGWFunction`

4.3.5.1 Definition

This IOC represents Serving Gateway functionality. For more information about the Serving Gateway, see 3GPP TS 23.401 [9].

4.3.5.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
pLMNIdList	M	M	-	-	M
tACList	M	M	-	-	M

4.3.6 `MMEPool`

4.3.6.1 Definition

This IOC represents MME Pool. For more information about the MME Pool, see 3GPP TS 23.401 [9].Key concepts related to MME Pool are:

- An MME Pool consists of one or more MME nodes.   A particular node can be a member of one and only one MME Pool.

- One MME Pool serves at most one MME Pool Area.   One MME Pool Area can be served by at most one MME Pool.

4.3.6.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
mMEGI	M	M	-	-	M
Attribute related to role					
mMEPoolMemberList	M	M	M	-	M
mMEPoolArea	M	M	M	-	M

4.3.6.3 Attribute constraints

None.

4.3.7 `MMEPoolArea`

4.3.7.1 Definition

This IOC represents MME Pool Area. For more information about the MME Pool Area, see 3GPP TS 23.401 [9]. Key concepts related to MME Pool Area are:

- An MME Pool Area is defined as an area within which an UE may be served without the need to change the serving MME.   It is a collection of complete Tracking Areas (TAs).

- A particular TA can be a member of one or more MME Pool Areas. In the latter case, the MME Pool Areas involved are called "overlapping MME Pool Areas".

4.3.7.2   Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
tACList	M	M	-	-	M
pLMNIdList	O	M	-	-	M
Attribute related to role					
mMEPool	M	M	M	-	M

4.3.7.3   Attribute constraints

None.

4.3.8   Link_ENB_MME

4.3.8.1   Definition

This IOC models the S1-MME reference point as defined in TS 23.401 [9].

4.3.9   Link_ENB_ServingGW

4.3.9.1   Definition

This IOC models the S1-U reference point as defined in TS 23.401 [9].

4.3.10   Link_EPDG_PCRF

4.3.10.1   Definition

This IOC models the Gxb reference point as defined in TS 23.402 [12].

4.3.11   Link_EPDG_PGW

4.3.11.1   Definition

This IOC models the S2b reference point as defined in TS 23.402 [12].

4.3.12   Link_HSS_MME

4.3.12.1   Definition

This IOC models the S6a reference point as defined in TS 23.401 [9].

4.3.13   Link_MME_MME

4.3.13.1   Definition

This IOC models the S10 reference point as defined in TS 23.401 [9].

4.3.14 `Link_MME_SGSN`

4.3.14.1 Definition

This IOC models the S3 reference point as defined in TS 23.401 [9].

4.3.15 `Link_MME_ServingGW`

4.3.15.1 Definition

This IOC models the S11 reference point as defined in TS 23.401 [9].

4.3.16 `Link_PCRF_ServingGW`

4.3.16.1 Definition

This IOC models the Gxc reference point as defined in TS 23.402 [12].

4.3.17 `Link_PCRF_PGW`

4.3.17.1 Definition

This IOC models the Gx reference point as defined in TS 23.401 [9].

4.3.18 `Link_PGW_ServingGW`

4.3.18.1 Definition

This IOC models the S5 reference point as defined in TS 23.401 [9].

4.3.19 `Link_SGSN_ServingGW`

4.3.19.1 Definition

This IOC models the S4 reference point as defined in TS 23.401 [9].

4.3.20 `EP_RP_EPS`

4.3.20.1 Definition

This IOC represents an end point of reference point in EPS as defined in TS 23.401 [9].

4.3.20.2   Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
farEndNeIpAddr	O	M	CM	-	M

4.3.20.3   Attribute constraints

Name	Definition
farEndNeIpAddr's write qualifier	When the EP_RP_EPS object belongs to a different Domain Manager than the NE pointed by the farEndNeIpAddr attribute, the Write Qualifier of farEndNeIpAddr attribute is needed.

4.3.20.4   Notifications

The common notifications defined in subclause 4.1.6 of 3GPP TS 28.622[6] are valid for this IOC, without exceptions or additions.

4.3.21   ExternalServingGWFunction

4.3.21.1   Definition

This IOC represents SGW functionality controlled by another IRPAgent. For more information about the SGW, see 3GPP TS 23.401 [9].

4.3.21.2   Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
id	M	M	-	-	M
pLMNIdList	M	M	M	-	M
tACList	M	M	M	-	M

4.3.22   ExternalMMEFunction

4.3.22.1   Definition

This IOC represents MME functionality controlled by another IRPAgent. For more information about the MME, see 3GPP TS 23.401 [9].

4.3.22.2   Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
id	M	M	-	-	M
pLMNIdList	M	M	M	-	M
mMEC	M	M	M	-	M
Attribute related to role					
mMEPool	M	M	M	-	M

4.3.23 IOC QCISet

4.3.23.1   Definition

This IOC represents a set of QCI as defined in section 6.1.7.2 of TS 23.203 [19].

4.3.23.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
id	M	M	-	-	M
qCIList	M	M	M	-	M

4.3.23.3 Attribute constraints

Null.

4.3.23.4 Notifications

Name	Qualifier	Notes
notifyAttributeValueChange	See Kernel CM IRP (3GPP TS 32.662 [13])	
notifyObjectCreation	See Kernel CM IRP (3GPP TS 32.662 [13])	
notifyObjectDeletion	See Kernel CM IRP (3GPP TS 32.662 [13])	

4.3.24 MBMSGWFunction

4.3.24.1 Definition

This IOC represents MBMS GW functionality. For more information about the MBMS GW, see 3GPP TS 36.300 [16].

4.3.24.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
id	M	M	-	-	M

4.3.25 Link_MBMSGW_ENB

4.3.25.1 Definition

This IOC represents the M1 reference point as defined in 3GPP TS 36.300 [16].

4.4 Attribute definitions

4. 4.1 Attribute properties

The following table defines the attributes that are present in several Information Object Classes (IOCs) of the present document.

Attribute Name	Documentation and Allowed Values	Properties
`farEndNeIpAddr`	The IP address(es) of the far end network entity to which the reference point is related. The IP address can be either IPv4 or IPv6.	type: String multiplicity: 1..* isOrdered: N/A isUnique: N/A defaultValue: None allowedValues: N/A isNullable: True
`mMEC`	MME Identifier (MMEI) is constructed from an MME Group ID (MMEGI) and an MME Code (MMEC). The MMEC is unique within the MME pool area and, if overlapping pool areas are in use, unique within the area of overlapping MME pools. (Ref. 3GPP TS 23.003[14])	type: Integer multiplicity: 1 isOrdered: N/A isUnique: N/A defaultValue: None isNullable: True
`mMEGI`	MME Identifier (MMEI) is constructed from an MME Group ID (MMEGI) and an MME Code (MMEC). The MMEGI is the unique identity of MME Pool within the context of PLMN. (Ref.3GPP TS 23.003[14]). Note: An UE, supported by a cell, can connect to one out of a group of MMEs. The group consists of the MMEs supporting the tracking area for the cell limited to those that are connected to the serving eNB. The MME is identified by the combination PLMNID-MMEGI-MMEC. The combination is called GUMMEI.	type: Integer multiplicity: 1 isOrdered: N/A isUnique: N/A defaultValue: None isNullable: True
`pLMNIdList`	It is a list of PLMN-Id, PLMN-Id= Mobile Country Codes (MCC)|| Mobile Network Codes(MNC) (Ref. 3GPP TS 23.003[14]) The `MMEPoolArea.pLMNIdList` purpose is to identify the PLMNs (related to `MMEFunction`) the MME Pool is serving. The `MMEEunction.pLMNIdList` purpose is as following. One operator may have several PLMN Ids and accordingly RAN broadcasts these Ids to enable UEs of different PLMN (i.e, UEs with different MNC in their IMSIs) to access its network. If CN node does not know this PLMN list, UEs of different PLMN than the one combined in MME might be treated as UEs from other operators. This will affect Location Update and Inter-MME handover procedures, and also the changing rate. allowedValues: A list of at most six entries of PLMN Identifiers. The PLMN Identifier is composed of a Mobile Country Code (MCC) and a Mobile Network Code (MNC).	type: Integer multiplicity: 1..* isOrdered: N/A isUnique: N/A defaultValue: None allowedValues: N/A isNullable: True

`qCIList`	It is a list of QCI characteristic, which is a structure including the element QCI, Resource_Type, Priority, Packet_Delay_Budget and Packet_Error_Loss_Rate; Wherein - QCI representing the number of the QCI, is an integer; - Resource_Type representing the Resource Type(GBR or Non-GBR) of the QC; - Priority representing the Priority of QCI, is an integer; - Packet_Delay_Budget representing the Packet Delay Budget of the QCI, is an integer with the unit of millisecond(ms); - Packet_Error_Loss_Rate representing the Packet Error Loss Rate of the QCI, is a real. (Ref.3GPP TS 23.203[x])	Refer to 3GPP TS 23.203[19]
`tACList`	It is the list of TAC of the `MMEPoolArea that is used for traffic handling. Each TAC is provisioned over the S1 interface from the eNodeB`, Ref 3GPP TS 36.413[18]. Note: A cell can only broadcast one TAC. See TS 36.300 v8.4.0 [16], section 10.1.7 (PLMNID and TAC relation). The Tracking Area Identity is constructed from the MCC (Mobile Country Code), MNC (Mobile Network Code) and TAC (Tracking Area Code). (Ref.3GPP TS 23.401[9])	type: Integer multiplicity: 1..* isOrdered: N/A isUnique: N/A defaultValue: None allowedValues: N/A isNullable: True
Attribute Name related to role	**Documentation and Allowed Values**	**Properties**
`mMEPool`	It is the DN of a MMEPool instance. allowedValues: N/A	type: DN multiplicity: 1 isOrdered: N/A isUnique: True defaultValue: None isNullable: True
`mMEPoolArea`	It is the DN of a MMEPoolArea instance. allowedValues: N/A	type: DN multiplicity: 1 isOrdered: N/A isUnique: True defaultValue: None isNullable: True
`mMEPoolMemberList`	It is the list of DNs of MMEFunction instances of the MMEPool. allowedValues: N/A	type: DN multiplicity: 1 isOrdered: N/A isUnique: True defaultValue: None isNullable: True

4.5   Common notifications

4.5.1   Alarm notifications

This clause presents a list of notifications, defined in [3], that IRPManager can receive. The notification header attribute `objectClass/objectInstance`, defined in [20], would capture the DN of an instance of an IOC defined in this IRP specification.

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [3])	
notifyAlarmListRebuilt	See Alarm IRP (3GPP TS 32.111-2 [3])	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [3])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [3])	
notifyComments	See Alarm IRP (3GPP TS 32.111-2 [3])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [3])	
notifyPotentialFaultyAlarmList	See Alarm IRP (3GPP TS 32.111-2 [3])	

4.5.2   Configuration notifications

This clause presents a list of notifications, defined in [12], that IRPManager can receive. The notification header attribute `objectClass/objectInstance`, defined in [20], would capture the DN of an instance of an IOC defined in this IRP specification.

Name	Qualifier	Notes
`notifyAttributeValueChange`	See Kernel CM IRP (3GPP TS 32.662 [13])	
`notifyObjectCreation`	See Kernel CM IRP (3GPP TS 32.662 [13])	
`notifyObjectDeletion`	See Kernel CM IRP (3GPP TS 32.662 [13])	

Annex A (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
2012-11					First draft		0.1.0
2012-12	SA#58				Presented for information and approval	0.1.0	1.0.0
2012-12					New version after approval	1.0.0	11.0.0

History

Document history		
V11.0.0	January 2013	Publication