



TECHNICAL SPECIFICATION

**Universal Mobile Telecommunications System (UMTS);
LTE;
5G;
Evolved Packet System (EPS);
Mobility Management Entity (MME)
and Serving GPRS Support Node (SGSN)
related interfaces based on Diameter protocol
(3GPP TS 29.272 version 19.5.0 Release 19)**



Reference

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650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B
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Foreword

This Technical Specification 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

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- 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.

In the present document, modal verbs have the following meanings:

shall indicates a mandatory requirement to do something

shall not indicates an interdiction (prohibition) to do something

The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.

should indicates a recommendation to do something

should not indicates a recommendation not to do something

may indicates permission to do something

need not indicates permission not to do something

The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

can indicates that something is possible

cannot indicates that something is impossible

The constructions "can" and "cannot" are not substitutes for "may" and "need not".

will indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

will not indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

might indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

might not indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

is (or any other verb in the indicative mood) indicates a statement of fact

is not (or any other negative verb in the indicative mood) indicates a statement of fact

The constructions "is" and "is not" do not indicate requirements.

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1 Scope

The present document describes the Mobility Management Entity (MME) and Serving GPRS Support Node (SGSN) related diameter-based interfaces towards the Home Subscriber Server (HSS) or the CSG Subscriber Server (CSS), and the MME and the SGSN related diameter-based interface towards the Equipment Identity Register (EIR).

This specification defines the Diameter application for the MME-HSS, S6a reference point, for the MME-CSS, S7a reference point, for the SGSN-HSS, S6d reference point, and for the SGSN-CSS, S7d reference point. The interactions between the HSS/CSS and the MME/SGSN are specified, including the signalling flows.

This specification defines the Diameter application for the MME-EIR, S13 reference point, and for the SGSN-EIR, S13' reference point. The interactions between the MME/SGSN and the EIR are specified, including the signalling flows.

In this specification, if there is no specific indication, the following principles apply:

- "SGSN" refers to an SGSN which at least supports the S4 interface and may support Gn and Gp interfaces.
- "S4-SGSN" refers to an SGSN which supports the S4 interface and does not support Gn and Gp interfaces.
- Gn/Gp-SGSN refers to an SGSN which supports the Gn and Gp interfaces and does not support S4 interface.
- "GPRS subscription data" refers to the parameters in the HLR column in Table 5.2. in TS 23.008 [30].
- "EPS subscription data" refers to the parameters in the HSS column in Table 5.2A-1 in TS 23.008 [30].

The Evolved Packet System stage 2 description (architecture and functional solutions) is specified in TS 23.401 [2] and in TS 23.060 [12].

SGSN CAMEL Subscription Data are not supported over S6d interface.

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 23.401: "GPRS enhancements for E-UTRAN access".
- [3] 3GPP TS 23.003: "Numbering, addressing and identification".
- [4] Void.
- [5] 3GPP TS 33.401: "3GPP System Architecture Evolution: Security Architecture".
- [6] Void".
- [7] IETF RFC 2234: "Augmented BNF for syntax specifications".
- [8] 3GPP TS 32.299: "Charging management; Diameter charging applications".
- [9] 3GPP TS 29.229: "Cx and Dx interfaces based on the Diameter protocol".
- [10] 3GPP TS 29.212: "Policy and Charging Control (PCC); Reference points".

- [11] 3GPP TS 29.214: "Policy and Charging Control over Rx reference point".
- [12] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".
- [13] 3GPP TS 22.016: "International Mobile station Equipment Identities (IMEI)".
- [14] IETF RFC 4960: "Stream Control Transmission Protocol".
- [15] Void
- [16] 3GPP TS 33.210: "3G Security; Network Domain Security; IP Network Layer Security"..
- [17] 3GPP TS 29.228: "IP multimedia (IM) Subsystem Cx and Dx Interfaces; Signalling flows and Message Elements".
- [18] 3GPP TS 33.102: "3G Security; Security Architecture".
- [19] 3GPP TS 36.413: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); S1 Application Protocol (S1AP)".
- [20] IETF RFC 5778: "Diameter Mobile IPv6: Support for Home Agent to Diameter Server Interaction".
- [21] 3GPP TS 29.061: "Interworking between the Public Land Mobile Network (PLMN) supporting packet based services and Packet Data Networks (PDN)".
- [22] 3GPP TS 32.298: "Charging Management; CDR parameter description".
- [23] 3GPP TS 32.422: "Telecommunication management; Subscriber and equipment trace; Trace control and configuration management".
- [24] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".
- [25] 3GPP TS 29.329: "Sh Interface based on the Diameter protocol".
- [26] IETF RFC 5447: "Diameter Mobile IPv6: Support for Network Access Server to Diameter Server Interaction".
- [27] IETF RFC 4004: "Diameter Mobile IPv4 Application".
- [28] 3GPP2 A.S0022: "Interoperability Specification (IOS) for Evolved High Rate Packet Data (eHRPD) Radio Access Network Interfaces and Interworking with Enhanced Universal Terrestrial Radio Access Network (E-UTRAN)".
- [29] 3GPP TS 23.011: "Technical realization of Supplementary Services - General Aspects".
- [30] 3GPP TS 23.008: "Organization of subscriber data".
- [31] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core network protocols; Stage 3".
- [32] IETF RFC 5516: "Diameter Command Code Registration for Third Generation Partnership Project (3GPP) Evolved Packet System (EPS)".
- [33] 3GPP TS 32.251: "Telecommunication management; Charging management; Packet Switched (PS) domain charging".
- [34] 3GPP TS 23.292: "IP Multimedia Subsystem (IMS) centralized services ".
- [35] 3GPP TS 23.216: "Single Radio Voice Call Continuity (SRVCC)".
- [36] 3GPP TS 23.015: "Technical realization of Operator Determined Barring (ODB)".
- [37] 3GPP TS 29.173: "Diameter-based SLh interface for Control Plane LCS".
- [38] 3GPP TS 29.303: "Domain Name System Procedures; Stage 3".
- [39] 3GPP TS 29.060: "General Packet Radio Service (GPRS); GPRS Tunnelling Protocol (GTP) across the Gn and Gp Interface".