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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 - NAF 742 C
Association à but non lucratif enregistrée à la
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Contents

Foreword

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Introduction

Guidance to Readers of this Specification

In order to reduce the number of procedures in this specification certain editorial practices have been adopted. Though there are many independent factors, such as variants of S5/S8/S2b and attachment cases, these are in essence quite similar. So, rather than presenting the permutations of these factors separately and thereby needlessly repeating normative text, conventions have been adopted to combine this information in single procedures.

The S5 and S8 reference points in the EPC architecture have been defined to have both a GTP and PMIP variant. The GTP variant is documented in TS 23.401 [4], while the PMIP variant is documented in this specification. Every effort has been made to eliminate duplication of normative text common to both specifications. Many figures in this specification refer to procedures in TS 23.401 [4] to achieve this end. Common procedures between TS 23.401 [4] and TS 23.402 (this specification), are represented in this specification in figures by text in shaded box(es) that reference the appropriate figure and steps in TS 23.401 [4]. The details of the common steps are only captured in TS 23.401 [4].

The S2b reference point in the EPC architecture has also been defined to have both a GTP and PMIP variant. Both variants are documented in this specification. Every effort has been made to eliminate duplication of normative text common to both variants. Figures for the GTP variant of S2b refer to figures defined for the PMIP variant of S2b to achieve this end. Common procedures for both variants are represented in figures for GTP based S2b by text in shaded box(es) that reference the appropriate figure and steps defined for PMIP based S2b. The details of the common steps are only captured for the PMIP variant of S2b.

Attachment cases (as discussed in clauses 6.2.1 and 7.2.1) have been combined in a single figure. The different attachment cases can be accommodated by including optional items in the flows, for instance, a vPCRF that is only employed during when a roaming case or LBO is specified.

Multiple APN interactions may occur for many of the procedures defined in this specification. These interactions complicate the flows by introducing certain operations that may occur multiple times. Rather than produce unique flows for this purpose, we indicate where this possibility may occur in text.

1 Scope

This document specifies the stage 2 service description for providing IP connectivity using non-3GPP accesses to the Evolved 3GPP Packet Switched domain. In addition, for E-UTRAN and non-3GPP accesses, the specification describes the Evolved 3GPP PS Domain where the protocols between its Core Network elements are IETF-based.

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

The specification covers both roaming and non-roaming scenarios and covers all aspects, including mobility between 3GPP and non 3GPP accesses, policy control and charging, and authentication, related to the usage of non-3GPP accesses.

TS 23.401 [4] covers architecture aspects common to the Evolved 3GPP Packet Switched domain.

The procedures defined in the present document for WLAN access selection and PLMN selection replace the corresponding I-WLAN procedures specified in TS 23.234 [5].

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

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

[4] 3GPP TS 23.401: "General Packet Radio Service (GPRS) Enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access".

[5] 3GPP TS 23.234: "3GPP System to Wireless Local Area Network (WLAN) Interworking; System Description".

[6] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description Stage 2".

[7] Void.

[8] IETF RFC 5213: "Proxy Mobile IPv6".

[9] IETF RFC 5996: "Internet Key Exchange Protocol Version 2 (IKEv2)".

[10] IETF RFC 5555: "Mobile IPv6 support for dual stack Hosts and Routers (DSMIPv6)".

[11] IETF RFC 3748: "Extensible Authentication Protocol (EAP)".

[12] IETF RFC 5944: "IP Mobility Support for IPv4, revised".

[13] Void.