Technical Specification Group Services and System Aspects
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Source:	ETSI MCC (contact: alain.sultan@etsi.org)
Title:	Full list of Release 6 Features
Document for:	Information
Agenda Item:	8.5
Work Item / Release:	All - Release 6

This document contains the complete list of 3GPP Release 6 Features.

The information comes from the 3GPP Work Plan for Release 6 which can be found at:
ftp://ftp.3gpp.org/Information/WORK_PLAN

It will be used as a starting point for the elaboration of a more complete document which will briefly describe all these features and provide references to them, as done for other complete 3GPP Releases.

The 3GPP Release 6 features are:

Rel-6 improvements of Radio Interface
Includes:
- FDD Base Station Classification
- Improved receiver performance requirements for FDD UE
- Frequency bands: UMTS 850, UMTS 800, UMTS 1.7/2.1GHz.
- Improvements of receiver performance of HSDPA UE:
  - Performance Requirements of Receive Diversity for HSDPA
  - Improved performance requirements for HSDPA categories 7 and 8

UE Positioning
Includes:
- Open interface between the SMLC and the SNR within the UTRAN to support Rel-4 positioning methods
- A-GPS minimum performance specification

Rel-6 RAN improvements
Includes:
- Beamforming Enhancements
- RRM optimization for Iur and Iub; Improved access to UE measurement data for CRNC to support TDD RRM
- Network Assisted Cell Change from UTRAN to GERAN – Network Side Aspects
- Remote Control of electrical antenna tilting
- HS-DPCCH ACK/NACK Enhancement
- RAB support enhancement:
  - Optimisation of downlink channelisation code utilisation for FDD (R1). Introduction of Fractional DPCH (F-DPCH)
  - Optimisation of DL channelisation code utilisation for 3.84 Mcps TDD
  - Optimisation of the RABs for IMS voice over IP.

IMS Phase 2
- Interworking between IMS and CS networks (Stage 3 in TS 29.163)
- interworking with non-IMS IP networks
- Lawful Interception
- IMS Group Management (covered by Presence, IMS Messaging and IMS Conferencing)
- IP v4-based IMS
- Enhancements to Cx and Sh interfaces
- IMS Conferencing
- IMS Management
- IMS Charging

- IMS Messaging
- IMS Network Resource Model
- Additional SIP Capabilities support
- interoperability in an open inter-vendor environment.
- Impacts of the TISPAN requirements with backward Rel-7 compatibility problems.

Interoperability and commonality between IMS using different IP connectivity networks (IMSCOOP)

Push Services

Speech Recognition and Speech Enabled Services
3GPP Work completed, OMA's dependency on Multimodal support to be completed by December 2005 (was June).

Digital Rights Management (DRM)
Stages 2 and 3 covered by OMA work.

WLAN/UMTS interworking
Scenarios 1 to 3 (Scenario 4 and further in subsequent Releases)

Priority Service Rel-6
No Stage 2 and no stage 3 needed, It consists in a "Guide" to describe how existing 3GPP specifications support the high-level requirements

QoS Improvements
QoS Release 6 Improvements consist in Dynamic Policy Control Enhancements for End-to-End QoS.

Performance characterization of default codecs for PS conversational multimedia applications

UICC/USIM enhancements and interworking for Rel-6
It contains:
- 2G/3G Java Card™ API based applet interworking
- USIM enhancements for WLAN Interworking.
- USSD message transfer to USIM

Security Enhancements Rel-6
It contains:
- Network Domain Security (NDS)/IP
- NDS/AF (Application Framework)
- Key Management of group keys for VGCS (Voice Group Call Services)
- GERAN A/Gb mode security enhancements
- G-MILENAGE Algorithm
- Backup algorithm
- Subscriber certificates

Generic Authentication Architecture (GAA)

GERAN Rel-6
It contains:
- Addition of frequency bands to GSM
- Multiple TBF in A/Gb mode
- Seamless support of streaming services in A/Gb mode
- Flexible Layer One for GERAN
- Downlink Advanced Receiver Performance (DARP)
- Uplink TDOA location determination (for GPRS, PS domain)
- Uplink TDOA location determination (for GSM, CS domain)

- Reduction of PS Service interruption in DTM
- Support of “PS Handover” for GERAN A/Gb mode
- Generic Access to A/Gb interface

Network Sharing

Codec Enhancements for PS Conversational Multimedia Applications

3G-324M Improvements (CS)

CAMEL Rel-6
It consists in “CAMEL prepay interworking with SCUDIF (Service Change UDI Fallback)”

LCS enhancements 2
It contains:
- Improvement on Le interface
- Enhanced support for anonymity and user privacy
- Enhanced inter-GMLC interface
- Location Services support for IMS public identities
- “New area” event for location service triggering reports

See also UTDOA topics under GERAN and UE positioning topics under RAN.

3GPP Enablers for services like Push to Talk over Cellular (PoC)

OSA Improvements Rel-6

OAM&P Rel-6
In full: Operation, Administration, Maintenance and Provisioning
Composed of four independent BBs:
- Principles, high level Requirements & Architecture
- Network Infrastructure Management
- Performance Management
- Subscriber and Equipment Trace
  - Contains Management Based Activation (MBA) and non-SIP Signalling Based Activation of Trace
  - CN1 and CN4 Rel-6, the non-SIP-based Trace is now completed

IP Flow Based Bearer Charging

Subscription Management (SuM)

3GPP Access Class Barring and Overload Protection (ACBOP)

Multimedia Messaging Service (MMS) Rel-6 Enhancements

Packet Switched Streaming Rel-6

Presence

Multimedia Broadcast/Multicast Service (MBMS)

Generic User Profile

FDD Uplink Enhancements (EDCH)

CS Video and Voice Service Improvements - Redial Solution

Charging Management

AMR-WB extension for high audio quality (AMR-WB+)

OSA Improvements Rel-6

To be further checked:
Reorganisation of CS Data Specifications
Enhancements of VGCS in public networks for communication of public authority officials

Feasibility Studies

Feasibility Studies (FS) completed in the Rel-6 time frame:

MExE Enhancements Rel-6.
It contains:
- MExE Rel-6 Improvements and Investigations
- MExE Run-Time Independent Framework Feasibility Study (TR 22.857)

GERAN Feasibility Studies:
- FS on Generic Access to A/Gb Interface
- FS on Uplink TDOA location determination for GSM, CS domain (completed except potential LMU performance specs).
- FS on Uplink TDOA location determination for GPRS, PS domain
- Single Antenna Receiver Interference Cancellation (SAIC)
- Downlink Advanced Receiver Performance (DARP) test scenarios
- FS on Reduction of PS service interruption in Dual Transfer Mode

RAN Feasibility Studies:
- Low Output powers for FDD BSs
- Uplink Enhancements for Dedicated Transport Channels
- Analysis of higher chip rates for UTRAN TDD evolution
- Radio link performance enhancements
- Uplink Enhancements for UTRA TDD
- Some other RAN FSs have been completed since Rel 5 was frozen

Privacy Capability

(U)SIM Security Reuse by Peripheral Device on Local Interface

Security for Early IMS (“implementation guide” in TR 33.978)

Bandwidth and Resource savings and Speech Quality enhancements (BARS).