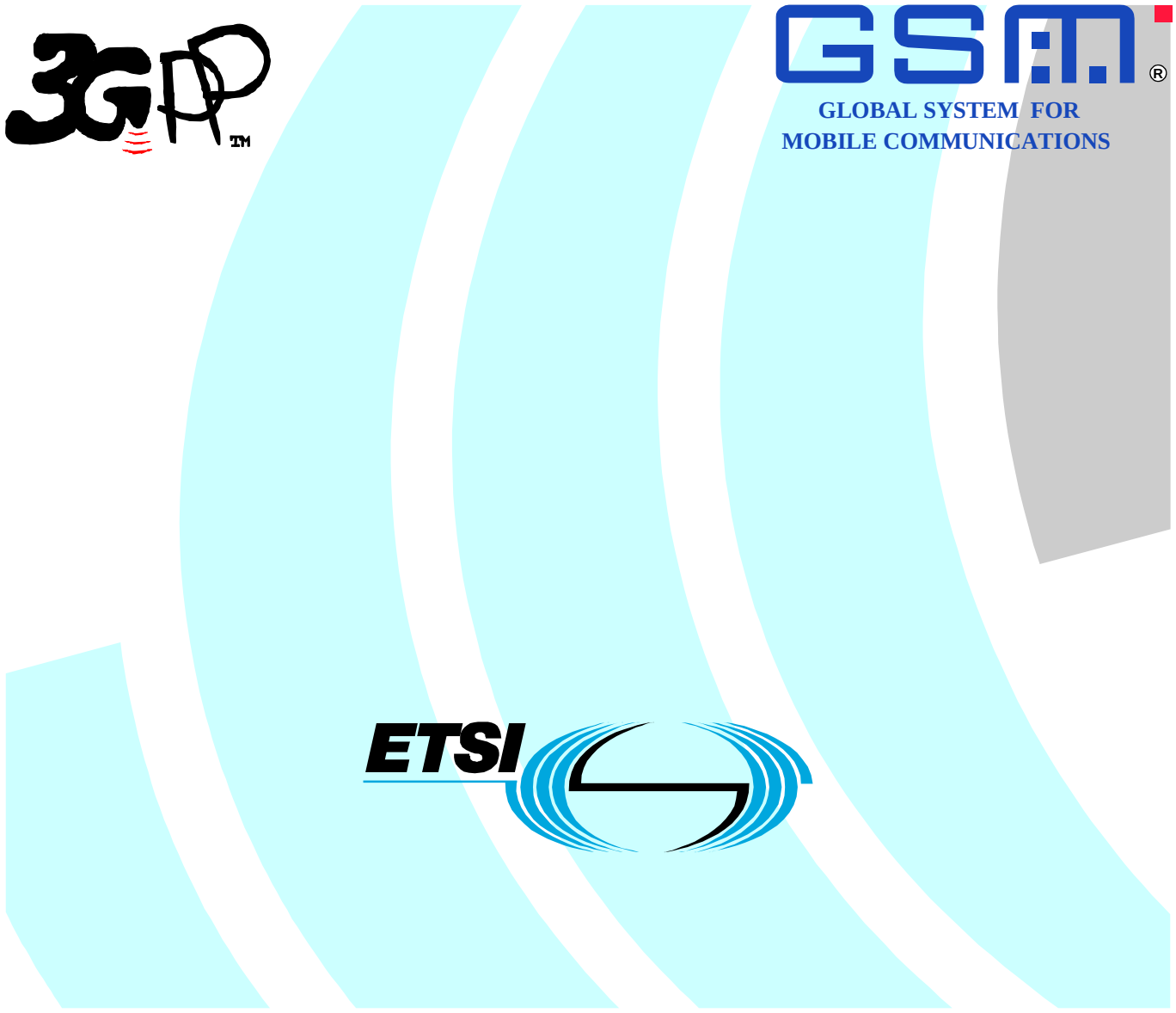
ETSI TS 129 230 V6.9.0 (2006-12)

Technical Specification

Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
Diameter applications;
3GPP specific codes and identifiers
(3GPP TS 29.230 version 6.9.0 Release 6)



Reference
RTS/TSGC-0429230v690

Keywords
GSM, UMTS

ETSI

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
Sous-Préfecture de Grasse (06) N° 7803/88

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://webapp.etsi.org/IPR/home.asp).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

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

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under http://webapp.etsi.org/key/queryform.asp .

Contents

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.

1 Scope

The present document lists the 3GPP specific Diameter protocol codes, including the AVP codes and Experimental result codes.

This document lists also the application identifiers assigned to 3GPP specific Diameter applications by IANA and the Diameter command code range which is assigned to 3GPP by IANA.

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 TS 29.228: " IP Multimedia (IM) Subsystem Cx and Dx interfaces; Signalling flows and message contents".

[2] 3GPP TS 29.229: " Cx and Dx interfaces based on the Diameter protocol; Protocol details".

[3] 3GPP TS 29.328: " IP Multimedia (IM) Subsystem Sh interface; Signalling flows and message contents".

[4] 3GPP TS 29.329: " Sh Interface based on the Diameter protocol; Protocol details".

[5] 3GPP TS 32.299 "3GPP Diameter charging application".

[6] 3GPP TS 29.234: "3GPP System to WLAN Interworking; Stage 3 Description".

[7] 3GPP TS 29.109: " Generic Authentication Architecture (GAA); Zh and Zn Interfaces based on the Diameter protocol; Protocol details".

[8] 3GPP TS 29.209: " Technical Specification Group Core Network; Policy control over Gq interface".

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

[10] IETF RFC 3589: "Diameter Command Codes for Third Generation Partnership Project (3GPP) Release 5".

[11] IANA's Enterprise-Numbers: http://www.iana.org/assignments/enterprise-numbers

[12] IANA's AAA parameters register: ftp://ftp.iana.org/assignments/aaa-parameters/

[13] 3GPP TS 29.061: "Interworking between the Public Land Mobile Network (PLMN) supporting packet based services and Packet Data Networks (PDN)".

[14] 3GPP TS 32.296: "Telecommunication management; Online Charging System (OCS): Applications and interfaces;".

[15] 3GPP TS 29.210: " Charging rule provisioning over Gx interface".

[16] 3GPP TS 29.140: "Multimedia Messaging Service (MMS); MM10 interface based on Diameter protocol".

[17] 3GPP TS 29.211: "Rx Interface and Rx/Gx signalling flows".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply.

3GPP specific: A definition which is used in conjunction with the 3GPP's vendor identifier.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AVP	Attribute-Value-Pair
CR	Change Request
IANA	Internet Assigned Numbers Authority
IETF	Internet Engineering Task Force
LS	Liaison Statement

4 Application identifiers

The Diameter applications are identified with the application identifiers as specified in the RFC 3588 [9]. There are two kind of applications: IETF standards track applications and vendor specific applications. All application identifiers are assigned by IANA [12]. This chapter lists the application identifiers asigned by IANA to all 3GPP Diameter applications.

The application identifiers are transferred in Diameter command's header in the Application-ID field.

4.1 3GPP specific application identifiers

The 3GPP specific application identifiers allocated by IANA are listed in the following table.

Table 4.1: 3GPP specific application identifiers

Application identifier	Application	3GPP TS
16777216	3GPP Cx/Px	29.228 [1] and 29.229 [2]
16777217	3GPP Sh/Ph	29.328 [3] and 29.329 [4]
16777218	3GPP Re	32.296 [14]
16777219	3GPP Wx	29.234 [6]
16777220	3GPP Zn	29.109 [7]
16777221	3GPP Zh	29.109 [7]
16777222	3GPP Gq	29.209 [8]
16777223	3GPP Gmb	29.061 [13]
16777224	3GPP Gx	29.210 [15]
16777225	3GPP Gx over Gy	29.210 [15]
16777226	3GPP MM10	29.140 [16]
16777229	3GPP Rx	29.211 [17]
16777230	3GPP Pr	29.234 [6]

5 Command codes

The command codes are used for communicating the command associated with the Diameter message. The command code is carried in the Diameter header's Command-Code field. The command codes can be divided into standard command codes allocated by IANA and experimental command codes for testing purposes only.

5.1 Command codes allocated for 3GPP

Based on the IETF RFC 3589 [10] the IANA has allocated a standard command code range 300 - 313 for 3GPP. The command codes are presented in the following table.

Table 5.1/1: Command codes allocated for 3GPP

Command code	Command name	Abbreviation	Specified in 3GPP TS
300	User-Authorization-Request/-Answer	UAR/UAA	29.229 [2]
301	Server-Assignment-Request/-Answer	SAR/SAA	
302	Location-Info-Request/-Answer	LIR/LIA	
303	Multimedia-Auth-Request/-Answer	MAR/MAA	
304	Registration-Termination-Request/-Answer	RTR/RTA	
305	Push-Profile-Request/-Answer	PPR/PPA	
306	User-Data-Request/-Answer	UDR/UDA	29.329 [4]
307	Profile-Update-Request/-Answer	PUR/PUA	
308	Subscribe-Notifications-Request/-Answer	SNR/SNA	
309	Push-Notification-Request/-Answer	PNR/PNA	
310	Boostrapping-Info-Request/Answer	BIR/BIA	29.109 [7]
311	Message-Process-Request/Answer	MPR/MPA	29.140 [16]

Editors note: The following command codes have been allocated to 3GPP, but they have not been used yet.

Table 5.1/2: Command codes allocated for 3GPP.

312			
313			

6 Vendor identifier

The vendor identifier (also known as Enterprise number) indicates the vendor specific attributes, result codes and application identifiers in Diameter commands. The vendor identifier is used in the Vendor-ID field of the AVP header and in the Vendor-Id AVP. The Vendor-Id AVP is used to identify the vendor in the Vendor-Specific-Application-Id and Experimental-Result-Code grouped AVPs.

6.1 3GPP's vendor identifier

The IANA has allocated a vendor identifier value 10415 for 3GPP [11].

7 Attribute-Value-Pair codes

The AVP codes are used together with the vendor identifier to identify each attribute uniquely. There are multiple AVP namespaces. The IETF IANA namespace, that is, the AVPs with vendor identifier zero or without vendor identifier, is controlled by IANA. Each vendor controls the AVP codes within their AVP namespaces.

7.1 3GPP specific AVP codes

The 3GPP specific AVPs have the Vendor-Specific bit ('V' bit) set in the AVP header and they carry the 3GPP's vendor identifier in the Vendor-ID field of the AVP header. The 3GPP specific AVP codes are presented in the following table.

Table 7.1: 3GPP specific AVP codes

AVP Code	Attribute Name	Data Type	Specified in the 3GPP TS
100	3GPP-WLAN-APN-Id		
Note: The rest of the AVP codes from 1 to 255 are reserved for backwards compatibility with 3GPP RADIUS Vendor Specific Attributes (See also TS 29.061 [13])			
Note: The AVP codes from 256 to 299 are reserved for future use.			
300	Authentication-Method		29.234 [6]
301	Authentication-Information-SIM		
302	Authorization -Information-SIM		
303	WLAN-User-Data		
304	Charging-Data		
305	WLAN-Access		
306	WLAN- 3GPP-IP-Access		
307	APN-Authorized		
308	unassigned		
309	APN-Barring-Type		
310	WLAN-Direct-IP-Access		
311	Session-Request-Type		
312	Routing-Policy		
313	Max-Requested-Bandwidth		
314	Charging-Characteristics		
315	Charging-Nodes		
316	Primary-OCS-Charging-Function-Name		
317	Secondary-OCS-Charging-Function-Name		
318	3GPP-AAA-Server-Name		
319	Maximum-Number-Accesses	Unsigned32	
Note: The AVP codes from 320 to 399 are reserved for TS 29.234			
			29.109 [7]
Note: The AVP codes from 400 to 499 are reserved for TS 29.109			
500	Abort-Cause	Enumerated	29.209 [8], 29.211 [17]
501	Access-Network-Charging-Address	Address	
502	Access-Network-Charging-Identifier	Grouped	
503	Access-Network-Charging-Identifier-Value	OctetString	
504	AF-Application-Identifier	OctetString	
505	AF-Charging-Identifier	OctetString	
506	Authorization-Token	OctetString	
507	Flow-Description	IPFilterRule	
508	Flow-Grouping	Grouped	
509	Flow-Number	Unsigned32	
510	Flows	Grouped	
511	Flow-Status	Enumerated	
512	Flow-Usage	Enumerated	
513	Specific-Action	Enumerated	
514	Max-Requested-Bandwidth	Unsigned32	
515	Max-Requested-Bandwidth-DL	Unsigned32	
516	Max-Requested-Bandwidth-UL	Unsigned32	
517	Media-Component-Description	Grouped	
518	Media-Component-Number	Unsigned32	
519	Media-Sub-Component AVP	Grouped	
520	Media-Type	Enumerated	
521	RR-Bandwidth	Unsigned32	
522	RS-Bandwidth	Unsigned32	
523	SIP-Forking-Indication	Enumerated	
Note: The AVP codes from 524 to 599 are reserved for TS 29.209 and TS 29.211			
600	Visited-Network-Identifier	OctetString	29.229 [2]
601	Public-Identity	UTF8String	
602	Server-Name	UTF8String	
603	Server-Capabilities	Grouped	

604	Mandatory-Capability	Unsigned32	
605	Optional-Capability	Unsigned32	
606	User-Data	OctetString	
607	SIP-Number-Auth-Items	Unsigned32	
608	SIP-Authentication-Scheme	UTF8String	
609	SIP-Authenticate	OctetString	
610	SIP-Authorization	OctetString	
611	SIP-Authentication-Context	OctetString	
612	SIP-Auth-Data-Item	Grouped	29.229 [2], 29.234 [6]
613	SIP-Item-Number	Unsigned32	29.229 [2]
614	Server-Assignment-Type	Enumerated	
615	Deregistration-Reason	Grouped	
616	Reason-Code	Enumerated	
617	Reason-Info	UTF8String	
618	Charging-Information	Grouped	
619	Primary-Event-Charging-Function-Name	DiameterURI	
620	Secondary-Event-Charging-Function-Name	DiameterURI	
621	Primary-Charging-Collection-Function-Name	DiameterURI	
622	Secondary-Charging-Collection-Function-Name	DiameterURI	
623	User-Authorization-Type	Enumerated	
624	User-Data-Already-Available	Enumerated	
625	Confidentiality-Key	OctetString	
626	Integrity-Key	OctetString	
627	User-Data-Request-Type	Enumerated	
628	Supported-Features	Grouped	
629	Feature-List-ID	Unsigned32	
630	Feature-List	Unsigned32	
631	Supported-Applications	Grouped	
632	Associated-Identities	Grouped	
Note: The AVP codes from 633 to 699 are reserved for TS 29.229.			
700	User-Identity	Grouped	29.329 [4]
701	MSISDN	OctetString	
702	User-Data	OctetString	
703	Data-Reference	Enumerated	
704	Service-Indication	OctetString	
705	Subs-Req-Type	Enumerated	
706	Requested-Domain	Enumerated	
707	Current-Location	Enumerated	
708	Identity-Set	Enumerated	
Note: The AVP codes from 709 to799 are reserved for TS 29.329.			
Note: The AVP codes from 800 to 822 are reserved for TS 32.299.			
823	Event-Type	Grouped	
824	SIP-Method	UTF8String	
825	Event	UTF8String	
826	Content-Type	UTF8String	
827	Content-Length	Unsigned32	
828	Content-Disposition	UTF8String	
829	Role-of-Node	Enumerated	
830	User-Session-Id	UTF8String	
831	Calling-Party-Address	UTF8String	
832	Called-Party-Address	UTF8String	
833	Time-Stamps	Grouped	
834	SIP-Request-Timestamp	Time	
835	SIP-Response-Timestamp	Time	
836	Application-Server	UTF8String	
837	Application-provided-called-party-address	UTF8String	
838	Inter-Operator-Identifier	Grouped	
839	Originating-IOI	UTF8String	
840	Terminating-IOI	UTF8String	
841	IMS-Charging-Identifier	UTF8String	
842	SDP-Session-Description	UTF8String	
843	SDP-Media-Component	Grouped	
844	SDP-Media-Name	UTF8String	
845	SDP-Media-Description	UTF8String	
846	CG-Address	Address	

847	GGSN-Address	Address	32.299 [5]
848	Served-Party-IP-Address	Address	
849	Authorized-QoS	UTF8String	
850	Application-Server-Information	Grouped	
851	Trunk-Group-Id	Grouped	
852	Incoming-Trunk-Group-Id	UTF8String	
853	Outgoing-Trunk-Group-Id	UTF8String	
854	Bearer-Service	OctetString	
855	Service-Id	UTF8String	
856	Associated-URI	UTF8String	
857	Charged-Party	UTF8String	
858	PoC-Controlling-Address	UTF8String	
859	PoC-Group-Name	UTF8String	
860	Cause	Grouped	
861	Cause-Code	Integer32	
862	Node-Functionality	Enumerated	
863	Service-Specific-Data	UTF8String	
864	Originator	Enumerated	
865	PS-Furnish-Charging-Information	Grouped	
866	PS-Free-Format-Data	OctetString	
867	PS-Append-Free-Format-Data	Enumerated	
868	Time-Quota-Threshold	Unsigned32	
869	Volume-Quota-Threshold	Unsigned32	
870	Trigger-Type	Enumerated	
871	Quota-Holding-Time	Unsigned32	
872	Reporting-Reason	Enumerated	
873	Service-Information	Grouped	
874	PS-Information	Grouped	
875	WLAN-Information	Grouped	
876	IMS-Information	Grouped	
877	MMS-Information	Grouped	
878	LCS-Information	Grouped	
879	PoC-Information	Grouped	
880	MBMS-Information	Grouped	
881	Quota-Consumption-Time	Unsigned32	
882	Media-Initiator-Flag	Enumerated	
883	PoC-Server-Role	Enumerated	
884	PoC-Session-Type	Enumerated	
885	Number-Of-Participants	Unsigned32	
886	Originator-Address	Grouped	
887	Participants-Involved	UTF8String	
888	Expires	Unsigned32	
889	Message-Body	Grouped	
890	WAG-Address	Address	
891	WAG-PLMN-Id	OctetString	
892	WLAN-Radio-Container	Grouped	
893	WLAN-Technology	Unsigned32	
894	WLAN-UE-Local-IPAddress	Address	
895	PDG-Address	Address	
896	PDG-Charging-Id	Unsigned32	
897	Address-Data	UTF8String	
898	Address-Domain	Grouped	
899	Address-Type	Enumerated	
900	TMGI	OctectString	29.061 [13]
901	Required-MBMS-Bearer-Capabilities	UTF8String	
902	MBMS-StartStop-Indication	Enumerated	
903	MBMS-Service-Area	OctectString	
904	MBMS-Session-Duration	Unsigned32	
905	Alternative-APN	UTF8String	
906	MBMS-Service-Type	Enumerated	
907	MBMS-2G-3G-Indicator	Enumerated	
908	MBMS-Session-Identity	OctetString	
909	RAI	UTF8String	
910	Additional-MBMS-Trace-Info	OctetString	
911	MBMS-Time-To-Data-Transfer	Unsigned32	

912	MBMS-Session-Identity-Repetition-Number	Unsigned32	
913	MBMS-Required-QoS	UTF8String	
914	MBMS-Counting-Information	Enumerated	
Note: The AVP codes from 915 to 999 are reserved for TS 29.061			
1000	Bearer-Usage	Enumerated	
1001	Charging-Rule-Install	Grouped	
1002	Charging-Rule-Remove	Grouped	
1003	Charging-Rule-Definition	Grouped	
1004	Charging-Rule-Base-Name	OctetString	
1005	Charging-Rule-Name	OctetString	
1006	Event-Trigger	Enumerated	
1007	Metering-Method	Enumerated	29.210 [15]
1008	Offline	Enumerated	
1009	Online	Enumerated	
1010	Precedence	Unsigned32	
1011	Reporting-Level	Enumerated	
1012	TFT-Filter	IPFilterRule	
1013	TFT-Packet-Filter-Information	Enumerated	
1014	ToS-Traffic-Class	OctetString	
Note: The AVP codes from 1015 to 1099 are reserved for TS 29.210			
1100	Served-User-Identity	Groupe	
1101	VASP-ID	UTF8Str	
1102	VAS-ID	UTF8Str	
1103	Trigger-Event	Enumer	
1104	Sender-Address	UTF8Str	
1105	Initial-Recipient-Address	Groupe	
1106	Result-Recipient-Address	Groupe	
1107	Sequence-Number	Unsigne	
1108	Recipient-Address	UTF8Str	
1109	Routeing-Address	UTF8Str	29.140 [16]
1110	Originating-Interface	Enumer	
1111	Delivery-Report	Enumer	
1112	Read-Reply	Enumer	
1113	Sender-Visibility	Enumer	
1114	Service-Key	UTF8Str	
1115	Billing-Information	UTF8Str	
1116	Status	Group	
1117	Status-Code	UTF8Str	
1118	Status-Text	UTF8Str	
Note: The AVP codes from 1119 to 1199 are reserved for TS 29.140			
1200	Domain-Name	UTF8String	32.299 [5]
1201	Recipient-Address	Grouped	
1202	Submission-Time	Time	
1203	MM-Content-Type	Grouped	
1204	Type-Number	Enumerated	
1205	Additional-Type-Information	UTF8String	
1206	Content-Size	Unsigned32	
1207	Additional-Content-Information	Grouped	
1208	Addressee-Type	Enumerated	
1209	Priority	Enumerated	
1210	Message-ID	UTF8String	
1211	Message-Type	Enumerated	
1212	Message-Size	Unsigned32	
1213	Message-Class	Grouped	
1214	Class-Identifier	Enumerated	
1215	Token-Text	UTF8String	
1216	Delivery-Report-Requested	Enumerated	
1217	Adaptations	Enumerated	
1218	Applic-ID	UTF8String	
1219	Aux-Applic-Info	UTF8String	
1220	Content-Class	Enumerated	
1221	DRM-Content	Enumerated	
1222	Read-Reply-Report-Requested	Enumerated	
1223	Reply-Applic-ID	UTF8String	
1224	File-Repair-Supported	Enumerated	

1225	MBMS-User-Service-Type	Enumerated	
1226	Unit-Quota-Threshold	Unsigned32	
1227	PDP-Address	Address	
1228	SGSN-Address	Address	
1229	PoC-Session-Id	UTF8String	
1230	Deferred-Location-Even-Type	UTF8String	
1231	LCS-Client-Name	UTF8String	
1232	LCS-Client-Id	Grouped	
1233	LCS-Client-Dialed-By-MS	UTF8String	
1234	LCS-Client-External-ID	UTF8String	
1235	LCS-Client-Name	Grouped	
1236	LCS-Data-Coding-Scheme	UTF8String	
1237	LCS-Format-Indicator	Enumerated	
1238	LCS-Name-String	UTF8String	
1239	LCS-Requestor-Id	Grouped	
1240	LCS-Requestor-Id-String	UTF8String	
1241	LCS-Client-Type	UTF8String	
1242	Location-Estimate	UTF8String	
1243	Location-Estimate-Type	UTF8String	
1244	Location-Type	Grouped	
1245	Positioning-Data	UTF8String	
1246	WLAN-Session-Id	UTF8String	
1247	PDP-Context-Type	Enumerated	
1248	MMBox-Storage-Requested	Enumerated	
1249	Number-Of-Talk-Burst	Unsigned32	
1250	Called-Asserted-Identity	UTF8String	
1251	Requested-Party-Address	UTF8String	
1252	Reserved		
1253	Reserved		
1254	Reserved		
1255	Talk-Burst-Exchange	Grouped	
1256	Talk-Burst-Volume	Unsigned32	
1257	Talk-Burst-Time	Unsigned32	
1258	Number-Of-Received-Talk-Bursts	Enumerated	
1259	Received-Talk-Burst-Volume	Unsigned32	
1260	Received-Talk-Burst-Time	Unsigned32	
1261	PoC-Change-Conditions	Enumerated	
1262	PoC-Change-Time	Time	
Note: The AVP codes from 1263 to 1299 are reserved for TS 32.299			

8 Experimental result codes

The Diameter answer messages must carry either Result-Code AVP or Experimental-Result AVP. The values of Result-Code AVP are controlled by IANA. The Experimental-Result AVP is a grouped AVP containing the Vendor-Id AVP and Experimental-Result-Code AVP, thus the experimental result codes are controlled in a vendor-specific manner.

8.1 3GPP specific result codes

The 3GPP specific result codes are always transferred in the Experimental-Result AVP, which has the Vendor-Id with value of 3GPP's vendor identifier. The 3GPP specific result codes shall follow the same classification as defined for the values of Result-Code AVP in IETF RFC 3588 [9]. That means, the result codes are grouped to following ranges:

- 1xxx (Informational)
- 2xxx (Success)
- 4xxx (Transient Failures)
- 5xxx (Permanent Failures)

8.1.1 Informational

The Informational result codes shall use the values from 1001 to 1999 in the Experimental-Result-Code AVP.

Editor's note: No informational result codes have been yet defined in 3GPP.

8.1.2 Success

The Success result codes shall use the values from 2001 to 2999 in the Experimental-Result-Code AVP. The reserved 3GPP specific Success result codes are presented in the following table.

Table 8.1.2: 3GPP specific Success result codes

Experimental Result Code	Result text	Specified in the TS
2001	DIAMETER_FIRST_REGISTRATION	29.229 [2]
2002	DIAMETER_SUBSEQUENT_REGISTRATION	
2003	DIAMETER_UNREGISTERED_SERVICE	
2004	DIAMETER_SUCCESS_SERVER_NAME_NOT_STORED	
2005	*Deprecated value*	
Note: The Experimental Result Codes from 2006 to 2020 are reserved for the TS 29.229.		
		29.109 [7]
Note: The Experimental Result Codes from 2401 to 2420 are reserved for the TS 29.109.		

8.1.3 Transient Failures

The Transient Failure result codes shall use the values from 4001 to 4999 in the Experimental-Result-Code AVP. The reserved 3GPP specific Transient Failure result codes are presented in the following table.

Table 8.1.3: 3GPP specific Transient Failure result codes

Experimental Result Code	Result text	Specified in the TS
4100	DIAMETER_USER_DATA_NOT_AVAILABLE	29.329 [4]
4101	DIAMETER_PRIOR_UPDATE_IN_PROGRESS	
Note: The Experimental Result Codes from 4102 to 4120 are reserved for the TS 29.329.		
		32.299 [5]
Note: The Experimental Result Codes from 41xx to 41yy are reserved for the TS 32.299.		

8.1.4 Permanent Failures

The Permanent Failure result codes shall use the values from 5001 to 5999 in the Experimental-Result-Code AVP. The reserved 3GPP specific Permanent Failure result codes are presented in the following table.

Table 8.1.4: 3GPP specific Permanent Failure result codes

Experimental Result Code	Result text	Specified in the TS
5001	DIAMETER_ERROR_USER_UNKNOWN	29.229 [2]
5002	DIAMETER_ERROR_IDENTITIES_DONT_MATCH	
5003	DIAMETER_ERROR_IDENTITY_NOT_REGISTERED	
5004	DIAMETER_ERROR_ROAMING_NOT_ALLOWED	
5005	DIAMETER_ERROR_IDENTITY_ALREADY_REGISTERED	
5006	DIAMETER_ERROR_AUTH_SCHEME_NOT_SUPPORTED	
5007	DIAMETER_ERROR_IN_ASSIGNMENT_TYPE	
5008	DIAMETER_ERROR_TOO_MUCH_DATA	
5009	DIAMETER_ERROR_NOT_SUPPORTED_USER_DATA	
5010	unassigned	
5011	DIAMETER_ERROR_FEATURE_UNSUPPORTED	
Note: The Experimental Result Codes from 5012 to 5020 are reserved for the TS 29.229.		
		32.299 [5]
Note: The Experimental Result Codes from 5021 to 5040 are reserved for the TS 32.299.		
5041	DIAMETER_ERROR_USER_NO_WLAN_SUBSCRIPTION	29.234 [6]
5042	DIAMETER_ERROR_W-APN_UNUSED_BY_USER	
5043	DIAMETER_ERROR_NO_ACCESS_INDEPENDENT_SUBSCRIPTION	
5044	DIAMETER_ERROR_USER_NO_W-APN_SUBSCRIPTION	
Note: The Experimental Result Codes from 5041 to 5060 are reserved for the TS 29.234.		
5061	INVALID_SERVICE_INFORMATION	29.209 [8], 29.211 [17]
5062	FILTER_RESTRICTIONS	
Note: The Experimental Result Codes from 5063 to 5080 are reserved for TS 29.209 and TS 29.211.		
5100	DIAMETER_ERROR_USER_DATA_NOT_RECOGNIZED	29.329 [4]
5101	DIAMETER_ERROR_OPERATION_NOT_ALLOWED	
5102	DIAMETER_ERROR_USER_DATA_CANNOT_BE_READ	
5103	DIAMETER_ERROR_USER_DATA_CANNOT_BE_MODIFIED	
5104	DIAMETER_ERROR_USER_DATA_CANNOT_BE_NOTIFIED	
5105	DIAMETER_ERROR_TRANSPARENT_DATA_OUT_OF_SYNC	
Note: The Experimental Result Codes from 5106 to 5119 are reserved for the TS 29.329.		
5120	DIAMETER_ERROR_START_INDICATION	29.061 [13]
5121	DIAMETER_ERROR_STOP_INDICATION	
5122	DIAMETER_ERROR_UNKNOWN_MBMS_BEARER_SERVICE	
5123	DIAMETER_ERROR_SERVICE_AREA	
Note: The Experimental Result Codes from 5124 to 5139 are reserved for the TS 29.061		
5140	DIAMETER_ERROR_INITIAL_PARAMETERS	29.210 [15]
5141	DIAMETER_ERROR_TRIGGER_EVENT	
Note: The Experimental Result Codes from 5142 to 5159 are reserved for the TS 29.210.		
		29.109 [7]
Note: The Experimental Result Codes from 5400 to 5419 are reserved for the TS 29.109.		

Annex A (informative): Assignment of the Diameter codes and identifiers in 3GPP

This annex defines the recommended assignment procedure of Diameter codes and identifiers within the 3GPP.

A.1 Application identifiers

If a working group detects it will require a new application identifier, it should contact the 3GPP TSG-CN WG 4 via a Liaison Statement. The LS shall contain the name of the Diameter application and a reference to the corresponding 3GPP TS. The 3GPP TSG-CN WG 4 will then request the application identifier from IANA. When the application identifier is received, the corresponding working group will be informed by 3GPP TSG-CN WG 4 and the table 4.1 in this specification will be updated.

According to RFC 3588 the creation of a new application should be avoided if at all possible and therefore it is recommended to use the existing application identifiers whenever possible.

A.2 Command codes

If a working group detects there is a need for a new command code(s) from the 3GPP's range, it should contact the 3GPP TSG-CN WG 4 via an LS. The LS shall contain the reference to the 3GPP TS, which specifies the command(s). The 3GPP TSG-CN WG 4 will inform the assigned command code(s) to the corresponding working group and the table 5.1 in this specification will be updated.

It should be noted that the standard command codes allocated for 3GPP are scarce resource and getting new ones would require IETF specification work to be done. Therefore it is recommended to use the existing command codes whenever possible.

A.3 AVP codes

If a working group detects a Diameter application needs new 3GPP specific AVP codes, it should contact the 3GPP TSG-CN WG 4 via an LS. The LS shall contain the name of the Diameter application and a reference to the corresponding 3GPP TS. The 3GPP TSG-CN WG 4 will allocate a range of 100 AVP codes for the application. The range will be informed to the corresponding working group and the table 7.1 will be updated in this specification to show the reserved range. The working group can use the allocated range as a working assumption when defining the actual AVPs.

When the corresponding working group has specified the AVPs, and the specification has been approved and is under CR control, it should inform the AVPs to the 3GPP TSG-CN WG 4 via an LS. The LS should list the used AVP codes in the form of the table 7.1.

If there will be defined new AVPs for a Diameter application through the CR procedure, the assigned AVP range can be used, but the 3GPP TSG-CN WG 4 should be also informed about the new AVP codes via an LS.

Re-using of the existing AVPs is recommended, but special attention should be paid on the use of enumerated AVPs. Defining new values for an enumerated AVP should be agreed case by case with the working group responsible of the particular enumerated AVP. 3GPP TSG-CN WG 4 shall be informed via an LS about the new values assigned to the enumerated AVP.

A.4 Result codes

If a working group detects a Diameter application needs new 3GPP specific result codes, it should contact the 3GPP TSG-CN WG 4 via an LS. The LS shall contain the name of the Diameter application and a reference to the corresponding 3GPP TS. The 3GPP TSG-CN WG 4 will allocate a range of 20 result codes from each required result

code group for the application. The ranges will be informed to the corresponding working group and the tables in the chapter 8 of this specification will be updated to show the reserved ranges. The working group can use the allocated ranges as a working assumption when defining the actual result codes.

When the corresponding working group has specified the result codes, and the specification has been approved and is under CR control, it should convey the codes to the 3GPP TSG-CN WG 4 via an LS. The LS should list the used result codes in the form of the tables in chapter 8.

If there will be defined new result codes for a Diameter application through the CR procedure, the assigned result code ranges can be used, but the 3GPP TSG-CN WG 4 should be also informed about the new result codes via an LS.

Re-using of the existing result codes is recommended.

Annex B (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
2004-06	CN#24	NP-040292			Version 2.0.0 presented for information and approval	2.0.0	6.0.0
2004-09	CN#25	NP-040401	001		Correction of Charging application reference	6.0.0	6.1.0
2004-09	CN#25	NP-040401	002		Correction of the Application-Id code	6.0.0	6.1.0
2004-09	CN#25	NP-040401	003		Removal of User Data Request Type AVP	6.0.0	6.1.0
2004-09	CN#25	NP-040412	004	1	Re-numbering of 3GPP specific AVP codes.	6.0.0	6.1.0
2004-12	CN#26	NP-040579	006		Inclusion of missing Cx AVPs	6.1.0	6.2.0
2004-12	CN#26	NP-040580	007	1	Reservation of command code 310	6.1.0	6.2.0
2004-12	CN#26	NP-040579	009	1	Addition of Gmb interface	6.1.0	6.2.0
2004-12	CN#26	NP-040600	010	2	Documenting the Reuse of the 3GPP specific application identifier of Ro for Re on the Charging Interfaces	6.1.0	6.2.0
2004-12	CN#26	NP-040579	011		Gq interface allocations	6.1.0	6.2.0
2004-12	CN#26	NP-040579	012		Addition of Gx interface	6.1.0	6.2.0
2005-03	CN#27	NP-050047	040	1	WLAN Diameter AVP and result codes	6.2.0	6.3.0
		NP-050039	043		Allocations for Gx interface		
		NP-050039	045		Allocations for Gmb interface		
		NP-050039	046		Allocations for MMS, MM10 Interface		
2005-06	CT#28	CP-050088	0050		Gx interface allocation correction	6.3.0	6.4.0
		CP-050196	0051	1	Addition of Maximum-Number-Accesses AVP		
2005-09	CT#29	CP-050440	0052	1	Private identities on the Cx	6.4.0	6.5.0
		CP-050310	0053		Addition of Pr reference point to TS 29.230		
		CP-050310	0054		Error code cleanup		
		CP-050310	0056		Addition of Rx ref. point and renaming of Experimental Result Codes		
2005-12	CT#30	CP-050610	0061	1	New AVPs for WLAN	6.5.0	6.6.0
		CP-050612	0062		Additional Gmb AVP Allocation		
		CP-050612	0064		Reservation of AVP codes for 32.299		
2006-03	CT#31	CP-060073	0068		Adding data type of some of WLAN-related AVPs	6.6.0	6.7.0
2006-06	CT#32	CP-060302	0074		S-CSCF reselection removal	6.7.0	6.8.0
2006-12	CT#34	CP-060555	0088		AVP code allocations for Rf and Ro interfaces	6.8.0	6.9.0
		CP-060555	0090		Allocation of new AVP codes for Gmb		

History

Document history		
V6.2.0	December 2004	Publication
V6.3.0	March 2005	Publication
V6.4.0	June 2005	Publication
V6.5.0	September 2005	Publication
V6.6.0	December 2005	Publication
V6.7.0	March 2006	Publication
V6.8.0	June 2006	Publication
V6.9.0	December 2006	Publication