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Foreword

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The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

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Contents

Foreword

This Technical Report 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

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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.

Introduction

At a time when the first release of the 3GPP 3G standard has stabilised, and the first 3GPP compliant networks are going live, the ITU is already working towards elaborating a framework for the future development of IMT-2000 and systems beyond IMT-2000. In addition, a number of research initiatives worldwide are investigating technologies and techniques that might fall within that framework. It is therefore timely, that 3GPP look at how its systems will evolve in the future to meet the requirements of the user and the industry, and to make use of emerging technologies.

1 Scope

The present document describes a long term, high level roadmap, intended to guide the future work of 3GPP. It is focussed on items pertinent to the evolution of 3GPP specifications, and identifies concepts and trends to be considered by 3GPP when defining future work items. It does not contain details of proposed technologies, rather it contains pointers to direct the activities of the appropriate TSGs in elaborating future releases of the 3GPP standard. As a result, not all of the topics covered herein are within the remit of 3GPP to discuss, and description of such items will not be extensively developed. E.g. Spectrum is an ITU-R/WRC issue and therefore outside the scope of 3GPP. The document is designed to be a "living document" and will be updated accordingly over its lifetime in order to reflect future developments and innovations.

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 TR 21.905: "Vocabulary for 3GPP Specifications".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in [1] apply.

3.2 Abbreviations

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

LIF	Location Interoperability Forum
WAP	Wireless Application Protocol
WRC	World Radiocommunication Conference

4 The current scope of 3GPP and its Releases

4.1 3GPP Releases

The current scope of 3rd Generation Partnership Project (3GPP) is to produce globally applicable Technical Specifications (TSs) and Technical Reports (TRs) for:

- a 3rd Generation Mobile System based on evolved GSM core networks and the radio access technologies that they support (i.e., Universal Terrestrial Radio Access (UTRA) both Frequency Division Duplex (FDD) and Time Duplex (TDD) modes); and
- the Global System for Mobile communication (GSM) including evolved radio access technologies (e.g. General Packet Radio Service (GPRS) and Enhanced Data rates for GSM Evolution (EDGE)).

In addition, 3GPP shall consider the long term evolution of its systems.

The 3rd Generation Mobile System and the Global System for Mobile communication (GSM) and their capabilities are developed in a phased approach. In the following the content of the 3GPP Releases is briefly outlined.

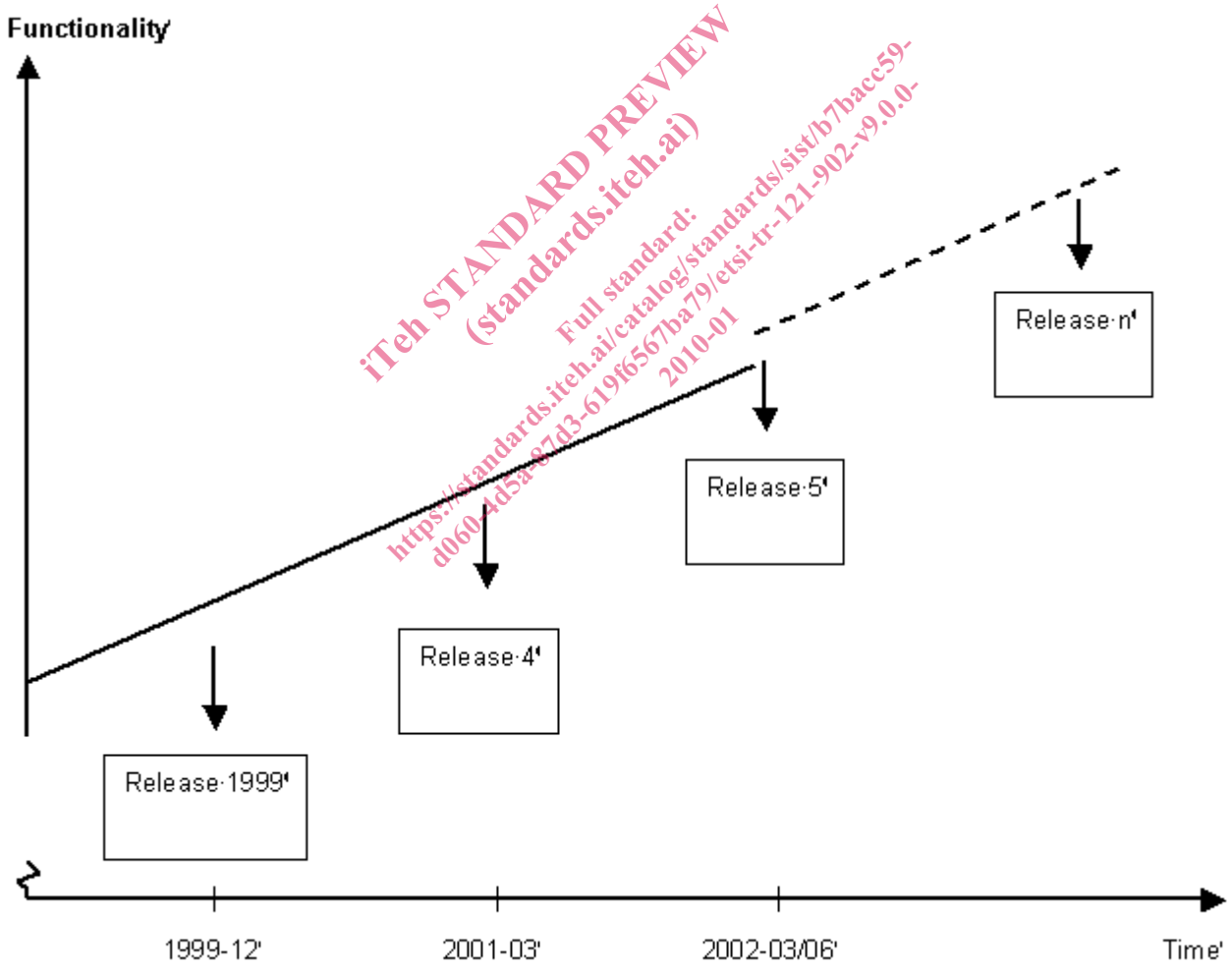

Figure 1: 3GPP Releases for enhancements/improvements of the 3GPP Mobile Network

4.1.1 3GPP Release 1999

3GPP Release 1999 is the first release from 3GPP and covers specifications for a complete mobile system. 3GPP Release 1999 contains, but is not limited to, UTRA FDD and 3.84 Mcps TDD modes, UTRAN Iu, Iub and Iur interfaces, GSM based evolved core network, USIM, AMR speech codec, Multimedia Messaging Service (MMS), Location Services (LCS), a broad range of supplementary services, Customized Applications for Mobile network Enhanced Logic (CAMEL); Open Service Access (OSA) and telecommunication management.

The 3GPP Release 1999 was functionally frozen in December 1999.

4.1.2 3GPP Release 4

3GPP Release 4 is a further enhancement of 3GPP Release 1999.

3GPP Release 4 contains, but is not limited to, UTRA FDD repeater function, low chip rate TDD option, 700 MHz support for GERAN, e2e transparent packet streaming service, Tandem Free Operation, Transcoder Free Operation, IP transport of CN protocols, bearer independent CS core network, CAMEL enhancements and OSA enhancements.

The 3GPP Release 4 was functionally frozen in March 2001.

4.1.3 3GPP Release 5

3GPP Release 5 is a further enhancement of the previous releases.

3GPP Release 5 contains, but is not limited to, the initial phase of the IP Multimedia Subsystem (IMS), High Speed Downlink Packet Access (HSDPA), UMTS in 1800/1900 MHz bands (release independent), Wideband AMR, IP transport in the UTRAN, Iu for GERAN, Gb over IP, CAMEL enhancements, OSA enhancement, Global Text Telephony (this is a Release independent Feature, not a Rel-5 Feature), Location Services enhancements, UTRAN sharing in connected mode and security enhancements.

The 3GPP Release 5 was functionally frozen in March 2002 and the remaining part in June 2002.

4.1.4 3GPP Releases 6

Work is currently ongoing for 3GPP Release 6. It is planned that 3GPP Release 6 will contain, but will not be limited to: Multimedia Broadcast/Multicast Service (MBMS), Network Sharing, Priority Service, Wireless LAN/UMTS Interworking, IMS Phase 2, Push Services and Presence.

4.1.5 Future 3GPP Releases

The present document addresses the evolutionary aspects of subsequent 3GPP Releases.

4.2 Interactions with other industry fora

4.2.1 Internet Engineering Task Force (IETF)

As a result of the introduction of the IP Multimedia CN Subsystem, the dependence on IETF RFCs has significantly increased, with 3GPP defining requirements that impact the IETF work. The relationship with IETF is moving away from one where 3GPP simply adopts the protocols as applicable (as was the case in Release 1999 and Rel-4), with 3GPP actively participating in the develop of the protocols for Release 5 and in the case of Release 6 defining the system requirements, from which the protocol requirements can be determined and passed to IETF to provide the solution. To coordinate that work, 3GPP has put in place the following:

- an IETF Liaison Rapporteur to work with the officials of IETF;
- tracks the dependencies on work in IETF through the 3GPP Work Plan;
- provides 3GPP requirements drafts into IETF through contributions from individuals.

4.2.2 Open Mobile Alliance (OMA)

OMA is a new industry forum, which is working on service enablers for mobile systems. The working relationship between 3GPP and OMA is still being developed. Currently, 3GPP is dependent upon work within OMA that was formerly being done with fora such as WAP and LIF. In this case, the requirements have been defined by 3GPP and the protocols are being defined by OMA e.g. for LCS and MMS.

In the future there is the possibility that OMA will be defining service enablers that 3GPP will need to:

- provide interworking to;
- provide network capabilities to support the service.