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**Source:** SA5 (Telecom Management)  
**Title:** 3 Rel-5 CR 32.225 IMS Charging  
**Document for:** Decision  
**Agenda Item:** 7.5.3

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Doc-1st-Level	Spec	CR	R	Phase	Subject	Cat	Vers.	Doc-2nd-L	Workitem
SP-040143	32.225	023	-	Rel-5	Correction of AVP Codes and Diameter protocol specific details	F	5.4.0	S5-044044	OAM-CH
SP-040143	32.225	024	-	Rel-5	Corrections on the Session Description Protocol (SDP) parameters	F	5.4.0	S5-044047	OAM-CH
SP-040143	32.225	025	-	Rel-5	Correction of reference to diameter base protocol	F	5.4.0	S5-044151	OAM-CH

## CHANGE REQUEST

⌘ **32.225 CR 023** ⌘ rev - ⌘ Current version: **5.4.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correction of AVP Codes and Diameter protocol specific details		
<b>Source:</b>	⌘ SA5 (patrik.teppo@ericsson.com)		
<b>Work item code:</b>	⌘ OAM-CH	<b>Date:</b>	⌘ 16/01/2004
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ Diameter AVP codes and protocol specific information is missing in TS 32.225.		
<b>Summary of change:</b>	⌘ Allocation of values for AVPs and result codes. 3GPP specific protocol information. Specification of flag rules for the AVPs.		
<b>Consequences if not approved:</b>	⌘ Impossible to implement a standardized 3GPP charging application.		

<b>Clauses affected:</b>	⌘ 7.1, 7.2										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	⌘
Y	N										
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<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<b>Other comments:</b>	⌘										

**How to create CRs using this form:**

## Change in Clause 7.1

### 7.1 Diameter Base Protocol AVPs

The use of the Attribute Value Pairs (AVPs) that are defined in the Diameter Base Protocol [3] is specified in subclause 5.1.3 for offline charging and in subclause 6.1.3 for online charging. The information is summarized in table 7.1 with the base protocol AVPs listed in alphabetical order. Detailed specification of these AVPs is available in the base protocol specifications.

The 3GPP IMS Charging Application uses the value 10415 (3GPP) as *Vendor-Id*.

Those Diameter AVPs that are used for IMS charging are marked "Yes" in table 7.1. Those Diameter AVPs that are not used for IMS charging are marked "No" in table 7.1. This implies that their content can (Yes) or can not (No) be used by the CCF or ECF for charging purposes.

The following symbols (adopted from [3]) are used in the tables:

- <AVP> indicates a mandatory AVP with a fixed position in the message.
- {AVP} indicates a mandatory AVP in the message.
- [AVP] indicates an optional AVP in the message.
- \*AVP indicates that multiple occurrences of an AVP are possible.

**Table 7.1: Use Of Diameter Base Protocol AVPs in IMS**

AVP name	Mechanism	Offline		Online	
	Type	ACR	ACA	ACR	ACA
	Table #	5.4	5.5	6.2	6.3
[Accounting-Multi-Session-Id]		No	No	No	No
[Accounting-RADIUS-Session-Id]		No	No	No	No
[Accounting-Realtime-Required]		No	No	No	No
{Accounting-Record-Number}		Yes	Yes	Yes	Yes
{Accounting-Record-Type}		Yes	Yes	Yes	Yes
[Accounting-Sub-Session-Id]		No	No	No	No
[Acct-Application-Id]		No	No	No	No
[Acct-Interim-Interval]		Yes	Yes	Yes	Yes
{Auth-Application-Id}		-	-	-	-
<Diameter-Header:271,REQ,PXY>		Yes	Yes	Yes	Yes
{Destination-Host}		-	-	-	-
{Destination-Realm}		Yes	-	Yes	-
[Error-Message]		-	-	-	-
[Error-Reporting-Host]		-	No	-	No
[Event-Timestamp]		Yes	Yes	Yes	Yes
*[Failed-AVP]		-	-	-	-
*[Proxy-Info]		No	No	No	No
{Origin-Host}		Yes	Yes	Yes	Yes
{Origin-Realm}		Yes	Yes	Yes	Yes
[Origin-State-Id]		Yes	Yes	Yes	Yes
*[Redirected-Host]		-	-	-	-
[Redirected-Host-Usage]		-	-	-	-
[Redirected-Max-Cache-Time]		-	-	-	-
{Result-Code}		-	Yes	-	Yes
*[Route-Record]		No	-	No	-
<Session-Id>		Yes	Yes	Yes	Yes
[User-Name]		Yes	Yes	Yes	Yes
[Vendor-Specific-Application-Id]		Yes	Yes	Yes	Yes

NOTE: *Result-Code* AVP is defined in Diameter Base Protocol [3]. However new values are used in IMS charging applications. These additional values are defined below.

### 7.1.1 Acct-Application-Id AVP

The Acct-Application-Id AVP (AVP code 259), as part of the Vendor-Specific-Application-Id grouped AVP, shall contain the value of 1 ie. the same application id as used by the Cx interface protocol as defined in [19].

### 7.1.24 Result-Code AVP

This subclause defines new *Result-Code* AVP (AVP code 298~~Diameter Base Protocol [3]~~) values that must be supported by all Diameter implementations that conform to the present document.

The *Accounting-Answer* message includes the *Result-Code* AVP, which may indicate that an error was present in the *Accounting-Request* message. A rejected *Accounting-Request* message should cause the user's session to be terminated.

Errors that fall within the transient failures category are used to inform a peer that the request could not be satisfied at the time it was received, but MAY be able to satisfy the request in the future.

DIAMETER\_END\_USER\_SERVICE\_DENIED                      41000XX

The ECF denies the service request due to service restrictions or limitations related to the end-user, for example the end-user's account could not cover the requested service.

DIAMETER\_CREDIT\_CONTROL\_NOT\_APPLICABLE              41020XX

The credit control server determines that the service can be granted to the end user but no further credit control needed for the service (e.g. service is free of charge).

Errors that fall within permanent failure category are used to inform the peer that the request failed, and should not be attempted again.

DIAMETER\_END\_USER\_NOT\_FOUND                              51000XX

The specified end user could not be found in the CCF or ECF.

### 7.1.32 User-Name AVP

The *User-Name* AVP (AVP code 1) contains the Private User Identity [18], if available in the node.

### 7.1.4 Vendor-Id AVP

The Vendor-Id AVP (AVP code 266), as part of the Vendor-Specific-Application-Id grouped AVP, shall contain the value of 10415, which is the IANA registered value for '3GPP'.

### ~~7.1.3 Vendor-Specific-Application-Id AVP~~

**End of Change in Clause 7.1**

**Change in Clause 7.2**

## 7.2 Additional AVPs

For the purpose of IMS charging additional AVPs are used in ACR and ACA for both online and offline charging. The use of these AVPs are described in subclause 5.1.3 for offline charging and in subclause 6.1.3 for online charging. The information is summarized in table 7.2 along with the AVP flag rules.

Detailed descriptions of AVPs that are used specifically for IMS charging are provided in the subclauses below the table. However, for AVPs that are just borrowed from other applications only the reference (e.g. [13]), is provided in table 7.2 and the detailed description is not repeated.

**Table 7.2: Use Of Diameter Credit Control and 3GPP accounting AVPs for IMS**

AVP Name	AVP Code	Clause Defined	Value Type	AVP Flag rules				
				Must	May	Should not	Must not	May Enchr.
<b>AVPs from Diameter Credit Control</b>								
[Subscription-Id]	<a href="#">200</a>	[13]						
[Requested-Action]	<a href="#">201</a>	[13]						
*[Used-Service-Unit]	<a href="#">202</a>	7.2.44	Grouped					
{Unit-Type}	<a href="#">203</a>	7.2.41	Enumerated					
{Unit-Value}	<a href="#">204</a>	7.2.42	Float64					
{Unit-Value-After-Tariff-Switch}	<a href="#">205</a>	7.3.43	Float64					
{Currency-Code}	<a href="#">206</a>	[13]						
[Tariff-Switch-Definition]	<a href="#">207</a>	7.2.37	OctetString					
*[Service-Parameter-Info]	<a href="#">208</a>	[13]						
[Abnormal-Termination-Reason]	<a href="#">209</a>	[13]						
*[Accounting-Correlation-Id]	<a href="#">210</a>	[13]						
[Credit-Control-Failure-Handling]	<a href="#">211</a>	[13]						
[Direct-Debiting-Failure-Handling]	<a href="#">212</a>	[13]						
*[Granted-Service-Unit]	<a href="#">213</a>	7.2.19	Grouped					
{Unit-Type}	<a href="#">214</a>	7.2.41	Enumerated					
{Unit-Value}	<a href="#">215</a>	7.2.42	Float64					
{Unit-Value-After-Tariff-Switch}	<a href="#">216</a>	7.3.43	Float64					
{Currency-Code}	<a href="#">217</a>	[13]						
[Cost-Information]	<a href="#">218</a>	7.2.13	Grouped					
{Cost}	<a href="#">219</a>	[13]						
{Currency-Code}	<a href="#">220</a>	[13]						
[Final-Unit-Indication]	<a href="#">221</a>	[13]						
[Check-Balance-Result]	<a href="#">222</a>	[13]						
<b>3GPP Diameter Accounting AVPs</b>								
[Event-Type]	<a href="#">223</a>	7.2.16	Grouped					
[SIP-Method]	<a href="#">224</a>	7.2.34	UTF8String					
[Event]	<a href="#">225</a>	7.2.15	UTF8String					
[Content-Type]	<a href="#">226</a>	7.2.12	UTF8String					
[Content-Length]	<a href="#">227</a>	7.2.11	UTF8String					
[Content-Disposition]	<a href="#">228</a>	7.2.10	UTF8String					
[Role-of-Node]	<a href="#">229</a>	7.2.27	Enumerated					
[User Session Id]	<a href="#">230</a>	7.2.45	UTF8String					
[Calling-Party-Address]	<a href="#">231</a>	7.2.7	UTF8String					
[Called-Party-Address]	<a href="#">232</a>	7.2.6	UTF8String					
[Time-stamps]	<a href="#">233</a>	7.2.39	Grouped					
[SIP-Request-Timestamp]	<a href="#">234</a>	7.2.35	UTF8String					
[SIP-Response-Timestamp]	<a href="#">235</a>	7.2.36	UTF8String					
[Application-server]	<a href="#">236</a>	7.2.3	UTF8String					
[Application-provided-called-party-address]	<a href="#">237</a>	7.2.2	UTF8String					
[Inter-Operator-Identifier]	<a href="#">238</a>	7.2.22	Grouped					
[Originating-IOI]	<a href="#">239</a>	7.2.25	UTF8String					
[Terminating-IOI]	<a href="#">240</a>	7.2.38	UTF8String					
[IMS-Charging-Identifier]	<a href="#">241</a>	7.2.20	UTF8String					
*[SDP-Session-Description]	<a href="#">242</a>	7.2.31	UTF8String					
*[SDP-Media-component]	<a href="#">243</a>	7.2.28	Grouped					
[SDP-Media-Name]	<a href="#">244</a>	7.2.30	UTF8String					
*[SDP-Media-Description]	<a href="#">245</a>	7.2.29	UTF8String					
[GPRS-Charging-Id]	<a href="#">246</a>	7.2.18	UTF8String					
[GGSN-Address]	<a href="#">247</a>	7.2.17	IPAddress					
[Served-Party-IP-Address]	<a href="#">248</a>	7.2.32	IPAddress					
[Authorized-QoS]	<a href="#">249</a>	7.2.4	UTF8String					
[Server-Capabilities]	<a href="#">250</a>	[19]						
[Trunk-Group-Id]	<a href="#">251</a>	7.2.40	Grouped					
[Incoming-Trunk-Group-Id]	<a href="#">252</a>	7.2.21	UTF8String					
[Outgoing-Trunk-Group-Id]	<a href="#">253</a>	7.2.26	UTF8String					
[Bearer-Service]	<a href="#">254</a>	7.2.5	OctetString					
[Service-Id]	<a href="#">255</a>	7.2.33	UTF8String					
[UUS-Data]	<a href="#">256</a>	7.2.46	Grouped					
[Amount-of-UUS-data]	<a href="#">257</a>	7.2.1	UTF8String					
[Mime-type]	<a href="#">258</a>	7.2.23	UTF8String					
[Direction]	<a href="#">259</a>	7.2.14	Enumerated					
[Cause]	<a href="#">260</a>	7.2.8	Grouped					
{Cause-Code}	<a href="#">261</a>	7.2.9	Enumerated					
{Node-Functionality}	<a href="#">262</a>	7.2.24	Enumerated					

## 7.2.1 Amount-of-UUS-Data AVP

The *Amount-Of-UUS-Data* AVP (AVP code ~~TBD~~257) is of type UTF8String and holds the amount (in octets) of User-to-User data conveyed in the body of the SIP message with content-disposition header field equal to "render".

## 7.2.2 Application-Provided-Called-Party-Address AVP

The *Application-Provided-Called-Party-Address* AVP (AVP code ~~TBD~~237) is of type UTF8String and holds the called party number (SIP URL, E.164), if it is determined by an application server.

## 7.2.3 Application-Server AVP

The *Application-Server* AVP (AVP code ~~TBD~~236) is of type UTF8String and holds the SIP URL(s) of the AS(s) addressed during the session.

## 7.2.4 Authorised-QoS AVP

The *Authorised-QoS* AVP (AVP code ~~TBD~~249) is of type UTF8String and holds the Authorised QoS as defined in TS 23.207 [7] / TS 29.207 [8] and applied via the Go interface.

## 7.2.5 Bearer-Service AVP

The *Bearer-Service* AVP (AVP code ~~TBD~~254) is of type OctetString and holds the used bearer service for the PSTN leg.

## 7.2.6 Called-Party-Address AVP

The *Called-Party-Address* AVP (AVP code ~~TBD~~232) is of type UTF8String and holds the address (Public User ID: SIP URL, E.164, etc.) of the party to whom a session is established.

## 7.2.7 Calling-Party-Address AVP

The *Calling-Party-Address* AVP (AVP code ~~TBD~~231) is of type UTF8String and holds the address (Public User ID: SIP URL, E.164, etc.) of the party initiating a session.

## 7.2.8 Cause AVP

The *Cause* AVP (AVP code ~~TBD~~260) is of type Grouped. The Cause AVP includes the *Cause-Code* AVP that contains the cause value and the *Node-Functionality* AVP that contains the function of the node where the cause code was generated.

*Cause* has the following ABNF grammar:

```
<Cause> ::= <AVP Header: TBD260>
           {Cause-Code}
           {Node-Functionality}
```

## 7.2.9 Cause-Code AVP

The *Cause-Code* AVP (AVP code ~~TBD~~261) is of type Enumerated and includes the cause code value from IMS node. It is used in Accounting-request[stop] and/or Accounting-request[event] messages.

Within the cause codes, values  $\leq 0$  are reserved for successful causes while values  $\geq 1$  are used for failure causes. In case of errors where the session has been terminated as a result of a specific known SIP error code, then the SIP error code is also used as the cause code.

**Successful cause code values.**

"Normal end of session" 0

The cause "Normal end of session" is used in Accounting-request[stop] message to indicate that an ongoing SIP session has been normally released either by the user or by the network (SIP BYE message initiated by the user or initiated by the network has been received by the IMS node after the reception of the SIP ACK message).

"Successful transaction" -1

The cause "Successful transaction" is used in Accounting-request[event] message to indicate a successful SIP transaction (e.g. REGISTER, MESSAGE, NOTIFY, SUBSCRIBE). It may also be used by an Application Server to indicate successful service event execution.

"End of SUBSCRIBE dialog" -2

The cause "End of SUBSCRIBE dialog" is used to indicate the closure of a SIP SUBSCRIBE dialog . For instance a successful SIP SUBSCRIBE transaction terminating the dialog has been detected by the IMS node (i.e. SUBSCRIBE with expire time set to 0).

"3xx Redirection" -3xx

The cause "3xx Redirection" is used when the SIP transaction is terminated due to an IMS node receiving/initiating a 3xx response [16].

#### Failure cause code values.

"Unspecified error" 1

The cause "Unspecified error" is used when the SIP transaction is terminated due to an unknown error.

" 4xx Request failure" 4xx

The cause "4xx Request failure" is used when the SIP transaction is terminated due to an IMS node receiving/initiating a 4xx error response [16].

"5xx Server failure" 5xx

The cause "5xx Server failure" is used when the SIP transaction is terminated due to an IMS node receiving/initiating a 5xx error response [16].

"6xx Global failure" 6xx

The cause "6xx Global failure" is used when the SIP transaction is terminated due to an IMS node receiving/initiating a 6xx error response [16].

"Unsuccessful session setup" 2

The cause "Unsuccessful session setup" is used in the Accounting-request[stop] when the SIP session has not been successfully established (i.e. Timer H expires and SIP ACK is not received or SIP BYE is received after reception of the 200OK final response and SIP ACK is not received) [14] [16].

"Internal error" 3

The cause "Internal error" is used when the SIP transaction is terminated due to an IMS node internal error (e.g. error in processing a request/response).

## 7.2.10 Content-Disposition AVP

The *Content-Disposition* AVP (AVP code [FBD228](#)) is of type UTF8String and indicates how the message body or a message body part is to be interpreted (e.g. session, render), as described in [17].

## 7.2.11 Content-Length AVP

The *Content-Length* AVP (AVP code [FBD227](#)) is of type UTF8String and holds the size of the of the message-body, as described in [17].

## 7.2.12 Content-Type AVP

The *Content-Type* AVP (AVP code [TBD226](#)) is of type UTF8String and holds the media type (e.g. application/sdp, text/html) of the message-body, as described in [17].

## 7.2.13 Cost-Information AVP

The *Cost-Information* AVP (AVP Code [TBD218](#)) is of type Grouped and is used to return the cost information of a service in the *Accounting-Answer* command. The included *Cost* AVP contains the cost of the service event and the *Currency-Code* specifies in which currency the cost was given.

When the *Requested-Action* AVP with value PRICE\_ENQUIRY is included in the *Accounting-Request* command the *Cost-Information* AVP sent in the succeeding *Accounting-Answer* command contains the cost estimation of the requested service, without any reservation being made.

The *Cost-Information* AVP included in the *Accounting-Answer* command with the *Accounting-Record-Type* set to INTERIM\_RECORD contains the accumulated cost for the session without taking any credit- reservation into account.

The *Cost-Information* AVP included in the *Accounting-Answer* command with the *Accounting-Record-Type* set to EVENT\_RECORD or STOP\_RECORD contains the total cost for the requested service. It has the following ABNF grammar.

When the Requested-Action AVP is set to RESERVE\_UNITS in the *Accounting-Request* (ACR) and the Unit-Type in the *Requested-Service-Unit* AVP is set to SERVICE\_CREDIT\_MONEY, the *Cost-Information* AVP sent in the succeeding *Accounting Answer* (ACA) contains the requested cost information.

It has the following ABNF grammar:

```
<Cost-Information> ::= <AVP Header: TBD218>
    { Cost }
    { Currency-Code }
```

## 7.2.14 Direction AVP

The *Direction* AVP (AVP code [TBD259](#)) is of type Enumerated and indicates whether the UUS data travels in up-link or down-link direction. The following values are defined:

UPLINK	0
DOWNLINK	1

## 7.2.15 Event AVP

The *Event* AVP (AVP code [TBD225](#)) is of type UTF8String and holds the content of the "Event" header used in SUBSCRIBE and NOTIFY messages.

## 7.2.16 Event-Type AVP

~~Reflects the type of chargeable telecommunication service/event for which the accounting request message is generated, such as: "session", "register", "subscribe".~~

The ~~IMS-Event-Type~~ AVP (AVP code [TBD223](#)) is of type Grouped and contains information about the type of chargeable telecommunication service/event for which the accounting-request message is generated.

It has the following ABNF grammar:

```
<IMS-Event-Type> ::= <AVP Header: TBD-223>
    [ SIP-Method ]
    [ Event ]
```



[ Content-Type ]

[ Content-Length ]

[ Content-Disposition ]

## 7.2.17 GGSN-Address AVP

The *GGSN-Address* AVP (AVP code [TBD247](#)) is of type IPAddress and holds the IP-address of the GGSN that generated the GPRS Charging ID, as described in [2].

## 7.2.18 GPRS-Charging-ID AVP

The *GPRS-Charging-ID* AVP (AVP code [TBD246](#)) is of type UTF8String and holds a sequence number generated by the GGSN at PDP context activation, as described in [2].

## 7.2.19 Granted-Service-Unit AVP

If the ACA containing the *Granted-Service-Unit* AVP ([AVP code 213](#)) contains a *Tariff-Switch-Definition* AVP, the *Unit-Value-After-Tariff-Switch* AVP may be included. In this case the *Unit-Value* AVP contains the granted units before the tariff switch time and the *Unit-Value-After-Tariff-Switch* AVP gives the units granted after the tariff switch.

If the ACA containing the *Granted-Service-Unit* AVP contains a *Tariff-Switch-Definition* AVP but *no Unit-Value-After-Tariff-Switch* AVP is included, the granted *Unit-Value* is used before and after the tariff switch.

An ACA containing a *Granted-Service-Unit* AVP with *Unit-Value-After-Tariff-Switch* AVP MUST contain a *Tariff-Switch-Definition* AVP. If the *Tariff-Switch-Definition* AVP is missing, the *Unit-Value-After-Tariff-Switch* AVP is ignored and it is proceeded as without a tariff change.

It has the following ABNF grammar:

```
<Granted-Service-Unit>::=< AVP Header: TBD-213>
    { Unit-Type }
    { Unit-Value }
    [ Unit-Value-After-Tariff Switch ]
    [ Currency-Code ]
```

## 7.2.20 IMS-Charging-Identifier (ICID) AVP

The *IMS-Charging-Identifier* AVP (AVP code [TBD241](#)) is of type UTF8String and holds the IMS Charging Identifier (ICID) as generated by a IMS node for a SIP session and described in subclause 5.2.4.10.

## 7.2.21 Incoming-Trunk-Group-ID AVP

The *Incoming-Trunk-Group-ID* AVP (AVP code [TBD252](#)) is of type UTF8String and identifies the incoming PSTN leg.

## 7.2.22 Inter-Operator-Identifier ~~(IOI)~~ AVP

The *Inter-Operator-Identifier* AVP (AVP code [TBD238](#)) is of type Grouped and holds the identification of the network neighbours (originating and terminating) as exchanged via SIP signalling and described in [15].

It has the following ABNF grammar:

```
<Inter-Operator-Identifier>::=< AVP Header: TBD-238>
    [ Originating-IOI ]
```

[ Terminating-IOI ]

### 7.2.23 Mime-Type AVP

The *Mime-Type* AVP (AVP code [TBD258](#)) is of type UTF8String and holds the Mime type of the User-To-User data.

### 7.2.24 Node-Functionality AVP

The *Node-Functionality* AVP (AVP code [TBD262](#)) is of type Enumerated and includes the *functionality* identifier of the *node* where the cause code was generated.

The functionality identifier can be one of the following:

S-CSCF	0
P-CSCF	1
I-CSCF	2
MRFC	3
MGCF	4
BGCF	5
AS	6
UE	7

### 7.2.25 Originating-IOI AVP

The *Originating-IOI* AVP (AVP code [TBD239](#)) is of type UTF8String (alphanumeric string) and holds the Inter Operator Identifier for the originating network as generated by the S-CSCF in the home network of the originating end user [15].

### 7.2.26 Outgoing-Trunk-Group-ID AVP

The *Outgoing-Trunk-Group-ID* AVP (AVP code [TBD253](#)) is of type UTF8String and identifies the outgoing PSTN leg.

### 7.2.27 Role-of-Node AVP

The *Role-Of-Node* AVP (AVP code [TBD229](#)) is of type Enumerated and specifies the role of the AS/CSCF.

The identifier can be one of the following:

ORIGINATING_ROLE	0	The AS/CSCF is applying a originating role, serving the calling subscriber.
TERMINATING_ROLE	1	The AS/CSCF is applying a terminating role, serving the called subscriber.
PROXY_ROLE	2	The AS is applying a proxy role.
B2BUA_ROLE	3	The AS is applying a B2BUA role.

### 7.2.28 SDP-Media-Component AVP

The *SDP-Media-Component* AVP (AVP code [TBD243](#)) is of type Grouped and contains information about media used for a IMS session.

It has the following ABNF grammar:

```
<SDP-Media-Component>::=<AVP Header: TBD-243 >  
    [ SDP-Media-Name ]  
    *[ SDP-Media-Description ]  
    [ GPRS-Charging-Id ]
```

### 7.2.29 SDP-Media-Description AVP

The *SDP-Media-Description* AVP (AVP code [TBD245](#)) is of type UTF8String and holds the content of an "attribute-line" (i=, c=, b=, k=, a=, etc.) related to a media component, as described in [17]. The attributes are specifying the media described in the SDP-Media-Name AVP.

### 7.2.30 SDP-Media-Name AVP

The *SDP-Media-Name* AVP (AVP code [TBD244](#)) is of type UTF8String and holds the content of a "m=" line in the SDP data.

### 7.2.31 SDP-Session-Description AVP

The *SDP-Media-Description* AVP (AVP code [TBD242](#)) is of type UTF8String and holds the content of an "attribute-line" (i=, c=, b=, k=, a=, etc.) related to a session, as described in [17].

### 7.2.32 Served-Party-IP-Address AVP

The *Served-Party-IP-Address* AVP (AVP code [TBD248](#)) is of type IPAddress and holds the IP address of either the calling or called party, depending on whether the P-CSCF is in touch with the calling or the called party. This AVP is only provided by the P-CSCF.

### 7.2.33 Service-ID AVP

The *Service-ID* AVP (AVP code [TBD255](#)) is of type UTF8String and identifies the service the MRFC is hosting. For conferences the conference ID is used as the value of this parameter.

### 7.2.34 SIP-Method AVP

The *SIP-Method* AVP (AVP code [TBD224](#)) is of type UTF8String and holds the name of the SIP Method (INVITE, UPDATE etc.) causing an accounting request to be sent to the CCF.

### 7.2.35 SIP-Request-Timestamp AVP

The *SIP-Request-Timestamp* AVP (AVP code [TBD234](#)) is of type UTF8String and holds the time in UTC format of the initial SIP request (e.g. Invite).

### 7.2.36 SIP-Response-Timestamp AVP

The *SIP-Response-Timestamp* AVP (AVP code [TBD235](#)) is of type UTF8String and holds the time in UTC format of the response to the initial SIP request (e.g. 200 OK).

### 7.3.37 Tariff-Switch-Definition AVP

The *Tariff-Switch-Definition* AVP (AVP Code [TBD207](#)) is of type OctetString and contains the tariff switch timer.

This AVP can be included in the *Accounting Answer* which is sent as a result of the previous *Accounting Request* with *Requested-Action* AVP set to RESERVE\_UNITS. The tariff switch timer is evaluated relative to the timestamp of the

preceding *Accounting Request* command. When the tariff switch timer expires, the AS/MRFC uses the *Unit-Value-After-Tariff-Switch*, if provided in the ACA, as granted units.

If a tariff switch has occurred, the *Tariff-Switch-Definition* AVP should be included in the next ACR together with the units used before the tariff switch (*Unit-Value* AVP) and the units used after the tariff switch (*Unit-Value-After-Tariff-Switch* AVP).

### 7.2.38 Terminating-IOI AVP

The *Terminating-IOI* AVP (AVP code [TBD240](#)) is of type UTF8String (alphanumeric string) and holds the Inter Operator Identifier for the originating network as generated by the S-CSCF in the home network of the terminating end user [15].

### 7.2.39 Time-Stamps AVP

The *Time-Stamp* AVP (AVP code [TBD233](#)) is of type Grouped and holds the time of the initial SIP request and the time of the response to the initial SIP Request.

It has the following ABNF grammar:

```
<Time-Stamps>::=< AVP Header: TBD-233>
    [SIP-Request-Timestamp]
    [SIP-Response-Timestamp]
```

### 7.2.40 Trunk-Group-ID AVP

The *Trunk-Group-ID* AVP (AVP code [TBD251](#)) is of type Grouped and identifies the incoming and outgoing PSTN legs.

It has the following ABNF grammar:

```
<Trunk-Group-ID>::=<AVP Header: TBD251>
    [ Incoming-Trunk-Group-ID ]
    [ Outgoing-Trunk-Group-ID ]
```

### 7.2.41 Unit-Type AVP

The *Unit-Type* AVP is of type Enumerated (AVP Code [TBD203](#)) and contains the type of the unit. The unit type can be one of the following:

SERVICE\_CREDIT\_TIME 0

The unit is of type "time" and is given in seconds.

SERVICE\_CREDIT\_VOLUME 1

The unit is of type "volume" and is given in kB.

SERVICE\_CREDIT\_EVENT 2

The unit is of type "event" and is given as a number of events.

SERVICE\_CREDIT\_MONEY 3

The unit is of type "money" and is given as a monetary value, whose currency SHOULD be specified by the *Currency-Code* AVP.

SERVICE\_CREDIT\_SERVICE 4

The unit of type "service" and is given as a selected service.

## 7.2.42 Unit-Value AVP

The *Unit-Value* AVP is of type Float64 (AVP Code [TBD204](#)) and contains the granted or used Unit-Value. The value can be time in seconds, volume in kB, number of events or monetary amount depending on the given *Unit-Type*.

If the *Unit-Type* AVP is set to "time" in the *Accounting-Answer* command, the *Unit Value* AVP specifies the granted time in seconds (measured from the moment when the services becomes active or from the previous Answer command) until a new *Accounting-Request* MUST be sent.

If the *Unit Type* AVP is set to "time" in the *Accounting-Request* command, the *Unit-Value* AVP specifies the used time since previous report or time requested by the service element (e.g. AS/MRFC).

If the *Unit-Type* AVP is set to "volume" in the *Accounting-Answer* command, the *Unit-Value* AVP specifies the granted volume in kB (measured from the moment when the services becomes active or from the previous Answer command) until a new *Accounting-Request* MUST be sent. If the *Unit-type* AVP is set to "volume" in the *Accounting-Request* command, the *Unit-Value* AVP specifies the used volume since previous report or volume requested by service element (e.g. AS/MRFC).

If the *Unit-Type* AVP is set to "event" in the *Accounting-Answer* command, the *Unit-Value* AVP specifies the granted number of events (measured from the moment when the service becomes active or from the previous Answer command) until a new *Accounting-Request* MUST be sent. If the *Unit-type* AVP is set to "event" in the *Accounting-Request* command, the *Unit-Value* AVP specifies the used number of events since previous report or number of events requested by the service element (e.g. AS/MRFC).

If the *Unit-Type* AVP is set to "money" in the *Accounting-Answer* command, the *Unit-Value* AVP specifies the granted monetary amount, which the end user can use until a new *Accounting-Request* MUST be sent. If the *Unit-Type* AVP is set to "money" in the *Accounting-Request* command, the *Unit-Value* AVP specifies the used monetary amount since previous report or the monetary amount requested by the service element (e.g. AS/MRFC).

If the *Accounting-Answer* command contains a *Tariff-Switch-Definition* AVP and a *Unit-Value-After-Tariff-Switch* AVP, the *Unit-Value* AVP in the *Accounting-Answer* contains the amount of units granted before the tariff change. In this case, the following holds:

- If the *Unit-Type* AVP is set to "time" in the *Accounting-Answer* command, the *Unit Value* AVP specifies the granted time before the tariff switch in seconds (measured from the moment when the services becomes active or from the previous Answer command) until the tariff switch occurs or a new *Accounting-Request* MUST be sent.
- If the *Unit-Type* AVP is set to "volume" in the *Accounting-Answer* command, the *Unit-Value* AVP specifies the granted volume before the tariff switch in kB (measured from the moment when the services becomes active or from the previous Answer command) until the tariff switch occurs or a new *Accounting-Request* MUST be sent.
- If the *Unit-Type* AVP is set to "event" in the *Accounting-Answer* command, the *Unit-Value* AVP specifies the granted number of events before the tariff switch (measured from the moment when the service becomes active or from the previous Answer command) until the tariff switch occurs or a new *Accounting-Request* MUST be sent.
- If the *Unit-Type* AVP is set to "money" in the *Accounting-Answer* command, the *Unit-Value* AVP specifies the granted monetary amount before the tariff switch, which the end user can use until the tariff switch occurs or a new *Accounting-Request* MUST be sent.

If the *Accounting-Answer* command contains a *Tariff-Switch-Definition* AVP but no *Unit-Value-After-Tariff-Switch* AVP, the *Unit-Value* AVP in the *Accounting-Answer* contains the total amount of units granted irrespective of the tariff change.

If the *Accounting-Answer* command contains a *Tariff-Switch-Definition* AVP and a tariff switch occurred, the next *Accounting-Request* contains the *Unit-Value* AVP and the *Unit-Value-After-Tariff-Switch* AVP. The *Unit-Value* AVP contains the service units used before the tariff switch.

## 7.3.43 Unit-Value-After-Tariff-Switch AVP

The *Unit-Value-After-Tariff-Switch* AVP is of type Float64 (AVP Code [TBD205](#)) and contains the granted or used Unit-Value after a tariff switch. The value can be time in seconds, volume in kB, number of events or monetary amount depending on the given *Unit-Type*.

The *Unit-Value-After-Tariff-Switch* AVP can only occur in combination with a *Tariff-Switch-Definition* AVP.

If the *Unit-Type* AVP is set to "time" in the *Accounting-Answer* command, the *Unit-Value-After-Tariff-Switch* AVP specifies the granted time in seconds (measured from the moment when the tariff change occurs) until a new *Accounting-Request* MUST be sent.

If the *Unit Type* AVP is set to "time" in the *Accounting-Request* command, the *Unit-Value-After-Tariff-Switch* AVP specifies the used time after tariff switch.

If the *Unit-Type* AVP is set to "volume" in the *Accounting-Answer* command, the *Unit-Value-After-Tariff-Switch* AVP specifies the granted volume in kB (measured from the moment when the tariff change occurs) until a new *Accounting-Request* MUST be sent. If the *Unit-type* AVP is set to "volume" in the *Accounting-Request* command, the *Unit-Value-After-Tariff-Switch* AVP specifies the used volume after tariff switch.

If the *Unit-Type* AVP is set to "event" in the *Accounting-Answer* command, the *Unit-Value-After-Tariff-Switch* AVP specifies the granted number of events (measured from the moment when the tariff change occurs) until a new *Accounting-Request* MUST be sent. If the *Unit-type* AVP is set to "event" in the *Accounting-Request* command, the *Unit-Value-After-Tariff-Switch* AVP specifies the used number of events after tariff switch.

If the *Unit-Type* AVP is set to "money" in the *Accounting-Answer* command, the *Unit-Value-After-Tariff-Switch* AVP specifies the granted monetary amount, which the end user can use (measured from the moment when the tariff change occurs) until a new *Accounting-Request* MUST be sent. If the *Unit-Type* AVP is set to "money" in the *Accounting-Request* command, the *Unit-Value-After-Tariff-Switch* AVP specifies the used monetary amount after tariff switch.

## 7.2.44 Used-Service-Unit AVP

The *Used-Service-Unit* AVP is of type Grouped AVP (AVP Code [TBD202](#)) and contains the amount of used units since the previous *Accounting-Answer* command. The included *Unit-Type* AVP defines the type of the unit and the *Unit-Value* AVP contains the used amount. If the unit type is "money", a *Currency-Code* AVP SHOULD be included.

If the previous ACA contained a *Tariff-Switch-Definition* AVP, the *Unit-Value-After-Tariff-Switch* AVP must be included in the *Used-Service-Unit* AVP in the ACR, if the tariff switch was encountered. In this case the *Unit-Value* AVP contains the units used before the tariff switch and the *Unit-Value-After-Tariff-Switch* AVP gives the units used after the tariff switch.

It has the following ABNF grammar:

```
<Used-Service-Unit>::=< AVP Header: TBD-202>
    { Unit-Type }
    { Unit-Value }
    { Unit-Value-After-Tariff-Switch }
    [ Currency-Code ]
```

## 7.2.45 User-Session-ID AVP

The *User-Session-Id* AVP (AVP code [TBD230](#)) is of type UTF8String and holds the session identifier. For a SIP session the *Session-ID* contains the SIP Call ID, as defined in [16].

## 7.2.46 UUS-Data AVP

The *UUS-Data* AVP (AVP Code [TBD256](#)) is of type Grouped AVP and holds information about the sent User-To-User data.

It has the following ABNF grammar:

```
<Used-Service-Unit>::=< AVP Header: TBD-256>
    [Amount-of-UUS-Data]
```

[Mime-Type]

[Direction]

**End of Change in Clause 7.2**  
**End of Document**

## CHANGE REQUEST

⌘ **32.225 CR 024** ⌘ rev - ⌘ Current version: **5.4.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Corrections on the Session Description Protocol (SDP) parameters		
<b>Source:</b>	⌘ SA5 (alain.bibas@francetelecom.com)		
<b>Work item code:</b>	⌘ OAM-CH	<b>Date:</b>	⌘ 16/01/2004
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ In TS 32.225, it is specified that the IMS CDRs shall contain SDP related parameters. However, the SIP 200 OK to the SIP INVITE message may contain no SDP payload.  Thus, when receiving the 200 OK to INVITE, the x-CSCF, BGCF, MGCF may not be able to fill the "SDP Session Description" and "SDP Media Component" headers in the Accounting request to the CCF.
<b>Summary of change:</b>	⌘ The value for "SDP Session Description" and "SDP Media Component" headers shall be retrieved from the SDP payload of SIP messages and stored at the x-CSCF, BGCF, MGCF.  These parameters shall be updated in the x-CSCF, BGCF, MGCF when the SDP changes in the SIP transaction.  These parameters shall be present in: - any Accounting Request [Start] and Accounting Request [Event] sent at the reception of 200 OK to INVITE - any Accounting Request [Interim] sent at the reception of 200 OK to INVITE or 200 OK to UPDATE.
<b>Consequences if not approved:</b>	⌘ The CCF will not receive the complete information to produce for off-line charging and will not be able to perform charging per media component.

<b>Clauses affected:</b>	⌘ 5.1.3.3, 5.2.4.31, 5.2.4.34										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	⌘	X	⌘	X	⌘	X	Other core specifications Test specifications O&M Specifications	⌘
Y	N										
⌘	X										
⌘	X										
⌘	X										
<b>Other comments:</b>	⌘										

**How to create CRs using this form:**



## Change in Clause 5.1.3.3

### 5.1.3.3 Detailed Message Formats

Following the base protocol specification, the following "types" of accounting data may be sent:

- Start session accounting data.
- Interim session accounting data.
- Stop session accounting data.
- Event accounting data.

ACR types Start, Interim and Stop are used for accounting data related to successful SIP sessions. In contrast, Event accounting data is unrelated accounting data, such as a simple registration or interrogation and successful service event triggered by an AS. In addition, Event accounting data are also used for unsuccessful SIP session establishment attempts.

The following table specifies per ACR type the accounting data that are sent by each of the IMS network elements:

- S-CSCF
- P-CSCF
- I-CSCF
- MRFC
- MGCF
- BGCF
- AS

The ACR types in the table are listed in the following order: S (start)/I (interim)/S (stop)/E (event). Therefore, when all ACR types are possible it is marked as SISE. If only some ACR types are allowed for a node, only the appropriate letters are used (i.e. SIS or E) as indicated in the table heading. The omission of an ACR type for a particular AVP is marked with "-" (i.e. SI-E). Also, when an entire AVP is not allowed in a node the entire cell is marked as "-".

Note that not for all Grouped AVPs the individual AVP members are listed in the table. See clause 7 for a detailed list of the AVP group members and for the description of the AVPs.

For the ACA the same details listed in table 5.8 applies with the addition that *Error-Reporting-Host* AVP is supported in all ACAs in a similar manner as most other base protocol AVPs (e.g. in the same manner as *Origin-State-Id* AVP).

**Table 5.8: Detailed Diameter ACR Message Contents for Offline Charging**

AVP name	Node Type	S-CSCF	P-CSCF	I-CSCF	MRFC	MGCF	BGCF	AS
	Supported ACRs	S/I/S/E	S/I/S/E	E	S/I/S	S/I/S/E	S/I/S/E	S/I/S/E
<b>AVPs from the Diameter base protocol</b>								
<Session-Id>		SISE	SISE	E	SIS	SISE	SISE	SISE
{Origin-Host}		SISE	SISE	E	SIS	SISE	SISE	SISE
{Origin-Realm}		SISE	SISE	E	SIS	SISE	SISE	SISE
{Destination-Realm}		SISE	SISE	E	SIS	SISE	SISE	SISE
{Accounting-Record-Type}		SISE	SISE	E	SIS	SISE	SISE	SISE
{Accounting-Record-Number}		SISE	SISE	E	SIS	SISE	SISE	SISE
[Vendor-Specific-Application-Id]		SISE	SISE	E	SIS	SISE	SISE	SISE
[Acct-Application-Id]		-	-	-	-	-	-	-
[User-Name] (see note 1)		SISE	SISE	E	SIS	SISE	SISE	SISE
[Accounting-Sub-Session-Id]		-	-	-	-	-	-	-
[Accounting-RADIUS-Session-Id]		-	-	-	-	-	-	-
[Acct-Multi-Session-Id]		-	-	-	-	-	-	-
[Acct-Interim-Interval]		SIS-	SIS-	-	SIS-	SIS-	SIS-	SIS-
[Accounting-Realtime-Required]		-	-	-	-	-	-	-
[Origin-State-Id]		SISE	SISE	E	SIS	SISE	SISE	SISE
[Event-Timestamp]		SISE	SISE	E	SIS	SISE	SISE	SISE

AVP name	Node Type	S-CSCF	P-CSCF	I-CSCF	MRFC	MGCF	BGCF	AS
	Supported ACRs	S/I/S/E	S/I/S/E	E	S/I/S	S/I/S/E	S/I/S/E	S/I/S/E
*[Proxy-Info]		-	-	-	-	-	-	-
*[Route-Record]		-	-	-	-	-	-	-
*[AVP]		-	-	-	-	-	-	-
<b>Diameter Credit Control AVP</b>								
[Subscription-Id]		-	-	-	-	-	-	-
[Requested-Action]		-	-	-	-	-	-	-
*[Requested-Service-Unit]		-	-	-	-	-	-	-
*[Used-Service-Unit]		-	-	-	-	-	-	-
*[Service-Parameter-Info]		-	-	-	-	-	-	-
[Abnormal-Termination-Reason]		-	-	-	-	-	-	-
*[Accounting-Correlation-Id]		-	-	-	-	-	-	-
[Credit-Control-Failure-Handling]		-	-	-	-	-	-	-
[Direct-Debiting-Failure-Handling]		-	-	-	-	-	-	-
<b>3GPP Diameter accounting AVPs</b>								
[Event-Type]		SISE	SISE	E	SIS	SISE	SISE	SISE
[Role-of-Node]		SISE	SISE	E	SIS	SISE	SISE	SISE
[User-Session-Id]		SISE	SISE	E	SIS	SISE	SISE	SISE
[Calling-Party-Address]		SISE	SISE	E	SIS	SISE	SISE	SISE
[Called-Party-Address]		SISE	SISE	E	SIS	SISE	SISE	SISE
[Time-stamps]		SISE	SISE	E	SIS	SISE	SISE	SISE
*[Application-server] (see note 1)		SISE	-	-	-	-	-	-
*[Application-Provided-Called-Party-Address] (see note 1)		SISE	-	-	-	-	-	-
[Inter-Operator-Identifiers] (see note 1)		SISE	SISE	E	SIS	SISE	SISE	SISE
[IMS-Charging-Identifier]		SISE	SISE	E	SIS	SISE	SISE	SISE
*[SDP-Session-Description] <i>(see note 2)</i>		SI-E	SI-E	-	SI-	SI-E	SI-E	SI-E
*[SDP-Media-component] <i>(see note 2)</i>		SI-E	SI-E	-	SI-	SI-E	SI-E	SI-E
[GGSN-Address]		SI-E	SI-E	-	SI-	SI-E	SI-E	SI-E
[Served-Party-IP-Address] (see note 1)		-	SISE	-	-	-	-	-
[Authorized-QoS] (see note 1)		-	SISE	-	-	-	-	-
[Server-Capabilities]		-	-	E	-	-	-	-
[Trunk-Group-ID]		-	-	-	-	SISE	-	-
[Bearer-Service]		-	-	-	-	SISE	-	-
[Service-Id]		-	-	-	SIS	-	-	-
[UUS-Data] (see note 23)		SISE	SISE	-	-	-	-	SISE
[Cause]		--SE	--SE	E	--S	--SE	--SE	--SE
NOTE 1: Only present if available in the IMS node.								
NOTE 2: <del>Present in Interim and Event ACRs only if the SIP transactions that triggered the ACR contained SDP.</del>								
NOTE 23: Present only if user-to-user data is included in the SIP message that triggered the ACR.								

### End of Change in Clause 5.1.3.3

### Change in Clause 5.2.4.31

#### 5.2.4.31 SDP Media Components

This is a grouped field comprising several sub-fields associated with one media component. Since several media components may exist for a session in parallel these sub-fields may occur several times (as much times as media are involved in the session). ~~The sub-fields are present if medium (media) is (are) available in the SDP data which is provided in the ACR received from the IMS node.~~

The x-CSCF, BGCF, MGCF shall retrieve the value for this parameter from the SDP payload of SIP INVITE messages, if present. The x-CSCF, BGCF, MGCF shall then include this information in the ACR that is triggered when receiving the 200 OK responding to the SIP INVITE. This includes both the case of initial session setup and SDP changes during the session.

The SDP media component contains the following elements:

- SDP media name
- SDP media description
- GPRS Charging ID

These field elements are described in the appropriate subclause.

**End of Change in Clause 5.2.4.31**

**Change in Clause 5.2.4.34**

**5.2.4.34 SDP Session Description**

Holds the Session portion of the SDP data exchanged between the User Agents ~~if available~~ in the SIP transaction.

The x-CSCF, BGCF, MGCF shall retrieve the value for this parameter from the SDP payload of SIP INVITE messages, if present. The x-CSCF, BGCF, MGCF shall then include this information in the ACR that is triggered when receiving the 200 OK responding to the SIP INVITE. This includes both the case of initial session setup and SDP changes during the session.

This field holds the attributes of the media as available in the session related part of the SDP data tagged with "c=" and "a=" (multiple occurrence possible). Only attribute lines relevant for charging are recorded.

The content of this field corresponds to the SDP-Session-Description AVP of the ACR message.

Note: session unrelated procedures typically do not contain SDP data.

**End of Change in Clause 5.2.4.34**

## CHANGE REQUEST

⌘ **32.225 CR 025** ⌘ rev - ⌘ Current version: **5.4.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correction of reference to diameter base protocol		
<b>Source:</b>	⌘ SA5 ( <a href="mailto:patrik.teppo@ericsson.com">patrik.teppo@ericsson.com</a> )		
<b>Work item code:</b>	⌘ OAM-CH	<b>Date:</b>	⌘ 27/02/2004
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ TS 32.225 currently references the draft of the IETF "Diameter Base Protocol" that was up to date when the TS was frozen. This reference must be changed to the actual RFC that has been published in the meantime.		
<b>Summary of change:</b>	⌘ The Diameter Base Protocol reference is change to RFC 3588		
<b>Consequences if not approved:</b>	⌘ It is not possible to implement the Rf and Ro protocols.		

<b>Clauses affected:</b>	⌘										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications Test specifications O&M Specifications	⌘
Y	N										
	X										
	X										
	X										
<b>Other comments:</b>	⌘										

**How to create CRs using this form:**

## 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 32.200: "Telecommunication management; Charging management; Charging principles".
- [3] IETF ~~RFC 3588~~Internet-Draft, "Diameter Base Protocol".  
~~<http://www.ietf.org/internet-drafts/draft-ietf-aaa-diameter-17.txt><http://www.ietf.org/rfc/rfc3588.txt>~~
- ~~*NOTE: —The above reference will need to be updated to reference the assigned RFC number, once the draft achieves RFC status within the IETF.*~~
- [4] 3GPP TS 33.201: "Access domain security".
- [5] 3GPP TS 23.218: "IP Multimedia (IM) session handling; IM call model; Stage 2".
- [6] IETF RFC 2486: "The Network Access Identifier".
- [7] 3GPP TS 23.207: "End to end quality of service concept and architecture".
- [8] 3GPP TS 29.207: "Policy control over Go interface".
- [9] ITU-T Recommendation X.690: "Information technology - ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)".
- [10] ITU-T Recommendation X.691: "Information technology - ASN.1 encoding rules: Specification of Packed Encoding Rules (PER)".
- [11] ITU-T Recommendation X.693: "Information Technology - ASN.1 encoding rules: XML encoding Rules (XER)".
- [12] 3GPP TS 24.228: "Signalling flows for the IP multimedia call control based on SIP and SDP; Stage 3".
- [13] IETF Internet-Draft, "Diameter Credit Control Application". - Included in Annex A

NOTE: The above reference will need to be updated to reference the assigned RFC number, once the draft achieves RFC status within the IETF.

- [14] 3GPP TS 24.229: "IP Multimedia Call Control Protocol based on SIP and SDP; Stage 3."
- [15] IETF Internet-Draft, "Private Extensions to the Session Initiation Protocol (SIP) for the 3<sup>rd</sup> Generation Partnership Projects (3GPP)".  
<http://www.ietf.org/internet-drafts/draft-garcia-sipping-3gpp-p-headers-02.txt> or <ftp://ftp.rfc-editor.org/in-notes/rfc3455.txt>

NOTE: The above reference will need to be updated to reference the assigned RFC number, once the draft achieves RFC status within the IETF.

[16] IETF RFC 3261: "SIP: Session Initiation Protocol".

[17] IETF Internet-Draft, "SDP: Session Description Protocol".  
<http://www.ietf.org/internet-drafts/draft-ietf-mmusic-sdp-new-13.txt>

NOTE: The above reference will need to be updated to reference the assigned RFC number, once the draft achieves RFC status within the IETF.

[18] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".

[19] 3GPP TS 29.229: "Cx and Dx Interfaces based on the Diameter protocol; Protocol Details".

[20] IETF RFC 2806: "URLs for Telephone Calls".

**End of Change in Clause 2**