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Universal Mobile Telecommunications System (UMTS);
LTE;
Mobile IPv6 vendor specific option format
and usage within 3GPP
(3GPP TS 29.282 version 16.0.0 Release 16)

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Contents

Foreword

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1 Scope

The present document specifies the format and usage of the Mobile IPv6 Vendor Specific Option [2] within the Third Generation Partnership Project.

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] IETF RFC 5094: "Mobile IPv6 Vendor Specific Option".

[3] IANA Private Enterprise Numbers Registry, <http://www.iana.org/assignments/enterprise-numbers>.

[4] IETF RFC 6275: "Mobility Support in IPv6".

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

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

[7] 3GPP TS 29.275: "Proxy Mobile IPv6 (PMIPv6) based Mobility and Tunnelling protocols; Stage 3".

[8] 3GPP TS 24.327: "Mobility between 3GPP Wireless Local Area Network (WLAN) interworking (I-WLAN) and 3GPP systems; General Packet Radio System (GPRS) and 3GPP I-WLAN aspects; Stage 3".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

4 3GPP Mobile IPv6 Option

4.1 General

The 3GPP Mobile IPv6 Option is a Mobile IPv6 Vendor-Specific Option as defined by IETF RFC 5094 [2] using the Vendor-Id assigned to 3GPP. The 3GPP Mobile IPv6 Option is used to encode 3GPP Specific Information Elements within the protocols based on Mobile IPv6 (MIPv6) as defined by IETF RFC 6275 [4], such as the Dual Stack Mobile IPv6 (DSMIPv6) and Proxy Mobile IPv6 (PMIPv6) protocols respectively defined by IETF RFC 5555 [5] and IETF RFC 5213 [6].

4.2 Format

The format of the 3GPP Mobile IPv6 Option is shown in table 4.2-1. The defined 3GPP Specific Information Elements are listed in table 4.2-2. The data format of a given 3GPP Specific Information Element (IE) is defined in the specification defining its usage, as indicated in table 4.2-2.

	Bits							
Octets	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
1	Type							
2	Length							
3	Vendor Id (1st Octet)							
4	Vendor Id (2nd Octet)							
5	Vendor Id (3rd Octet)							
6	Vendor Id (4th Octet)							
7	Sub-Type							
8	Reserved							M
9-n	3GPP Specific IE Data Fragment							

Figure 4.2-1: 3GPP Mobile IPv6 Option

Table 4.2-1: Fields in a 3GPP Mobile IPv6 Option

Field	Content	Reference
Type	Value is decimal 19 the assigned value for the Vendor-Specific mobility option	RFC 5094 [2]
Length	An 8-bit field indicating the length of the option in octets excluding the Type and the Length fields. All other fields are included.	RFC 5094 [2]
Vendor ID	A 32-bit field. Value is set to the SMI Network Management Private Enterprise Number for 3GPP, which is decimal "10415".	IANA [3]
Sub-Type	Indicate the type of the 3GPP Specific Information Element encoded by the 3GPP Mobile IPv6 Option.	RFC 5094 [2]
Reserved	Value set to zero by sender and ignored by receiver.	Defined here
More 3GPP Specific IE Data Fragment (M) Flag	Value set to "1" if this instance of the 3GPP Mobile IPv6 Option is followed by another 3GPP Mobile IPv6 Option encoding the follow up 3GPP Specific IE data fragment that does not fit in this instance of the 3GPP Mobile IPv6 Option. Set to zero otherwise.	Defined here
3GPP Specific IE Data Fragment	The 3GPP Specific IE might be split over multiple 3GPP Mobile IPv6 Options in case the total length of the 3GPP Specific Information Element exceeds 248 bytes. This is the data fragment of the 3GPP Specific IE contained in this instance of the 3GPP Mobile IPv6 Option. The data fragment has a maximum length of 248 bytes.	Defined here

The syntax of the 3GPP specific information element allows appending extra octets. The receiver that does not support such appended octets shall ignore the appended octets in order to ensure backwards compatibility.

Table 4.2-2: Subtypes for 3GPP specific Information Elements

3GPP-specific IE Subtype	3GPP-specific Information Element	Reference
1	Protocol Configuration Options.	3GPP TS 29.275 [7]
2	3GPP Specific PMIPv6 Error Code.	3GPP TS 29.275 [7]
3	PMIPv6 PDN GW IP Address.	3GPP TS 29.275 [7]
4	PMIPv6 DHCPv4 Address Allocation Procedure Indication.	3GPP TS 29.275 [7]
5	PMIPv6 Fully Qualified PDN Connection Set Identifier	3GPP TS 29.275 [7]
6	PMIPv6 PDN type indication.	3GPP TS 29.275 [7]
7	Charging ID	3GPP TS 29.275 [7]
8	Selection Mode	3GPP TS 29.275 [7]
9	I-WLAN Mobility Access Point Name (APN).	3GPP TS 24.327 [8]
10	Charging Characteristics	3GPP TS 29.275 [7]
11	Mobile Equipment Identity (MEI)	3GPP TS 29.275 [7]
12	MSISDN	3GPP TS 29.275 [7]
13	Serving Network	3GPP TS 29.275 [7]
14	APN Restriction	3GPP TS 29.275 [7]
15	Maximum APN Restriction	3GPP TS 29.275 [7]
16	Unauthenticated IMSI	3GPP TS 29.275 [7]
17	PDN Connection ID	3GPP TS 29.275 [7]
18	PGW Back-Off Time	3GPP TS 29.275 [7]
19	Signalling Priority Indication	3GPP TS 29.275 [7]
20	Additional Protocol Configuration Options	3GPP TS 29.275 [7]
21	Static IP Address Allocation Indication	3GPP TS 29.275 [7]
22	MME/SGSN Identifier	3GPP TS 29.275 [7]
23	End Marker Notification	3GPP TS 29.275 [7]
24	Trusted WLAN Mode Indication	3GPP TS 29.275 [7]
25	UE Time Zone	3GPP TS 29.275 [7]
26	Access Network Identifier Timestamp	3GPP TS 29.275 [7]
27	Logical Access ID	3GPP TS 29.275 [7]
28	Origination Time Stamp	3GPP TS 29.275 [7]
29	Maximum Wait Time	3GPP TS 29.275 [7]
30	TWAN Capabilities	3GPP TS 29.275 [7]

Annex A (informative): Change History

Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	New
03/2009	CT#43	CP-090057			V1.0.0 Approved in CT#43	8.0.0
06/2009	CT#44	CP-090290	0001		PMIP VSO Charging Characteristics	8.1.0
		CP-090290	0002	-	Registration of new 3GPP specific PMIPv6 IEs	
		CP-090290	0003	2	FQ-CSID	
09/2009	CT#45	CP-090538	0004	1	APN Restriction for PMIPv6	8.2.0
		CP-090538	0005	1	Handling future extensions of 3GPP Mobile IPv6 Options	
12/2009	CT#46	CP-090801	0007	-	Unauthenticated IMSI	9.0.0
			0008	1	Multiple PDN to the Same APN for PMIP-based Interfaces	
2011-03	-	-	-	-	Update to Rel-10 version (MCC)	10.0.0
2011-06	CT#52	CP-110369	0011	2	APN based congestion control	10.1.0
			0012	2	Low access priority indicator	
2011-12	CT#54	CP-110792	0015	3	Adding Additional Authentication Options IE	10.2.0
2012-09	CT#57	CP-120442	0019	2	Correction to IETF Draft for TS 29.282	10.3.0
2012-09	CT#57	CP-120460	0022	-	Correction to RFC Update for TS 29.282	11.0.0
2012-12	CT#58	CP-120729	0026	-	Static IP Address Allocation Indication	11.1.0
			0023	1	MME/SGSN Id	
2013-09	CT#61	CP-130464	0027	-	Addition of End Marker Notification information element	12.0.0
2014-03	CT#63	CP-140416	0028	1	Add Trusted WLAN Mode Indication IE	12.1.0
2014-06	CT#64	CP-140252	0029	1	UE Time Zone for PMIP	12.2.0
		CP-140252	0030	1	TWAN Identifier Timestamp for PMIP	
		CP-140252	0032	1	Add a 3GPP specific option for PMIP for new Line Identifier	
2015-09	CT#69	CP-150442	0033	-	Origination Time Stamp and Maximum Wait Time for PMIP	13.0.0
2015-12	CT#70	CP-150780	0034	-	Extensions for P-CSCF restoration for trusted and untrusted WLAN access	13.1.0
2017-03	CT#75	-	-	-	Update to Rel-14 version (MCC)	14.0.0
2018-06	CT#80	-	-	-	Update to Rel-15 version (MCC)	15.0.0
2020-07	CT#88e	-	-	-	Update to Rel-16 version (MCC)	16.0.0

History

Document history		
V16.0.0	July 2020	Publication