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LTE;
General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access (3GPP TS 23.401 version 15.13.0 Release 15)

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Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

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y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

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1 Scope

The present document defines the Stage 2 service description for the Evolved 3GPP Packet Switched Domain - also known as the Evolved Packet System (EPS) in this document. The Evolved 3GPP Packet Switched Domain provides IP connectivity using the Evolved Universal Terrestrial Radio Access Network (E-UTRAN).

The specification covers both roaming and non-roaming scenarios and covers all aspects, including mobility between E-UTRAN and pre-E-UTRAN 3GPP radio access technologies, policy control and charging, and authentication.

The Radio Access Network functionality is documented only to the extent necessary to describe the overall system. TS 36.300 [5] contains the overall description of the Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN).

ITU-T Recommendation I.130 [3] describes a three-stage method for characterisation of telecommunication services, and ITU-T Recommendation Q.65 [4] defines Stage 2 of the method.

TS 23.402 [2] is a companion specification to this specification.

An Evolved Packet System architecture optimised for the support of Cellular IoT (Internet of Things) applications is also defined in this document.

The Evolved Packet System also provides support for the E-UTRAN to control a Dual Connectivity radio connection that uses a combination of E-UTRA and another radio access technology (e.g. NR). TS 36.300 [5] contains the overall description for Dual Connectivity.

Enhancements to support interworking of EPS with 5GS are captured in TS 23.501 [83] and TS 23.502 [84].

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".

[2] 3GPP TS 23.402: "Architecture enhancements for non-3GPP accesses".

[3] ITU-T Recommendation I.130: "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".

[4] ITU-T Recommendation Q.65: "The unified functional methodology for the characterization of services and network capabilities".

[5] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2".

[6] 3GPP TS 23.203: "Policy and charging control architecture".

[7] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".

[8] 3GPP TS 43.129: "Packet-switched handover for GERAN A/Gb mode; Stage 2".

[9] 3GPP TS 23.003: "Numbering, addressing and identification".

[10] 3GPP TS 23.122: "Non-Access-Stratum (NAS) functions related to Mobile Station in idle mode".

[11] 3GPP TS 43.022: "Functions related to MS in idle mode and group receive mode".

[12] 3GPP TS 25.304: "UE procedures in idle mode and procedures for cell re-selection in connected mode".

[13] 3GPP TS 23.246: "Multimedia Broadcast/Multicast Service (MBMS); Architecture and functional description".

[14] 3GPP TS 29.060: "GPRS Tunnelling Protocol (GTP) across the Gn and Gp interface".

[15] 3GPP TS 43.051: "GERAN Overall description - Stage 2".

[16] 3GPP TS 25.401: "UTRAN overall description".

[17] IETF RFC 1034 (1987): "Domain names – concepts and facilities" (STD 13).

[18] IETF RFC 4862: "IPv6 Stateless Address Autoconfiguration".

[19] IETF RFC 2131: "Dynamic Host Configuration Protocol".

[20] IETF RFC 3736: "Stateless Dynamic Host Configuration Protocol (DHCP) Service for IPv6".

[21] IETF RFC 3633: "IPv6 Prefix Options for Dynamic Host Configuration Protocol (DHCP) version 6".

[22] 3GPP TS 25.413: "UTRAN Iu interface Radio Access Network Application Part (RANAP) signalling".

[23] 3GPP TS 44.064: "Mobile Station - Serving GPRS Support Node (MS-SGSN); Logical Link Control (LLC) Layer Specification".

[24] 3GPP TS 23.251: "Network Sharing; Architecture and functional description".

[25] IETF RFC 4039: "Rapid Commit Option for the Dynamic Host Configuration Protocol version 4 (DHCPv4)".

[26] IETF RFC 768: "User Datagram Protocol".

[27] 3GPP TS 23.221: "Architectural requirements".

[28] 3GPP TS 23.008: "Organization of subscriber data".

[29] 3GPP TS 23.078: "Customized Applications for Mobile network Enhanced Logic (CAMEL) Phase X; Stage 2".

[30] 3GPP TS 23.236: "Intra-domain connection of Radio Access Network (RAN) nodes to multiple Core Network (CN) nodes".

[31] IETF RFC 3588: "Diameter Base Protocol".

[32] IETF RFC 4861: "Neighbor Discovery for IP Version 6 (IPv6)".

[33] 3GPP TS 25.331: "Radio Resource Control (RRC); Protocol Specification".

[34] 3GPP TS 36.304: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) procedures in idle mode".

[35] IETF RFC 4960: "Stream Control Transmission Protocol".

[36] 3GPP TS 36.413: "Evolved Universal Terrestrial Access Network (E-UTRAN); S1 Application Protocol (S1AP)".

[37] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".

[38] 3GPP TS 29.061: "Interworking between the Public Land Mobile Network (PLMN) supporting packet based services and Packet Data Networks (PDN)".