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SERIES Y: GLOBAL INFORMATION
INFRASTRUCTURE, INTERNET PROTOCOL ASPECTS
AND NEXT-GENERATION NETWORKS

ITU-T Y.2000 series – Supplement on NGN release 1 scope

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Supplement 1 to ITU-T Y-series Recommendations

ITU-T Y.2000 series – Supplement on NGN release 1 scope

Summary

This Supplement to ITU-T Y.2000-series Recommendations on the scope of release 1 of the Next Generation Networks (NGN) provides the release 1 environment, release 1 services, descriptions and use cases.

Source

Supplement 1 to ITU-T Y-series Recommendations was agreed on 28 July 2006 by ITU-T Study Group 13 (2005-2008).

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

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CONTENTS

Page

1	Scope	1
2	References.....	1
3	Terms and definitions	1
3.1	Definitions	1
3.2	Acronyms and abbreviations	2
4	NGN release 1 environment overview	4
4.1	Transport functions.....	6
4.2	Network-network interfaces (NNIs).....	8
4.3	User profile functions	8
4.4	End-user functions.....	8
5	NGN release 1 services.....	9
5.1	Multimedia services.....	9
5.2	PSTN/ISDN emulation services	10
5.3	PSTN/ISDN simulation services	10
5.4	Data communication services.....	11
5.5	Public interest aspects.....	11
	Appendix I – Service descriptions and use cases.....	13
I.1	General use cases.....	13
I.2	Business use cases	17
I.3	Medical use cases	17
	Appendix II – Examples of categorization of services	19
II.1	Basic/enhanced services versus service/transport stratum	19
II.2	Unicast/multicast/broadcast versus real-time/non-real-time: General mapping	19
II.3	Business mapping.....	21
II.4	Medical mapping	22
	Bibliography.....	23

Supplement 1 to ITU-T Y-series Recommendations

ITU-T Y.2000 series – Supplement on NGN release 1 scope

1 Scope

This Supplement provides the scope of release 1 of the Next Generation Networks (NGN). This Supplement provides the release 1 environment, release 1 services, descriptions and use cases.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

- [ITU-T E.212] ITU-T Recommendation E.212 (2004), *The international identification plan for mobile terminals and mobile users*.
- [ITU-T M.3050.1] ITU-T Recommendation M.3050.1 (2004), *Enhanced Telecom Operations Map (eTOM) – The business process framework*.
- [ITU-T Y.2001] ITU-T Recommendation Y.2001 (2004), *General overview of NGN*.
- [ITU-T Z.100] ITU-T Recommendation Z.100 (2002), *Specification and Description Language (SDL)*.

3 Terms and definitions

3.1 Definitions

This Supplement uses the following terms:

3.1.1 application network interface: Provides a channel of interactions and exchanges between applications and NGN elements offering needed capabilities and resources for realization of services.

3.1.2 customer: The customer buys products and services from the enterprise or receives free offers or services. A customer may be a person or a business. Source for definition is [ITU-T M.3050.1].

See also "terms, definitions and high-level terminological framework for Next Generation Networks" in [NGN-FGProceedings].

3.1.3 home network: The network of the service provider to which a given subscriber is subscribed. Source for definition is [ITU-T E.212].

3.1.4 mobility: The ability for the user or other mobile entities to communicate and access services irrespective of changes of the location or technical environment. The degree of service availability may depend on several factors including the access network capabilities, service level agreements between the user's home network and the visited network (if applicable), etc. Mobility includes the ability of telecommunication with or without service continuity. Source for definition is [ITU-T Y.2001].

3.1.5 nomadism: Ability of the user to change their network access point. When changing the network access point, the user's service session is completely stopped and then started again, i.e., there is no session continuity or hand-over possible.

NOTE – It is assumed that, normally, users shut down their service session before attaching to a different access point.

See also "terms, definitions and high-level terminological framework for Next Generation Networks" in [NGN-FGProceedings].

3.1.6 personal mobility: This is the mobility for those scenarios where the user changes the terminal used for network access at different locations. Personal mobility describes the ability of a user to access telecommunication services at any terminal on the basis of a personal identifier and the capability of the network to provide those services delineated in the user's service profile.

See also "terms, definitions and high-level terminological framework for Next Generation Networks" in [NGN-FGProceedings].

3.1.7 service: A set of functions and facilities offered to a user by a provider. Source for definition is [ITU-T Z.100].

3.1.8 service continuity: The ability of a mobile object to maintain ongoing service, including current states, such as a user's network environment and session for a service.

See also "terms, definitions and high-level terminological framework for Next Generation Networks" in [NGN-FGProceedings].

3.1.9 subscriber: The person or organization responsible for concluding contracts for the services subscribed to and for paying for these services. Source for definition is [ITU-T M.3050.1].

NOTE – See also definition of customer. Source for definition is [ITU-T M.3050.1].

See also "terms, definitions and high-level terminological framework for Next Generation Networks" in [NGN-FGProceedings].

3.1.10 terminal mobility: This is the mobility for those scenarios where the same terminal equipment is moving or is used at different locations. Terminal mobility describes the ability of a terminal to access telecommunication services from different locations and while in motion and the capability of the network to identify and locate that terminal.

3.1.11 end user: The end user is the actual user of the products or services offered by the enterprise. The end user consumes the product or service. Source for definition is [ITU-T M.3050.1].

See also "terms, definitions and high-level terminological framework for Next Generation Networks" in [NGN-FGProceedings].

NOTE – Within this Supplement the term "user" should be assumed to be "end user".

3.1.12 visited network: The network that is local to the customer in a roaming configuration.

See also "terms, definitions and high-level terminological framework for Next Generation Networks" in [NGN-FGProceedings].

3.2 Acronyms and abbreviations

This Supplement uses the following abbreviations and acronyms:

ADSL	Asymmetric Digital Subscriber Line
API	Application Programming Interface
ATM	Asynchronous Transfer Mode
DVB	Digital Video Broadcast

FTTH	Fibre to the Home
GPS	Global Positioning System
IM	Instant Messaging
IMS	IP Multimedia Subsystem
IN	Intelligent Network
IP	Internet Protocol
IP-CAN	IP Connectivity Access Network
ISDB	ISDN Digital Broadcast
ISDN	Integrated Services Digital Network
LAN	Local Area Network
MMS	Multimedia Message Service
NACF	Network Attachment Control Functions
NAPT	Network Address Port Translation
NGN	Next Generation Network
NNI	Network-Network Interface
OMA	Open Mobile Alliance
OSA	Open Service Access
OSE	OMA Service Environment
PBX	Private Branch Exchange
PC	Personal Computer
PDA	Personal Digital Assistant
PLMN	Public Land Mobile Network
PoN	Push to talk over NGN
PSTN	Public Switched Telephone Network
QoS	Quality of Service
RACF	Resource Admission Control Functions
RFID	Radio Frequency Identification
SDH	Synchronous Digital Hierarchy
SIP	Session Initiation Protocol
SLA	Service Level Agreement
SMS	Short Message Service
TDM	Time Division Multiplex
TDR	Telecommunications for Disaster Relief
URL	Uniform Resource Locator
VDSL	Very high speed Digital Subscriber Line
VoD	Video on Demand
VoIP	Voice over Internet Protocol

VPN	Virtual Private Network
WLAN	Wireless Local Area Network
xDSL	Various types of Digital Subscriber Line
xPON	various types of Passive Optical Networks

4 NGN release 1 environment overview

The definition of an NGN is contained in [ITU-T Y.2001]. The objectives for NGN release 1 are to provide an extensible platform for services and an overall architecture designed to be extensible, allowing new services to be provided as required.

The NGN framework is expected to support advanced architecture objectives, to enable the offering of a comprehensive set of services over a unifying IP-layer network. The NGN is expected to support a multiplicity of access transport functions and a variety of mobile and fixed terminal types. Services are not limited to those provided by the home network, but may be obtained from multiple service providers and third parties. Services shall be able to traverse multiple providers' networks. The functions that are supported by NGN release 1 specifications are illustrated in Figure 1. The figure includes the interfaces between NGN and end-user functions, between NGN and other networks and between NGN and applications.

The objectives for NGN release 1 are to provide an extensible platform and architecture supporting:

- Multimedia services (including PSTN/ISDN simulation services).
- PSTN/ISDN replacement support (emulation services).
- Data communication services.
- Public interest aspects (for both multimedia services and PSTN/ISDN replacement support).

In NGN release 1 all services are carried over IP, although IP itself may in turn be carried over a number of underlying technologies, such as ATM, Ethernet, etc. Release 1 assumes IPv4 or IPv6 networking at packet interconnection points and packet network interfaces and therefore focuses on the definition of IP packet interfaces.

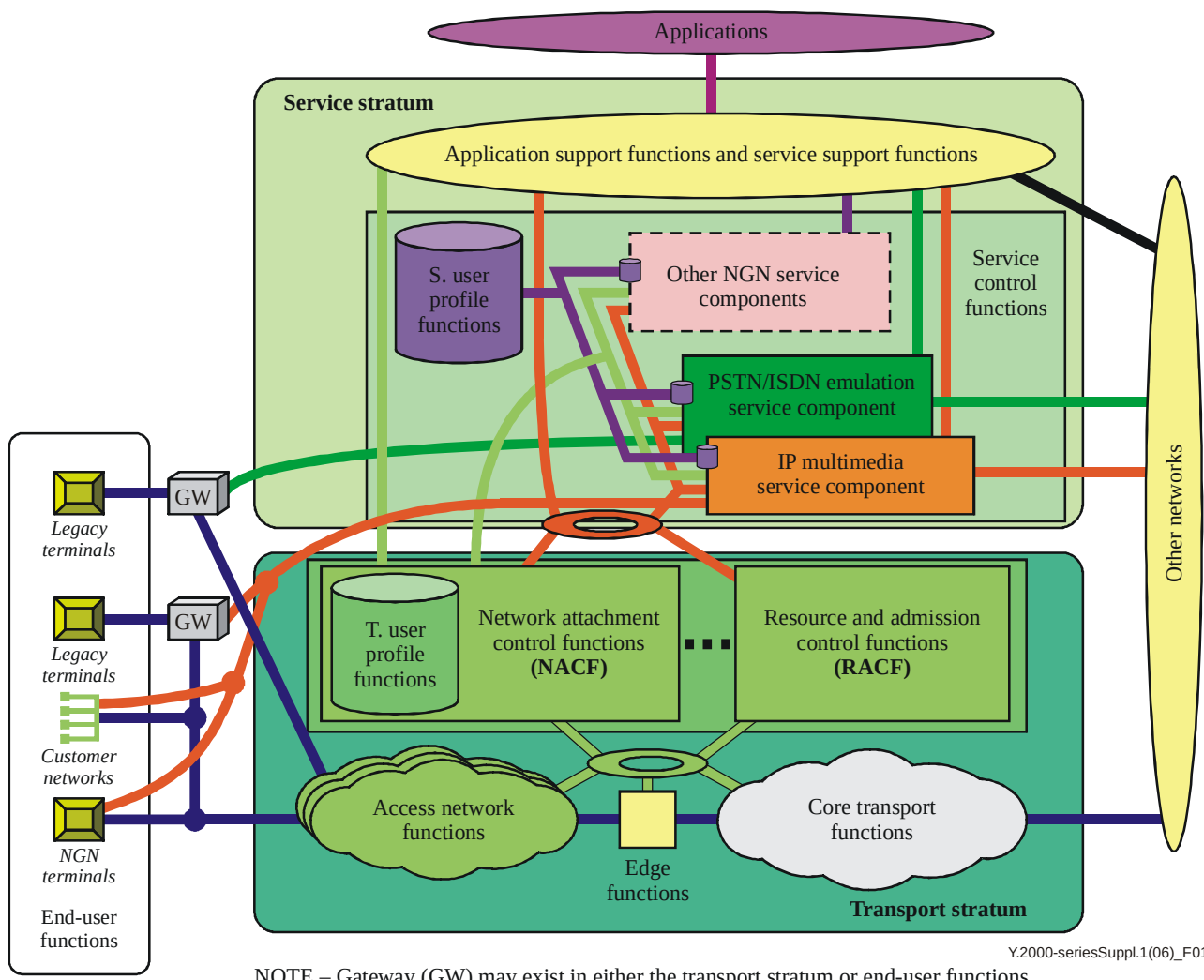


Figure 1 – Transport and service configuration of the NGN

NGN release 1 is expected to support the following functions:

- The control of access and core transport networks (QoS, admission control, authentication, etc.).
- The coordination of multiple control components to a single core transport network for resource control.
- The interworking and interoperability with legacy networks.
- Mutual de-coupling of the application support functions from the service control functions and the transport stratum.
- Access technology independence of service control functions and application support functions.

Figure 1 shows a representation of the components of the NGN. The components shown overlap and may share functionality. It combines both the physical and functional overview of the scope of the NGN and provides a simplistic decomposition of the NGN into defined portions to enable standardization activities to progress in parallel.

Figure 1 makes extensive use of colour to group related aspects of service delivery. Service delivery and control are represented by components, and are intended to collate related control functions. Complex services are supported in the NGN by common applications support functions.