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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:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
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- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

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:

28.704: IP Multimedia Subsystem (IMS) Network Resource Model (NRM) Integration Reference Point (IRP): Requirements

28.705: IP Multimedia Subsystem (IMS) Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)

28.706: IP Multimedia Subsystem (IMS) Network Resource Model (NRM) Integration Reference Point (IRP): Solution Set (SS) definitions

1 Scope

The present document specifies the IP Multimedia Subsystem (IMS) network resource information that can be communicated between an IRPAgent and an IRPManager for telecommunication network management purposes, including management of converged networks.

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.

The IMS 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 protocol neutral IMS NRM IRP: Information Service (IS). It reuses relevant parts of the Generic NRM IRP: IS in 3GPP TS 28.622 [9], either by direct reuse or sub-classing, and in addition to that defines IMS specific Information Object Classes.

Finally, in order to access the information defined by this NRM, an Interface IRP is needed, such as the Basic CM IRP in 3GPP TS 32.602 [10]. However, which Interface IRP that 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 32.662: "Telecommunication management; Configuration Management (CM); Kernel CM IRP Information Service (IS)".

[4] 3GPP TS 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions".

[5] 3GPP TS 32.111-2: "Telecommunication management; Fault Management; Part 2: Alarm Integration Reference Point: Information Service (IS)".

[6] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".

[7] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".

[8] 3GPP TS 23.002: "Network architecture".

[9] 3GPP TS 28.622: "Telecommunication management; Generic Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)"

[10] 3GPP TS 32.602: "Telecommunication management; Configuration Management (CM); Basic Configuration Management Integration Reference Point (IRP): Information Service (IS)".

[11] 3GPP TS 28.702: "Telecommunication management; Configuration Management (CM); Core Network (CN) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

[12] 3GPP TS 32.156: "Telecommunication management; Fixed Mobile Convergence (FMC) Model Repertoire".

[13] ITU-T Recommendation X.710 (1991): "Common Management Information Service Definition for CCITT Applications".

[14] 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 [7] and the following apply:

Association: See definition in TS 28.622 [9].

Managed Element (ME): See definition in TS 28.622 [9].

Managed Object (MO): See definition in TS 28.622 [9].

Management Information Model (MIM): See definition in TS 28.622 [9].

Network Resource Model (NRM): See definition in TS 28.622 [9].

3.2 Abbreviations

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

AUC	AUthentication Centre
AS	Application Server
BG	Border Gateway
BGCF	Breakout Gateway Control Function
BS	Billing System
CBC	Cell Broadcast Center
CGF	Charging Gateway Functionality
CN	Core Network
DN	Distinguished Name (see 3GPP TS 32.300 [6])
ECSCF	Emergency Call Session Control Function
EIR	Equipment Identity Register
EM	Element Manager
FM	Fault Management
FNR	Flexible Number Register
GDMO	Guidelines for the Definition of Managed Objects
GGSN	Gateway GPRS Support Node
GMLC	Gateway Mobile Location Center
GMSC Server	Gateway MSC Server
GMSC	Gateway MSC
GPRS	General Packet Radio System
ICSCF	Interrogating Call Session Control Function
IDL	Interface Definition Language

IMS	IP Multimedia Subsystem
IMSMGW	IMS Media Gateway
IOC	Information Object Class
IRP	Integration Reference Point
ISO	International Standards Organization
IWF	InterWorking Function
ME	Managed Element
MGCF	Media Gateway Control Function
MGW	Media GateWay
MNP-SRF	Mobile Number Portability-Signalling Relay Function
MO	Managed Object
MOI	Managed Object Instance
MRFC	Multimedia Resource Function Controller
MRFP	Multimedia Resource Function Processor
MSC Server	Mobile Services Switching Centre Server
MSC	Mobile Services Switching Centre
NE	Network Element
NM	Network Manager
NPDB	Number Portability DataBase
NR	Network Resource
NRM	Network Resource Model
OSI	Open Systems Interconnection
PCSCF	Proxy Call Session Control Function
PM	Performance Management
RDN	Relative Distinguished Name (see 3GPP TS 32.300 [6])
SCF	Service Control Function
SCSCF	Serving Call Session Control Function
SGSN	Serving GPRS Support Node
SGW	Signalling GateWay
SLF	Subscription Locator Function
SMLC	Serving Mobile Location Center
SMS	Short Message Service
SMS-GMSC	SMS Gateway MSC
SMS-IWMSC	SMS InterWorking MSC
SRF	Specialized Resource Function
SSF	Service Switching Function
TMN	Telecommunications Management Network
UML	Unified Modelling Language
UMTS	Universal Mobile Telecommunications System
UTRAN	Universal Terrestrial Radio Access Network
VLR	Visitor Location Register

4 Model

4.1 Imported information entities and local labels

Label reference	Local label
28.622 [9], information object class, `Link`	`Link`
28.622 [9], information object class, `ManagedElement`	`ManagedElement`

4.2 Class diagram

4.2.1 Relationships

This clause depicts the set of classes (e.g. IOCs) that encapsulates the information relevant for this IRP. 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.

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.

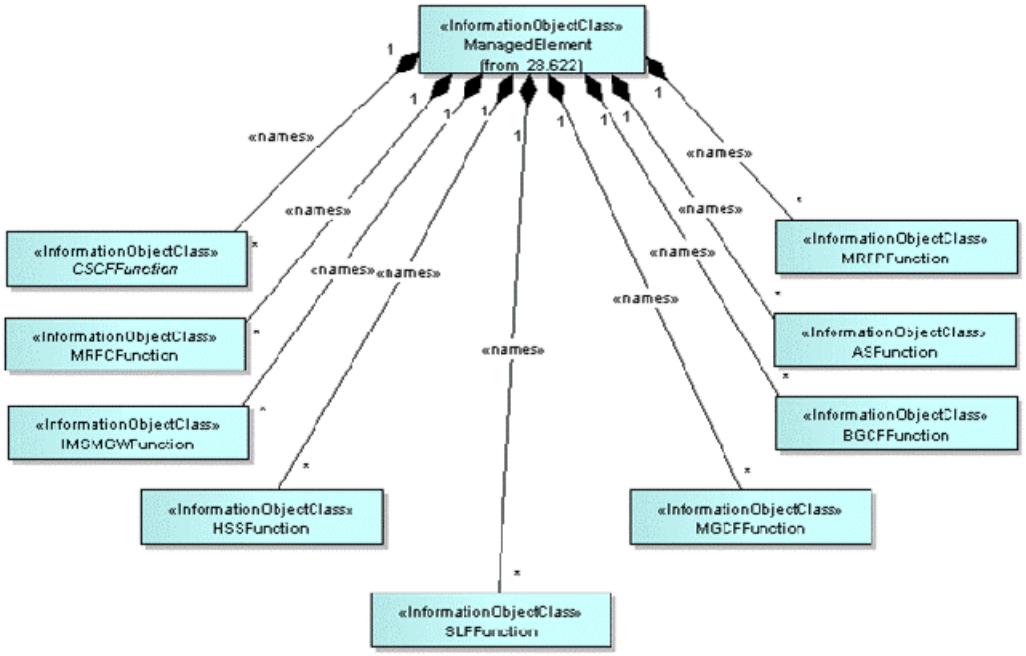
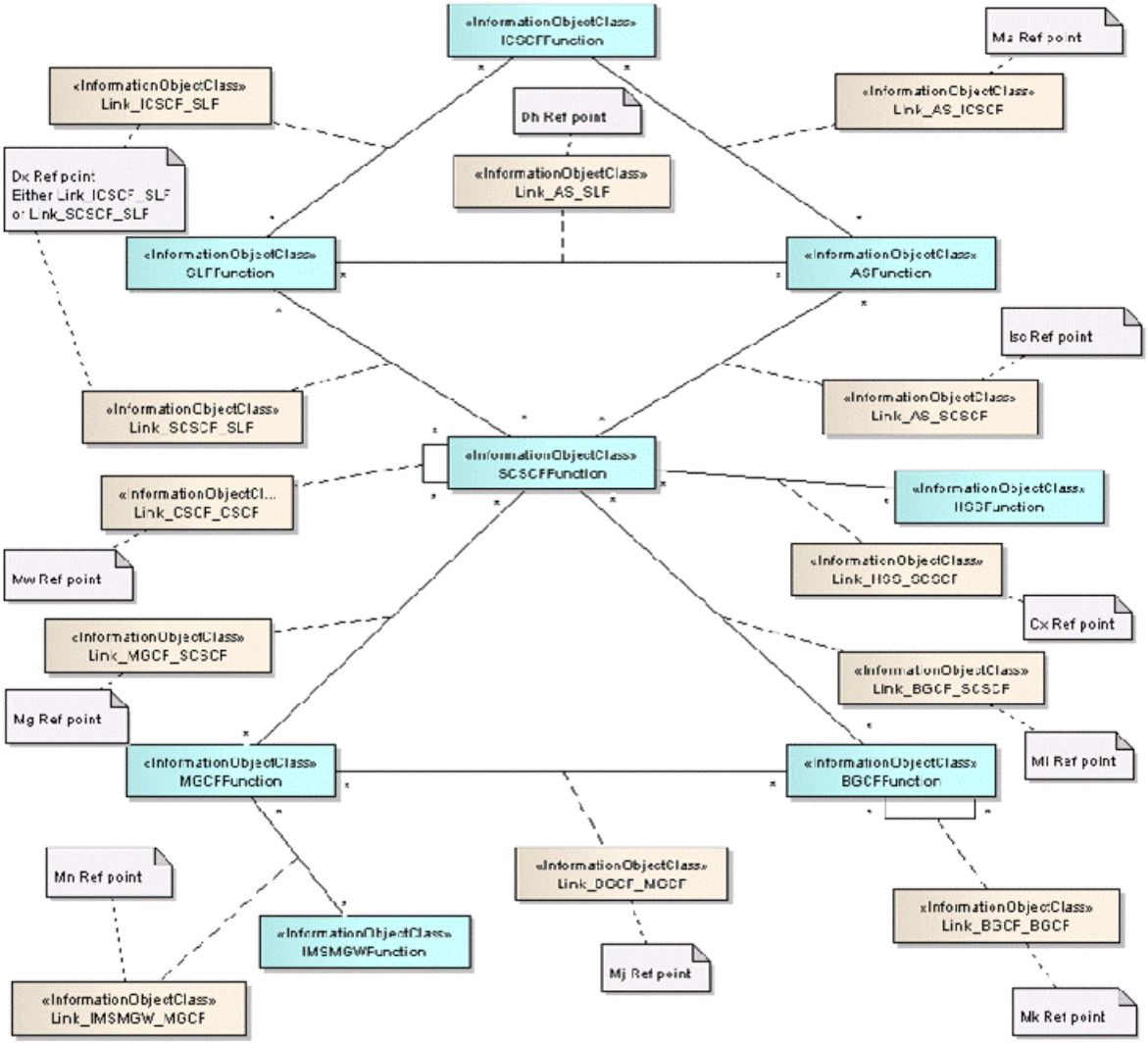


Figure 4.2.1.1: IMS NRM Containment/Naming relationships



Note: If this NRM has interfaces (Link IOCs) modelled to IOCs in other NRM(s), the Link IOC definitions may be defined in the other NRM(s) and need to be considered in implementations.

Figure 4.2.1.2: IMS NRM `Link` Associations 1

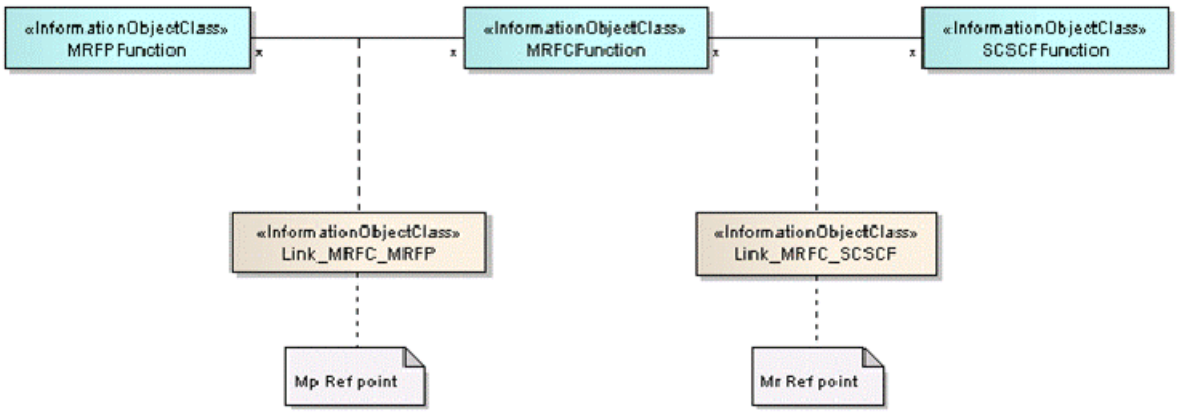


Figure 4.2.1.3: IMS NRM `Link` Associations 2

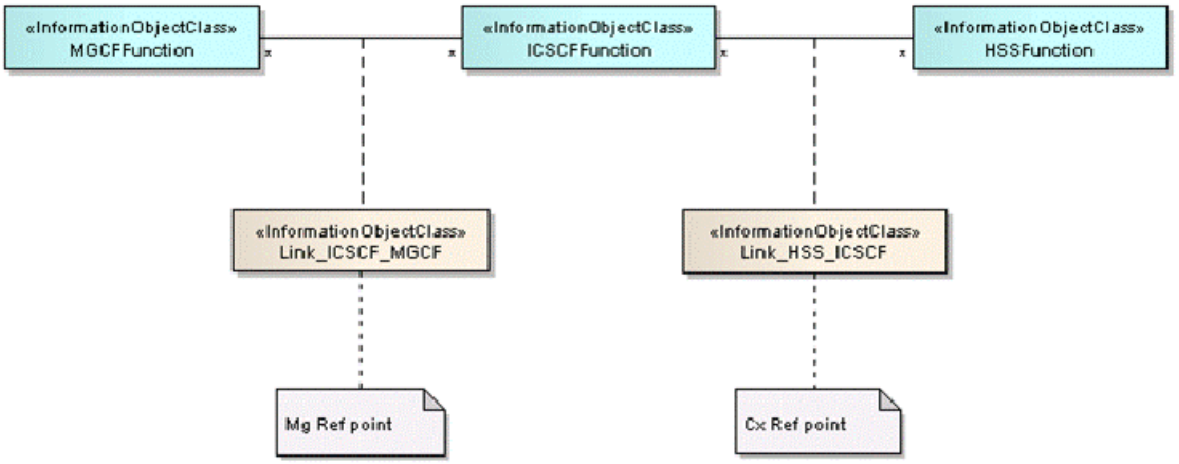


Figure 4.2.1.4: IMS NRM `Link` Associations 3

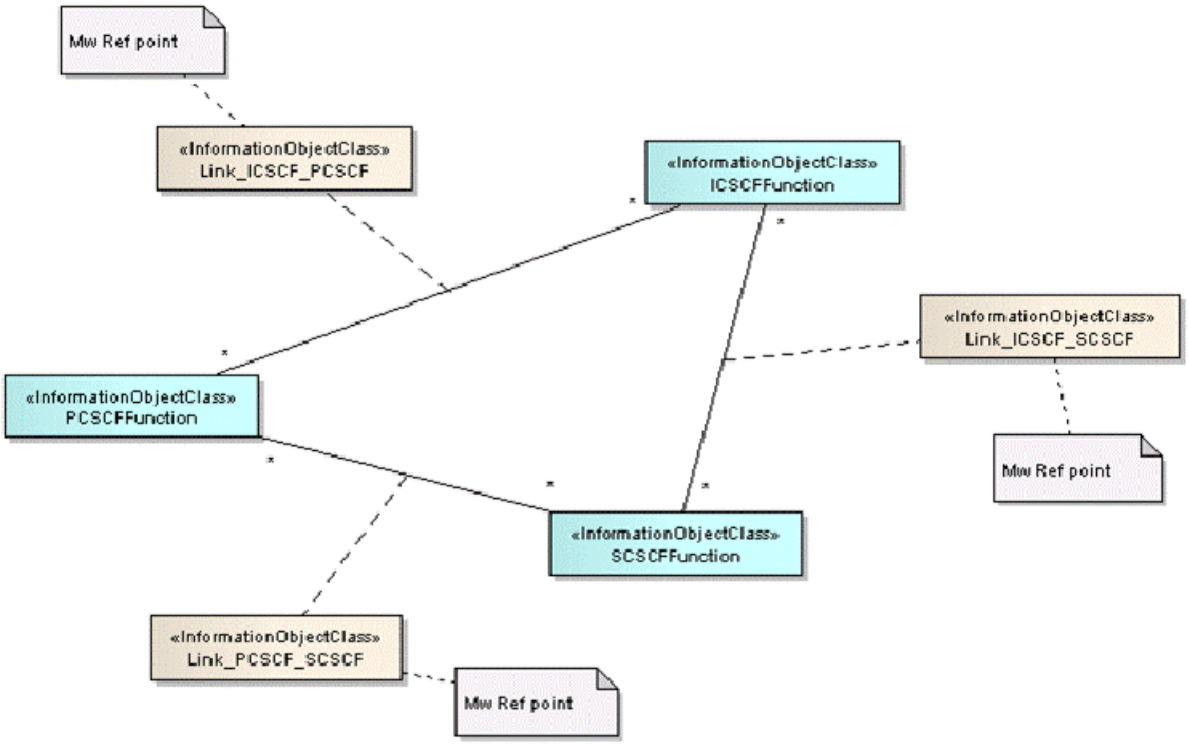


Figure 4.2.1.5: IMS NRM `Link` Associations 4

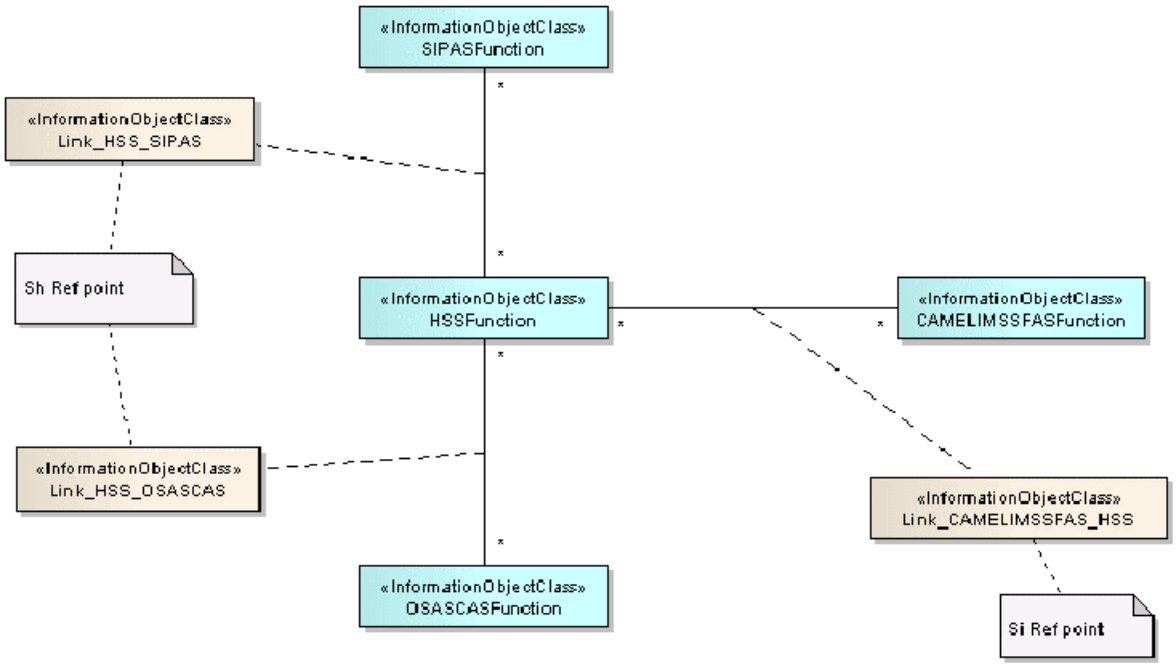


Figure 4.2.1.6: IMS NRM `Link` Associations 5

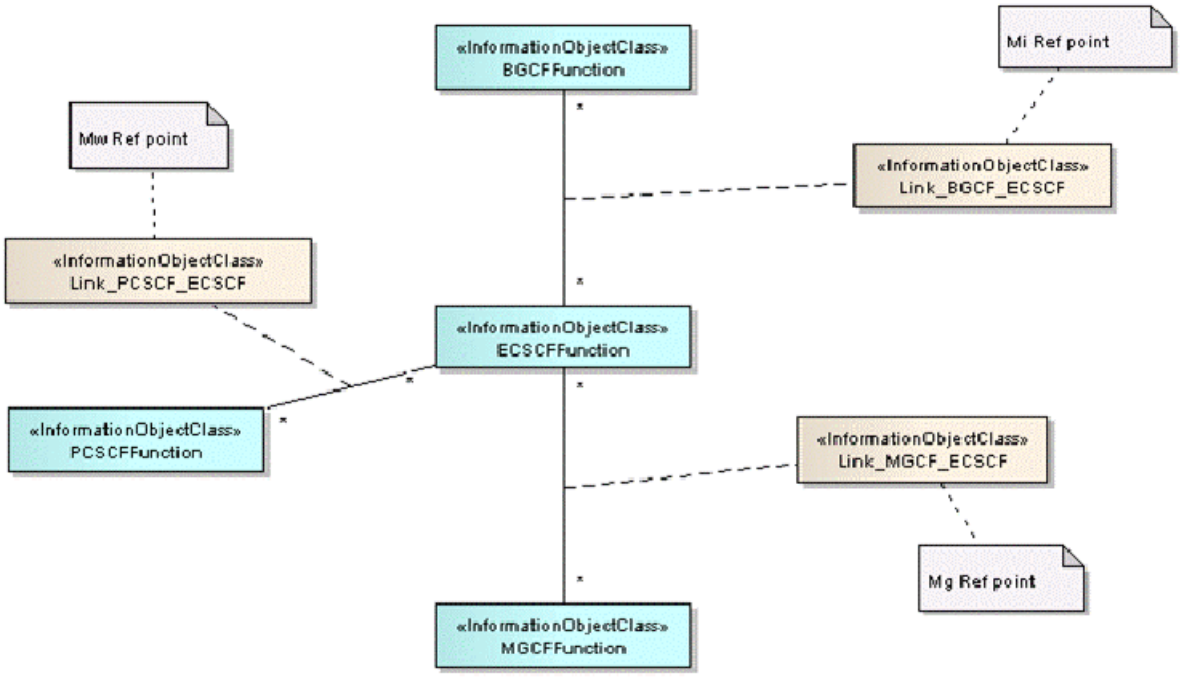


Figure 4.2.1.7: IMS NRM `Link` Associations 6

4.2.2 Inheritance

This clause depicts the inheritance relationships that exist between IOCs.

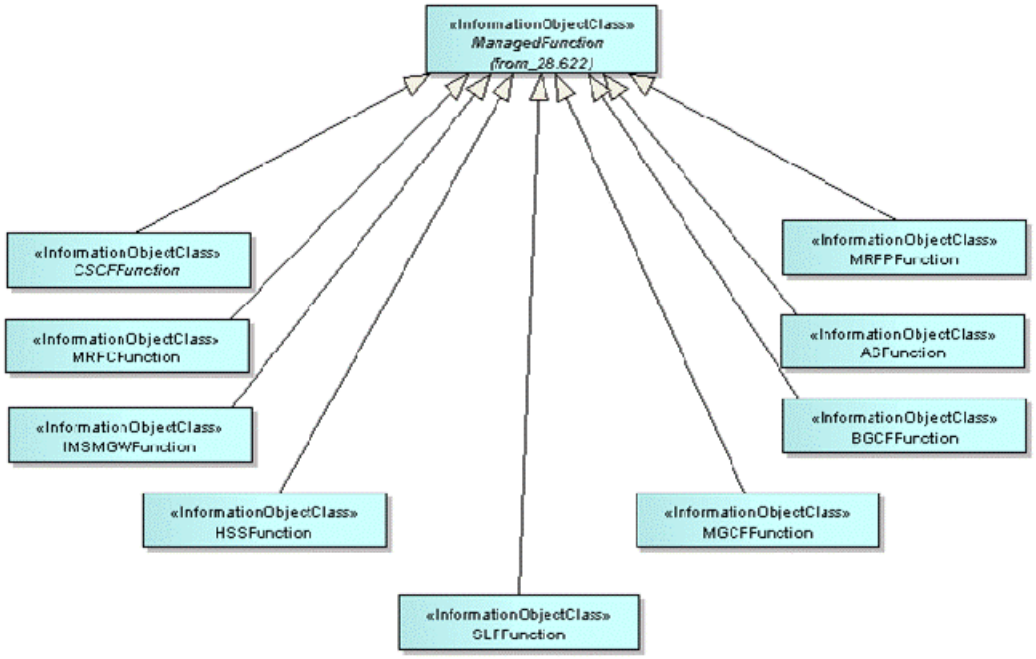


Figure 4.2.2.1: IMS NRM Inheritance Hierarchy 1

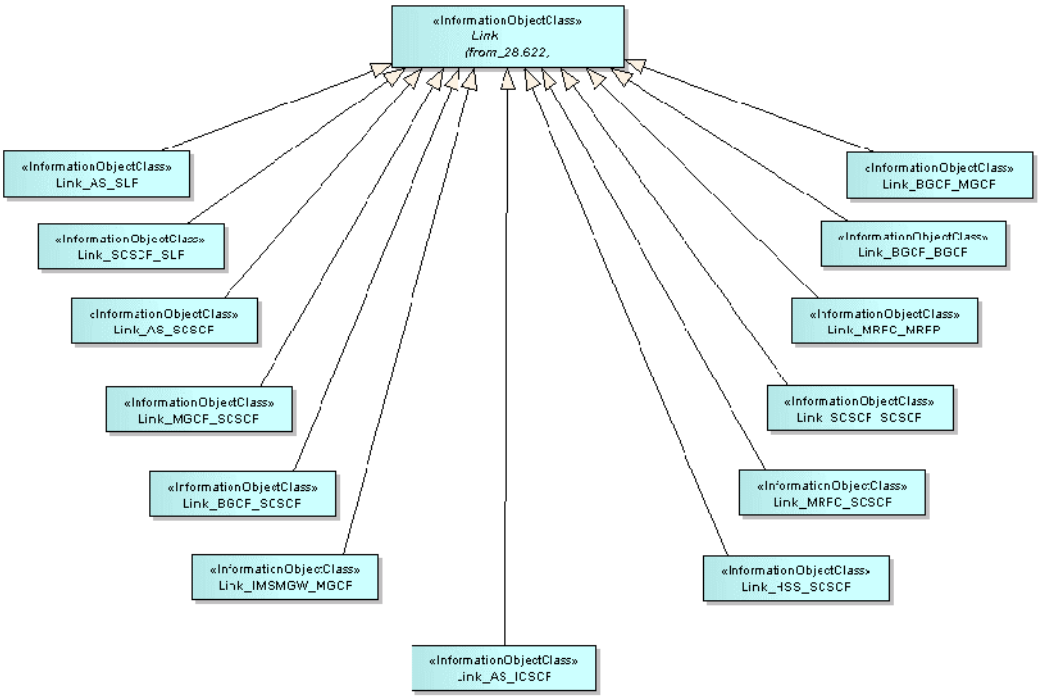


Figure 4.2.2.2: IMS NRM Inheritance Hierarchy 2

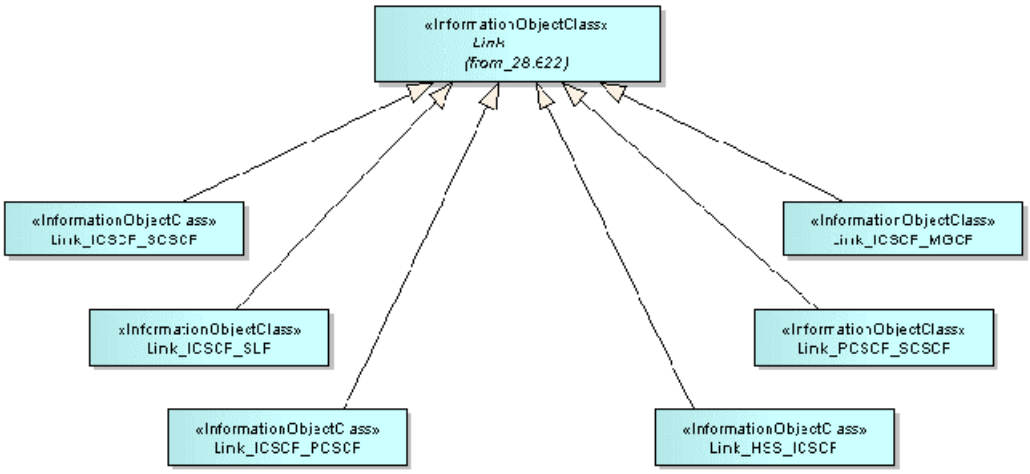


Figure 4.2.2.3: IMS NRM Inheritance Hierarchy 3

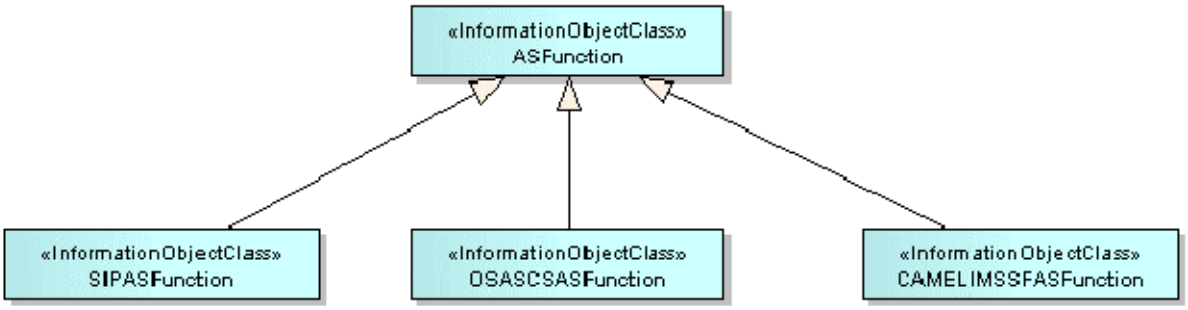


Figure 4.2.2.4: IMS NRM Inheritance Hierarchy 4

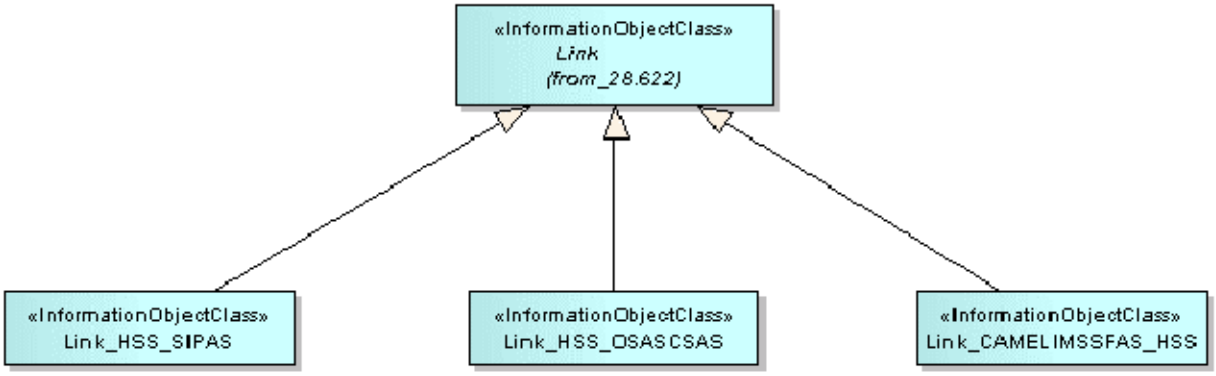


Figure 4.2.2.5: IMS NRM Inheritance Hierarchy 5

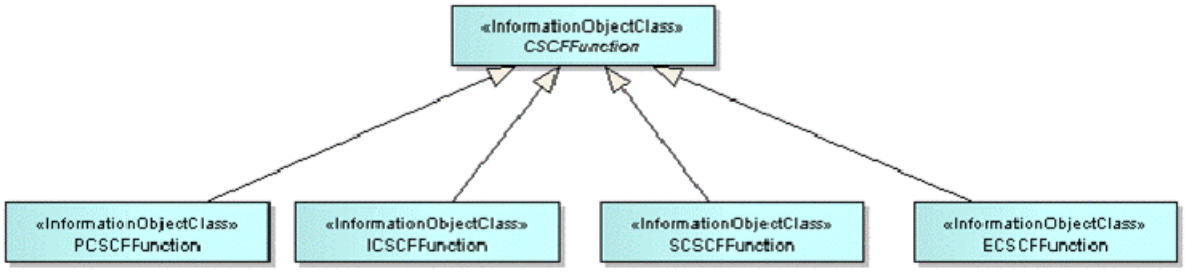


Figure 4.2.2.6: IMS NRM Inheritance Hierarchy 6

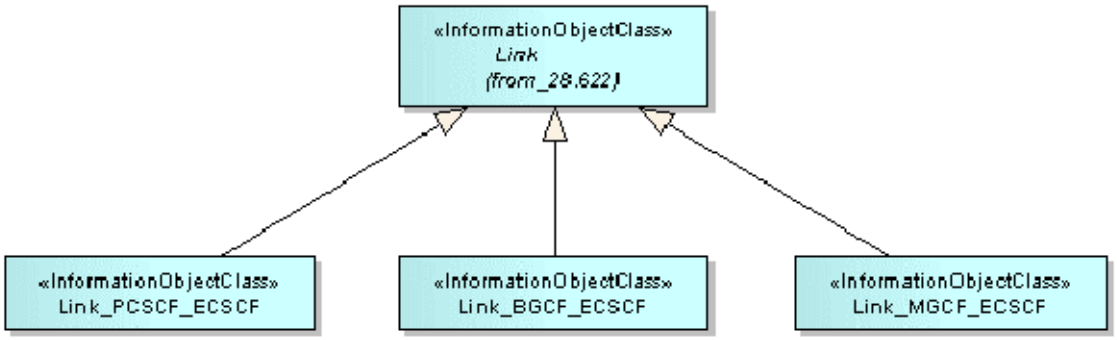


Figure 4.2.2.7: IMS NRM Inheritance Hierarchy 7

4.3 Class definitions

4.3.1 ASFunction

4.3.1.1 Definition

This IOC represents AS functionality. For more information about the AS, see 3GPP TS 23.002 [8]. ASFunction may be instantiated when a specific Application Server type is not already represented with an IOC subclassed from this IOC in this specification. If the Application Server type is already represented by an IOC in this specification, then it should instead be used. In the case a subclassed IOC is utilized, the ASFunction relationships (including link objects) are carried forward to the sub-classed IOC through inheritance.

4.3.1.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
linkList	O	M	-	-	M

4.3.1.3 Attribute constraints

There is no attribute constraint defined.

4.3.1.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.2 BGCFFunction

4.3.2.1 Definition

This IOC represents BGCF functionality. For more information about the BGCF, see 3GPP TS 23.002 [8].

4.3.2.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
linkList	O	M	-	-	M

4.3.2.3 Attribute constraints

There is no attribute constraint defined.

4.3.2.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.3 CAMELIMSSFASFunction

4.3.3.1 Definition

This IOC represents CAMEL IM-SSF AS functionality. For more information about the CAMEL IM-SSF AS, see 3GPP TS 23.002 [8].

4.3.3.2 Attributes

None.

4.3.3.3 Attribute constraints

There is no attribute constraint defined.

4.3.3.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.4 CSCFFunction

4.3.4.1 Definition

This IOC represents CSCF functionality. For more information about the CSCF, see 3GPP TS 23.002 [8].

This IOC cannot be instantiated. It is defined for sub-classing purposes.

4.3.4.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
linkList	O	M	-	-	M

4.3.4.3 Attribute constraints

There is no attribute constraint defined.

4.3.4.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.5 HSSFunction

4.3.5.1 Definition

This IOC represents HSS functionality. For more information about the HSS, see 3GPP TS 23.002 [8].

4.3.5.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
linkList	O	M	-	-	M

4.3.5.3 Attribute constraints

There is no attribute constraint defined.

4.3.5.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.6 ICSCFFunction

4.3.6.1 Definition

This IOC represents I-CSCF functionality. For more information about the I-CSCF, see 3GPP TS 23.002 [8].

4.3.6.2 Attributes

None.

4.3.6.3 Attribute constraints

There is no attribute constraint defined.

4.3.6.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.7 IMSMGWFunction

4.3.7.1 Definition

This IOC represents IMS-MGW functionality. For more information about IMS-MGW, see 3GPP TS 23.002 [8].

4.3.7.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
linkList	O	M	-	-	M

4.3.7.3 Attribute constraints

There is no attribute constraint defined.

4.3.7.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.8 MGCFFunction

4.3.8.1 Definition

This IOC represents MGCF functionality. For more information about the MGCF, see 3GPP TS 23.002 [8].

4.3.8.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
linkList	O	M	-	-	M

4.3.8.3 Attribute constraints

There is no attribute constraint defined.

4.3.8.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.9 MRFCFunction

4.3.9.1 Definition

This IOC represents MRFC functionality. For more information about the MRFC, see 3GPP TS 23.002 [8].

4.3.9.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
linkList	O	M	-	-	M

4.3.9.3 Attribute constraints

There is no attribute constraint defined.

4.3.9.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.10 MRFPFunction

4.3.10.1 Definition

This IOC represents MRFP functionality. For more information about the MRFP, see 3GPP TS 23.002 [8].

4.3.10.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
linkList	O	M	-	-	M

4.3.10.3 Attribute constraints

There is no attribute constraint defined.

4.3.10.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.11 OSASCSASFunction

4.3.11.1 Definition

This IOC represents OSA Application Server (Service Capability Server) functionality. For more information about the OSA Service Capability Server, see 3GPP TS 23.002 [8].

4.3.11.2 Attributes

None.

4.3.11.3 Attribute constraints

There is no attribute constraint defined.

4.3.11.4 Notifications

There is no notification defined.

4.3.12 PCSCFFunction

4.3.12.1 Definition

This IOC represents P-CSCF functionality. For more information about the P-CSCF, see 3GPP TS 23.002 [8].

4.3.12.2 Attributes

None.

4.3.12.3 Attribute constraints

There is no attribute constraint defined.

4.3.12.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.13 SCSFFunction

4.3.13.1 Definition

This IOC represents S-CSCF functionality. For more information about the S-CSCF, see 3GPP TS 23.002 [8].

4.3.13.2 Attributes

None.

4.3.13.3 Attribute constraints

There is no attribute constraint defined.

4.3.13.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.14 SIPASFunction

4.3.14.1 Definition

This IOC represents SIP AS functionality. For more information about the SIP AS, see 3GPP TS 23.002 [8].

4.3.14.2 Attributes

None.

4.3.14.3 Attribute constraints

There is no attribute constraint defined.

4.3.14.4 Notifications

There is no notification defined.

4.3.15 SLFFunction

4.3.15.1 Definition

This IOC represents SLF functionality. For more information about the SLF, see 3GPP TS 23.002 [8].

4.3.15.2 Attributes

Attribute Name	Support Qualifier	isReadable	isWritable	isInvariant	isNotifyable
linkList	O	M	-	-	M

4.3.15.3 Attribute constraints

There is no attribute constraint defined.

4.3.15.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.16 ECSCFFunction

4.3.16.1 Definition

This IOC represents E-CSCF functionality. For more information about the E-CSCF, see 3GPP TS 23.002 [8].

4.3.16.2 Attributes

None.

4.3.16.3 Attribute constraints

There is no attribute constraint defined.

4.3.16.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.17 Link_AS_ICSCF

4.3. 17.1 Definition

This IOC models the Ma reference point as defined in TS 23.002 [8].

4.3.17.2 Attributes

None.

4.3.17.3 Attribute constraints

There is no attribute constraint defined.

4.3.17.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.18 Link_AS_SCSCF

4.3.18.1 Definition

This IOC models the Isc reference point as defined in TS 23.002 [8].

4.3.18.2 Attributes

None.

4.3.18.3 Attribute constraints

There is no attribute constraint defined.

4.3.18.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.19 Link_AS_SLF

4.3.19.1 Definition

This models the Dh reference point as defined in TS 23.002 [8].

4.3.19.2 Attributes

None.

4.3.19.3 Attribute constraints

There is no attribute constraint defined.

4.3.19.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.20 Link_BGCF_BGCF

4.3.20.1 Definition

This models the Mk reference point as defined in TS 23.002 [8].

4.3.20.2 Attributes

None.

4.3.20.3 Attribute constraints

There is no attribute constraint defined.

4.3.20.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.21 Link_BGCF_MGCF

4.3.21.1 Definition

This models the Mj reference point as defined in TS 23.002 [8].

4.3.21.2 Attributes

None.

4.3.21.3 Attribute constraints

There is no attribute constraint defined.

4.3.21.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.22 Link_BGCF_SCSCF

4.3.22.1 Definition

This models the Mi reference point as defined in TS 23.002 [8].

4.3.22.2 Attributes

None.

4.3.22.3 Attribute constraints

There is no attribute constraint defined.

4.3.22.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.23 Link_HSS_ICSCF

4.3.23.1 Definition

This IOC models the Cx reference point as defined in TS 23.002 [8].

4.3.23.2 Attributes

None.

4.3.23.3 Attribute constraints

There is no attribute constraint defined.

4.3.23.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.24 Link_ICSCF_SCSCF

4.3.24.1 Definition

This models the Mw reference point as defined in TS 23.002 [8].

4.3.24.2 Attributes

None.

4.3.24.3 Attribute constraints

There is no attribute constraint defined.

4.3.24.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.25 Link_ICSCF_MGCF

4.3.25.1 Definition

This IOC models the Mg reference point as defined in TS 23.002 [8].

4.3.25.2 Attributes

None.

4.3.25.3 Attribute constraints

There is no attribute constraint defined.

4.3.25.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.26 Link_ICSCF_PCSCF

4.3.26.1 Definition

This models the Mw reference point as defined in TS 23.002 [8].

4.3.26.2 Attributes

None.

4.3.26.3 Attribute constraints

There is no attribute constraint defined.

4.3.26.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.27 Link_PCSCF_SCSCF

4.3.27.1 Definition

This models the Mw reference point as defined in TS 23.002 [8].

4.3.27.2 Attributes

None.

4.3.27.3 Attribute constraints

There is no attribute constraint defined.

4.3.27.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.28 Link_CAMELIMSSFAS_HSS

4.3.28.1 Definition

This IOC models the Si reference point between CAMEL Application Server (IM-SSF) and HSS as defined in TS 23.002 [8].

4.3.28.2 Attributes

None.

4.3.28.3 Attribute constraints

There is no attribute constraint defined.

4.3.28.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.29 Link_HSS_OSASCSAS

4.3.29.1 Definition

This IOC models the Sh reference point between OSA Application Server (Service Capability Server) and HSS as defined in TS 23.002 [8].

4.3.29.2 Attributes

None.

4.3.29.3 Attribute constraints

There is no attribute constraint defined.

4.3.29.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.30 Link_HSS_SCSCF

4.3.30.1 Definition

This IOC models the Cx reference point as defined in TS 23.002 [8].

4.3.30.2 Attributes

None.

4.3.30.3 Attribute constraints

There is no attribute constraint defined.

4.3.30.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.31 Link_HSS_SIPAS

4.3.31.1 Definition

This IOC models the Sh reference point between SIP Application Server and HSS as defined in TS 23.002 [8].

4.3.31.2 Attributes

None.

4.3.31.3 Attribute constraints

There is no attribute constraint defined.

4.3.31.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.32 Link_ICSCF_SLF

4.3.32.1 Definition

This models the Dx reference point as defined in TS 23.002 [8].

4.3.32.2 Attributes

None.

4.3.32.3 Attribute constraints

There is no attribute constraint defined.

4.3.32.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.33 Link_IMSMGW_MGCF

4.3.33.1 Definition

This models the Mn reference point as defined in TS 23.002 [8].

4.3.33.2 Attributes

None.

4.3.33.3 Attribute constraints

There is no attribute constraint defined.

4.3.33.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.34 Link_MGCF_SCSCF

4.3.34.1 Definitions

This models the Mg reference point as defined in TS 23.002 [8].

4.3.34.2 Attributes

None.

4.3.34.3 Attribute constraints

There is no attribute constraint defined.

4.3.34.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.35 Link_MRFC_MRFP

4.3.35.1 Definition

This IOC models the Mp reference point as defined in TS 23.002 [8].

4.3.35.2 Attributes

None.

4.3.35.3 Attribute constraints

There is no attribute constraint defined.

4.3.35.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.36 Link_MRFC_SCSCF

4.3.36.1 Definition

This IOC models the Mr reference point as defined in TS 23.002 [8].

4.3.36.2 Attributes

None.

4.3.36.3 Attribute constraints

There is no attribute constraint defined.

4.3.36.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.37 Link_SCSCF_SCSCF

4.3.37.1 Definition

This models the Mw reference point as defined in TS 23.002 [8].

4.3.37.2 Attributes

None.

4.3.37.3 Attribute constraints

There is no attribute constraint defined.

4.3.37.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.38 Link_SCSCF_SLF

4.3.38.1 Definition

This IOC models the Dx reference point as defined in TS 23.002 [8].

4.3.38.2 Attributes

None.

4.3.38.3 Attribute constraints

There is no attribute constraint defined.

4.3.38.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.39 Link_PCSCF_ECSCF

4.3.39.1 Definition

This IOC models the Mw reference point as defined in TS 23.002 [8].

4.3.39.2 Attributes

None.

4.3.39.3 Attribute constraints

There is no attribute constraint defined.

4.3.39.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.40 Link_BGCF_ECSCF

4.3.40.1 Definition

This IOC models the Mi reference point as defined in TS 23.002 [8].

4.3.40.2 Attributes

None.

4.3.40.3 Attribute constraints

There is no attribute constraint defined.

4.3.40.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.3.41 Link_MGCF_ECSCF

4.3.41.1 Definition

This IOC models the Mg reference point as defined in TS 23.002 [8].

4.3.41.2 Attributes

None.

4.3.41.3 Attribute constraints

There is no attribute constraint defined.

4.3.41.4 Notifications

The common notifications defined in subclause 4.6 are valid for this IOC, without exceptions or additions.

4.4 Attribute definitions

4.4.1 Attribute properties

Attribute Name	Documentation and Allowed Values	Properties
linkList	An attribute containing all of the related link object Distinguished Names for the object instance, if any. allowedValues: N/A	type: DN multiplicity: 0..* isOrdered: False isUnique: True defaultValue: No default value isNullable: True

4.4.2 Constraints

None.

4.5 Common notifications

4.5.1 Alarm notifications

This clause presents a list of notifications, defined in [5], that IRPManager can receive. The notification header attribute objectClass/objectInstance, defined in [14], 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 [5])	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [5])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [5])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [5])	
notifyComments	See Alarm IRP (3GPP TS 32.111-2 [5])	
notifyAlarmListRebuilt	See Alarm IRP (3GPP TS 32.111-2 [5])	
notifyPotentialFaultyAlarmList	See Alarm IRP (3GPP TS 32.111-2 [5])	

4.5.2 Configuration notifications

This clause presents a list of notifications, defined in [3], that IRPManager can receive. The notification header attribute objectClass/objectInstance, defined in [14], would capture the DN of an instance of an IOC defined in this IRP specification.

Name	Qualifier	Notes
notifyAttributeValueChange	O	
notifyObjectCreation	O	
notifyObjectDeletion	O	

Annex A (informative): Change history

Change history								
Date	**TSG #**	**TSG Doc.**	**CR**	**R**	**Subject/Comment**	**Cat**	**Old**	**New**
Oct. 2012					First draft		--	0.1.0
Dic 2012	SA#58				Draft sent for Information and Approval		0.1.0	1.0.0
Dec 2012					New version after approval		1.0.0	11.0.0

History

Document history		
V11.0.0	January 2013	Publication