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Technical Specification

Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Network and Service Management; Network Resource Model; Part 2: Information Service

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN).

The present document is part 2 of a multi-part deliverable covering Network and Service Management; Network Resource Model, as identified below:

Part 1: "Requirements";

Part 2: "Information Service";

Part 3: "eXtensible Markup Language (XML) Schema definition".

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1 Scope

The present document identifies the Information Service for the manageable resources present in the NGN Transport and Service Layers.

The present document specifies the protocol neutral NGN Network Resource Model Information Service (IS). It reuses relevant parts of the IMS NRM IRP: IS in TS 132 732 [1] and the Generic NRM IRP: IS in TS 132 622 [2], either by direct reuse or sub-classing, and in addition to that defines NRM specific Information Object Classes.

This is the first version of the NGN Network Resource Model. The current version does not:

- capture all the attributes of the Network Resources. These will be addressed in future revisions of the present document;
- address the non-IMS based PSTN ISDN Emulation Subsystem, IPTV Subsystems and the additional Network Resources required supporting Emergency Calls. These will be added in future revisions of the present document;
- provide guidance on the permitted value ranges of Attributes.

This version of the NRM is linked to 3GPP NRM using naming and inheritance, however a need to link the NRM to the TeleManagement Forum's Shared Information Data Model (SID) has been identified and will be addressed in future revisions of the present document. A comparison of 3GPP and SID inheritance is contained in annex A.

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2 References

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

- For a specific reference, subsequent revisions do not apply.
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    - if it is accepted that it will be possible to use all future changes of the referenced document for the purposes of the referring document;
    - for informative references.

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NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

[1] ETSI TS 132 732: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Telecommunication management; IP Multimedia Subsystem (IMS) Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS) (3GPP TS 32.732 Release 7)".

[2] ETSI TS 132 622: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP): Network Resource Model (NRM) (3GPP TS 32.622 Release 7)".

[3] ETSI ES 282 001: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); NGN Functional Architecture".

[4] ETSI ES 282 003: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Resource and Admission Control Sub-system (RACS); Functional Architecture".

[5] ETSI ES 282 004: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); NGN Functional Architecture; Network Attachment Sub-System (NASS)".

[6] ETSI TS 182 012: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IMS-based PSTN/ISDN Emulation Subsystem; Functional architecture".

[7] ETSI ES 282 007: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IP Multimedia Subsystem (IMS); Functional architecture".

2.2 Informative references

The following referenced documents are not essential to the use of the present document but they assist the user with regard to a particular subject area. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Not applicable.

3 Abbreviations

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

AGCF	Access Gateway Control Function
AMF	Access Management Function
A-MGF	Access Media Gateway Function
A-RACF	Access Resource and Admission Control Function
ARF	Access Relay Function
ASF Type 1	Application Server Function Type 1
ASF Type 2	Application Server Function Type 2
ASF	Application Server Function
BGCF	Border Gateway Control Function
BGF	Border Gateway Function
C-BGF	Core Border Gateway Function
CLF	Connectivity session Location and repository Function
CNGCF	Customer Network Gateway Configuration Function
CRM	Customer Relationship Management
CSCF	Call Server Control Function
IBCF	Interconnection Border Control Function
I-BGF	Interconnection Border Gateway Function
I-CSCF	Interrogating Call Server Control Function
IMS	IP Multimedia System
IM-SSF	IP Mulimedia Service Switching Function
INAP	IN Application Part
IOC	Information Object Class
IPTV	Internet Protocol TeleVision
IRP	Integration Reference Point
IS	Information Service
ISDN	Integrated Services Digital Network
IWF	InterWorking Function
ME	Managed Element
MGCF	Media Gateway Control Function
MGF	Media Gateway Function

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MRFC	Multimedia Resource Function Controller
MRFP	Multimedia Resource Function Processor
MTNM	Multi-Technology Network Management
NACF	Network Access Configuration Function
NASS	Network Attachment SubSystem
NGN	Next Generation Network
NOSI	NGN OSS Service Interface
NRM	Network Resource Module
OSA	Open Service Access
OSS	Operations Support System
PDBF	Profile Data Base Function
PES	PSTN/ISDN Emulation Subsystem
PSTN	Public Switched Telephony Network
RACS	Resource Admission Control Subsystem
RCEF	Resource Control Enforcement Function
RDN	Relative Distinguished Name
RM	Resource Management
SCS	Service capability Server
S-CSCF	Serving Call Server Control Function
SGF	Signalling Gateway Function
SID	Shared Information Data Model
SIP	Service Independent Protocol
SLF	Subscription Locator Function
SM	Service Management
SPDF	Service Policy Decision Function
TISPAN	Telecommunications and Internet converged Services and Protocols for Advanced Networking
TMF	TeleManagement Forum
T-MGF	Trunking Media Gateway Function
TMN	Telecommunications Management Network
UAAF	User Access Authorization Function
UML	Unified Modeling Language
UPSF	User profile service Function
XML	eXtensible Markup Language

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4 High Level Model

In this clause, a high level context for the TISPAN Network Resource Model is given. The section is organized with an initial textual description, followed by a general diagram which aims to depict a high level model of the Transport and Service layers of the NGN.

The goal of the NRM within the current TISPAN release is to model the manageable network resources within the NGN Service and Transport Layers.

The high level decomposition of the NGN Service and Transport Layer entities, as identified in the TISPAN Architecture documents, is illustrated in figure 4.1. The Network Resource Model provides a model of the manageable aspects of these entities.

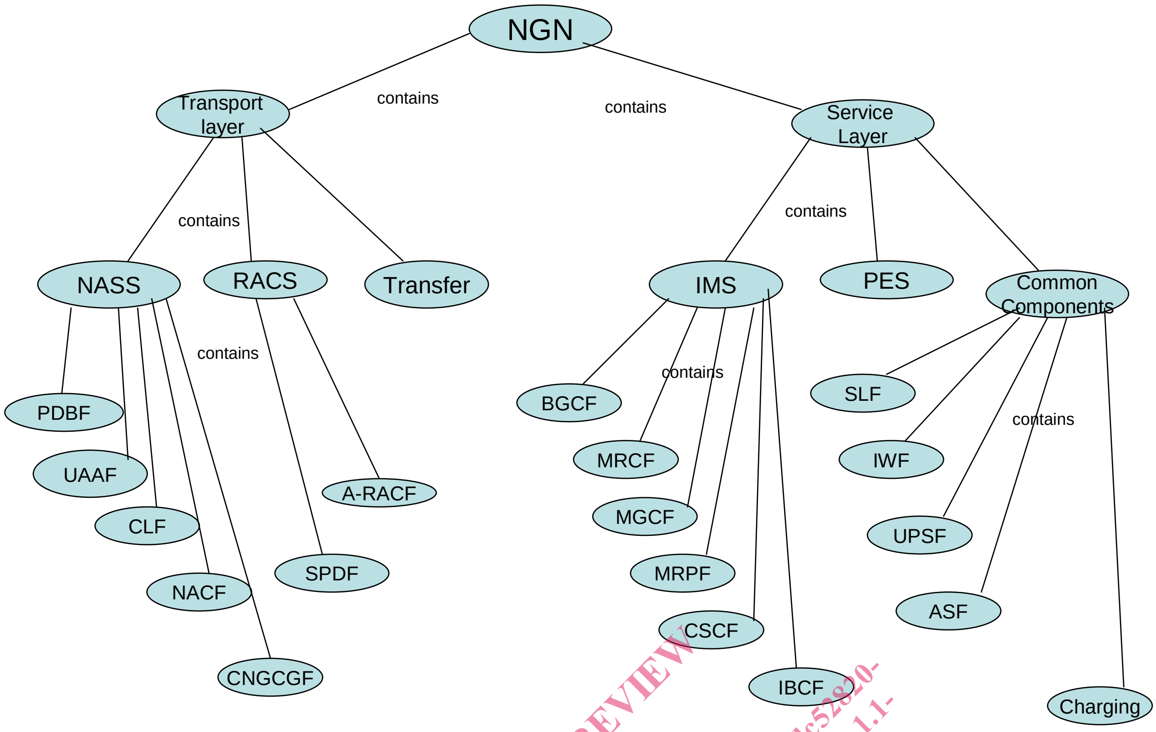

Figure 4.1: Decomposition of NGN Service and Transport Layers Entities

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It should be noted that the entities contained in the Transfer Subsystem and IMS based PSTN/ISDN Emulation Subsystem (PES) have not been shown to simplify figure 4.1. They are however included in the following clauses.

5 Information Object Classes

5.1 Imported information entities and local labels

This clause identifies a list of information entities (e.g. information object class, information relationship, information attribute) that have been defined in other specifications and that are imported in the present document. This includes information entities from other specifications imported for inheritance purpose. Each element of this list is a pair (label reference, local label). The label reference contains the name of the specification where it is defined, the type of the information entity and its name. The local label of imported information entities can then be used throughout the specification instead of the label reference.

This information is provided in table 5.1.1.

Table 5.1.1: Imported information entities and local labels

Label reference	Local label
TS 132 622 [2], information object class, Link (see note 1)	Link
TS 132 622 [2], information object class, ManagedElement	ManagedElement
TS 132 622 [2], information object class, ManagedFunction	ManagedFunction
TS 132 732 [1], information object class, CscfFunction (see note 10)	CscfFunction
TS 132 732 [1], information object class, IcscfFunction (see note 10)	IcscfFunction
TS 132 732 [1], information object class, PcscfFunction (see note 10)	PcscfFunction
TS 132 732 [1], information object class, ScscfFunction (see note 10)	ScscfFunction
TS 132 732 [1], information object class, BgcfFunction (see note 10)	BgcfFunction
TS 132 732 [1], information object class, MgcfFunction (see note 10)	MgcfFunction
TS 132 732 [1], information object class, MrfcFunction (see note 10)	MrfcFunction
TS 132 732 [1], information object class MrfpFunction (see note 10)	MrfpFunction
TS 132 732 [1], information object class ImsMGwFunction (see note 10)	ImsMGwFunction
TS 132 732 [1], information object class, AsFunction (see note 2)	AsFunction
TS 132 732 [1], information object class, CamelImSsfAsFunction (see note 3)	CamelImSsfAsFunction
TS 132 732 [1], information object class, OsaScsAsFunction (see note 4)	OsaAsFunction
TS 132 732 [1], information object class, SipAsFunction (see note 5)	SipAsFunction
TS 132 732 [1], information object class, SlfFunction (see note 10)	SlfFunction
TS 132 732 [1], information object class, Link_As_Cscf (see note 6)	Link_As_Cscf
TS 132 732 [1], information object class, Link_As_Icscf (see note 7)	Link_As_Icscf
TS 132 732 [1], information object class, Link_As_Scscf (see note 8)	Link_As_Scscf
TS 132 732 [1], information object class, Link_As_Slf (see note 9)	Link_As_Slf
TS 132 732 [1], information object class, Link_Bgcf_Bgcf (see note 11)	Link_Bgcf_Bgcf
TS 132 732 [1], information object class, Link_Bgcf_Cscf (see note 11)	Link_Bgcf_Cscf
TS 132 732 [1], information object class, Link_Bgcf_Mgcf (see note 11)	Link_Bgcf_Mgcf
TS 132 732 [1], information object class, Link_Bgcf_Scscf (see note 11)	Link_Bgcf_Scscf
TS 132 732 [1], information object class, Link_Cscf_Cscf (see note 11)	Link_Cscf_Cscf
TS 132 732 [1], information object class, Link_Cscf_Icscf (see note 11)	Link_Cscf_Icscf
TS 132 732 [1], information object class, Link_Cscf_Mgcf (see note 11)	Link_Cscf_Mgcf
TS 132 732 [1], information object class, Link_Cscf_Mrfc (see note 11)	Link_Cscf_Mrfc
TS 132 732 [1], information object class, Link_Cscf_Pcscf (see note 11)	Link_Cscf_Pcscf
TS 132 732 [1], information object class, Link_Cscf_Scscf (see note 11)	Link_Cscf_Scscf
TS 132 732 [1], information object class, Link_Cscf_Slf (see note 11)	Link_Cscf_Slf
TS 132 732 [1], information object class, Link_Icscf_Slf (see note 11)	Link_Icscf_Slf
TS 132 732 [1], information object class, Link_Mgcf_Scscf (see note 11)	Link_Mgcf_Scscf
TS 132 732 [1], information object class, Link_Mrfc_Mrfp (see note 11)	Link_Mrfc_Mrfp
TS 132 732 [1], information object class, Link_Mrfc_Scscf (see note 11)	Link_Mrfc_Scscf
TS 132 732 [1], information object class, Link_Scscf_Scscf (see note 11)	Link_Scscf_Scscf
TS 132 732 [1], information object class, Link_Scscf_Slf (see note 11)	Link_Scscf_Slf

NOTE 1: It should be noted that the definition of Link Information Object Class imported from TS 132 622 [2] will need to be clarified as follows:
- In TS 132 622 [2] it states that the Link IOC "represents a communication link or reference point between two network entities. The Link IOC does not indicate whether the represented communication link or reference point is a physical or logical entity".
- In the context of the NGN, the Link represents the relationship between two "NGN Functional Entities".

NOTE 2: AsFunction IOC: In the TISPAN NRM, this IOC represents ASF Type 2 Application Servers (see ES 282 001 [3]) in the cases specified in the IOC definition of TS 132 732 [1]. Furthermore, the IOC is used for subclassing of TISPAN specific IOCs.

NOTE 3: CamelImSsfAsFunction IOC: In the TISPAN NRM, this IOC represents ASF Type 2 (see ES 282 001 [3]) of type IM-SSF Application Server using CAMEL (see ES 282 007 [7]).

NOTE 4: OsaScsAsFunction IOC: In the TISPAN NRM, this IOC represents ASF Type 2 (see ES 282 001 [3]) of type OSA SCS Application Server (see ES 282 007 [7]).

NOTE 5: SipAsFunction IOC: In the TISPAN NRM, this IOC represents ASF Type 2 (see ES 282 001 [3]) of type SIP Application Server (see ES 282 007 [7]).

NOTE 6: Link_As_Cscf IOC: In the TISPAN NRM, this IOC represents the ISC reference point between S-CSCF and ASF Type 2 (see ES 282 001 [3] and ES 282 007 [7]). TS 132 732 [1] positions this IOC between the AsFunction IOC and the CscfFunction IOC in the case of non-role based modelling of CSCF (see definition of the CscfFunction IOC of TS 132 732 [1]).

NOTE 7: Link_As_Icscf IOC: In the TISPAN NRM, this IOC represents the Ma reference point between I-CSCF and ASF Type 2 (see ES 282 001 [3] and ES 282 007 [7]).