

Source: SA5 (Telecom Management)
Title: CR 32240 Charging architecture and principles
Document for: Approval
Agenda Item: 7.5.3

Doc-1st-Level	Spec_#	CR_#	R	Phase	Subject	Cat	Ver-Cur	Doc-2nd-Level	Workitem
SP-050271	32.240	0005	-	Rel-6	Correction to scope	F	6.1.0	S5-054466	CH
SP-050271	32.240	0006	-	Rel-6	Correction to references	F	6.1.0	S5-054467	CH

CHANGE REQUEST

32.240 CR 0005 rev - Current version: 6.1.0

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 ☒

Title: Correction to scope

Source: SA5 (benni.alexander@nokia.com)

Work item code: CH

Date: 09/05/2005

Category: F

Release: Rel-6

Use one of the following categories:

Use one of the following releases:

- F (correction)
- A (corresponds to a correction in an earlier release)
- B (addition of feature),
- C (functional modification of feature)
- D (editorial modification)

Detailed explanations of the above categories can be found in 3GPP [TR 21.900](#).

- Ph2 (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)
- Rel-7 (Release 7)

Reason for change: The last paragraph of text in Scope (clause 1) of TS 32.240 contains incorrect statements about the contents of TR 21.905 and the charging specifications. The diagram in the scope section doesn't include all Rel-6 charging TSs.

Summary of change: The paragraph has been modified to correct the above errors. Furthermore, a statement pointing to TS 22.115 for charging requirements has been added. Finally, the diagram in clause 1 is modified to include the complete set of Rel-6 charging TSs.

Consequences if not approved: The scope of TS 32.240 remains erroneous, confusing the reader.

Clauses affected: Clause 1

Other specs

Y	N
X	
	X
	X

Other core specifications

32.250, 32.251, 32.260, 32.270, 32.271, 32.295, 32.296, 32.297, 32.299

affected:

Test specifications
O&M Specifications

Other comments:

Child CR 32.250 in S5-054434,
Child CR 32.251 in S5-054435,
Child CR 32.260 in S5-054436,
Child CR 32.270 in S5-054437,
Child CR 32.271 in S5-054438,
32.272 change integrated in S5-054457,
32.273 change integrated in S5-054455,
Child CR 32.295 in S5-054440,
Child CR 32.296 in S5-054441,
32.297 change integrated in S5-054442,
32.298 change integrated in S5-054460,
Child CR 32.299 in S5-054443.

Change in Clause 1

1 Scope

The present document is part of a series of documents that specify charging functionality and charging management in GSM/UMTS networks. The GSM/UMTS core network charging architecture and principles are specified in the present document, which thus provides an umbrella for other charging management TSs that specify:

- the content of the CDRs per domain / subsystem /service (offline charging);
- the content of real-time charging events per domain / subsystem /service (online charging);
- the functionality of online and offline charging for those domains / subsystems / services;
- the interfaces that are used in the charging framework to transfer the charging information (i.e. CDRs or charging events).

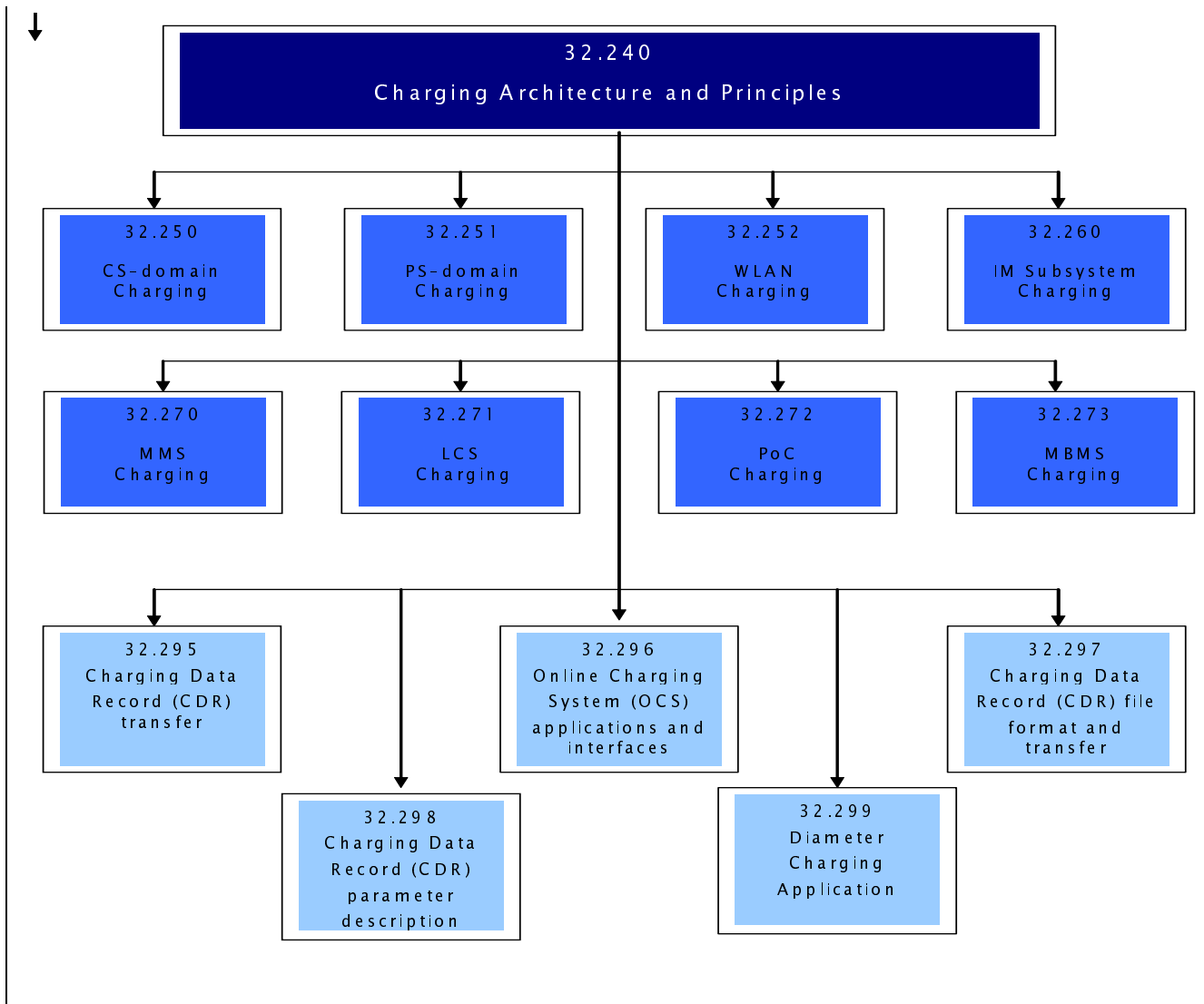
The purposes of the present document are:

- to lay down common principles of charging in the network; and
- to specify a logical common charging architecture that applies to all 3GPP domains, subsystems and services.

A set of domain/subsystem/service specific TSs covers the bearer (CS, PS, WLAN domains), subsystem (IMS) and service (MMS, LCS, etc.) levels, respectively, in the 32.25x, 32.26x and 32.27x TS number range. These TSs describe the mapping of the common architecture specified in the present document onto the specific domain/subsystem/service and the scenarios and information for online and offline charging that are specific to the domain/subsystem/service. They are commonly referred to as the “middle tier (charging) TSs”.

A set of TSs in the 32.29x range covers common aspects such as CDR parameter and syntax descriptions, online and offline charging applications, and the charging interactions within the network (CDR transfer) as well as between the network and the Billing Domain (CDR file transfer).

The complete document structure for these TSs is outlined in the following figure.



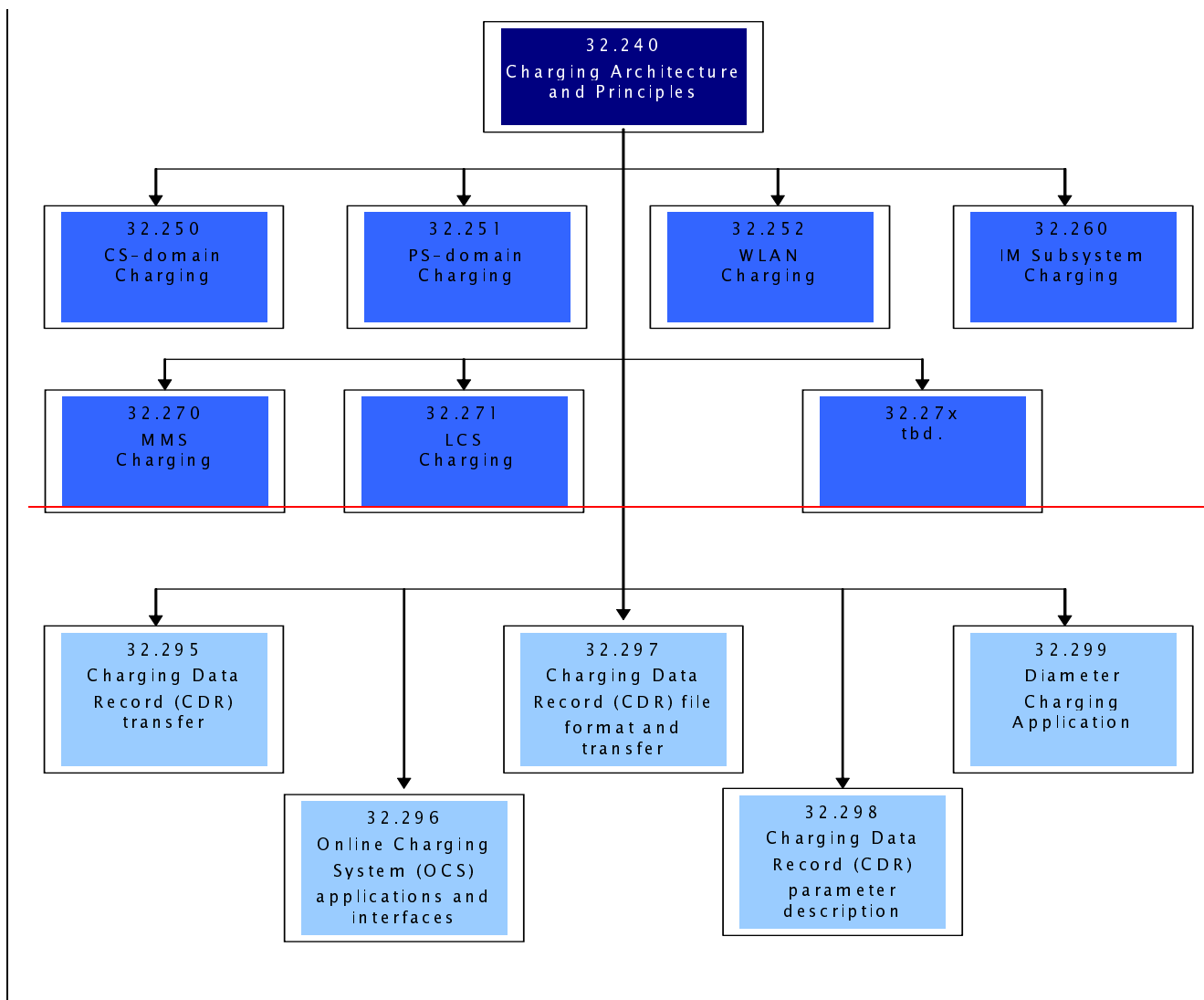


Figure 1.1: Charging documents structure

All [terms, definitions and references](#), abbreviations, ~~definitions, descriptions, principles and requirements~~, used in the present document, that are common across 3GPP TSs, are defined in the 3GPP Vocabulary, 3GPP TR 21.905 [100]. Those that are common across charging management in GSM/UMTS domains, services or subsystems are provided in the present document (umbrella TS), and are copied into clause 3 of the other TSs depicted in the figure, for ease of reading. Finally, those items that are specific to the present document are defined exclusively in the present document.

[Furthermore, requirements that govern the charging work are specified in 3GPP TS 22.115 \[102\].](#)

End of change in Clause 1
End of document

Annex A (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Mar 2004	S_27	SP-050029	004	--	Correction of the concept of Termination action	6.0.0	6.1.0

CHANGE REQUEST

32.240 CR 0006 rev - Current version: **6.1.0**

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 ☒

Title: Correction to references
Source: SA5 (benni.alexander@nokia.com)
Work item code: CH
Category: F

Date: 09/05/2005
Release: Rel-6

Use one of the following categories:

- F** (correction)
- A** (corresponds to a correction in an earlier release)
- B** (addition of feature),
- C** (functional modification of feature)
- D** (editorial modification)

Detailed explanations of the above categories can be found in 3GPP [TR 21.900](#).

Use one of the following releases:

- Ph2 (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)
- Rel-7 (Release 7)

Reason for change: Clause 2 (References) is contradicting 3GPP TR 21.801 (Specification drafting rules).

Summary of change: All references in clause 2 that are not explicitly cited in the TS have been removed from the list of references, and collected to a new Annex "Bibliography", which has been inserted to the TS just before the last Annex containing the change history.

The change has been done according to the instructions in 3GPP TR 21.801 listed below.

1. 3GPP TR 21.801 states (subclause 6.2.2) about the list of references as follows:

"The list shall not include the following:

...

- documents which are not explicitly cited in the provisions of the deliverable (such documents may be listed in a bibliography (see subclause 6.4.2))."*

2. 3GPP TR 21.801 states (subclause 6.4.2) about the Bibliography as follows:
"The Bibliography identifies documents which are not explicitly cited in the body of the 3GPP TS or 3GPP TR."

3. 3GPP TR 21.801 states (subclause 5.2.7) as follows:
"A bibliography, if present, shall appear after the penultimate annex entitled "Bibliography"."

Consequences if not approved: TS 32.240 remains contradictive to 3GPP specification drafting rules.

Clauses affected: Clause 2, Annexes.

Other specs

Y	N
X	

Other core specifications

32.250, 32.251, 32.260, 32.270, 32.271, 32.295, 32.296, 32.297, 32.299

affected:

	X
	X

Test specifications

O&M Specifications

Other comments:

Child CR 32.250 in S5-054446,
Child CR 32.251 in S5-054447,
32.252 change included in S5-054456,
Child CR 32.260 in S5-054448,
Child CR 32.270 in S5-054449,
Child CR 32.271 in S5-054450,
32.272 change included in S5-054457,
32.273 change included in S5-054455,

Child CR 32.295 in S5-054451,
Child CR 32.296 in S5-054452,
Child CR 32.297 included in S5-054442 / S5-054453,
32.298 change included in S5-054460,
Child CR 32.299 in S5-054454.

Change in Clause 2

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*.

a) ~~_____~~ **The 3GPP charging specifications**

[1]-[9] Void.

[10] 3GPP TS 32.250: "Telecommunication management; Charging management; Circuit Switched (CS) domain charging".

[11] 3GPP TS 32.251: "Telecommunication management; Charging management; Packet Switched (PS) domain charging".

~~[12] _____ 3GPP TS 32.252: "Telecommunication management; Charging management; Wireless Local Area Network (WLAN) charging".~~

~~[13]~~[12]-~~[19]~~[29] Void.

~~[20] _____ 3GPP TS 32.260: "Telecommunication management; Charging management; IP Multimedia Subsystem (IMS) charging".~~

~~[21] [29] _____ Void.~~

[30] 3GPP TS 32.270: "Telecommunication management; Charging management; Multimedia Messaging Service (MMS) charging".

~~[31] _____ 3GPP TS 32.271: "Telecommunication management; Charging management; Location Services (LCS) charging".~~

~~[32] _____ 3GPP TS 32.272: "Telecommunication management; Charging management; Push to talk over Cellular (PoC) charging".~~

~~[33] _____ 3GPP TS 32.273: "Telecommunication management; Charging management; Multimedia Broadcast and Multicast Service (MBMS) charging".~~

~~[34]~~[31]-[49] Void.

[50] 3GPP TS 32.299: "Telecommunication management; Charging management; Diameter charging application".

[51] 3GPP TS 32.298: "Telecommunication management; Charging management; Charging Data Record (CDR) parameter description".

[52] 3GPP TS 32.297: "Telecommunication management; Charging management; Charging Data Record (CDR) file format and transfer".

[53] 3GPP TS 32.296: "Telecommunication management; Charging management; Online Charging System (OCS) applications and interfaces".

- [54] 3GPP TS 32.295: "Telecommunication management; Charging management; Charging Data Record (CDR) transfer".
- [55]-[69] Void.
- [70] 3GPP TS 23.125: "Overall High Level Functionality and Architecture Impacts of Flow Based Charging; Stage 2"
- [71]-[99] Void.

b) Common 3GPP specifications

- [100] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [101] 3GPP TS 22.115 "Service aspects; Charging and billing".

~~[102] 3GPP TS 23.002: "Network architecture".~~

~~[103]~~[102](#)]-[199] Void.

e) other Domain and Service specific 3GPP / ETSI specifications

- ~~[200] 3GPP TS 22.002: "Circuit Bearer Services (BS) supported by a Public Land Mobile Network~~
- ~~[201] 3GPP TS 22.003: "Circuit Teleservices Supported by a Public Land Mobile Network (PLMN)".~~
- ~~[200-202] 3GPP TS 22.004: "General on Supplementary Services"~~[Void](#).
- [203] 3GPP TS 22.024: "Description of Charge Advice Information (CAI)".
- [204] 3GPP TS 22.086: "Advice of Charge (AoC) supplementary services - Stage 1".
- ~~[205] 3GPP TS 23.009: "Handover procedures"~~
- ~~[205-206] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)"~~[Void](#).
- [207] 3GPP TS 23.078: "Customized Applications for Mobile network Enhanced Logic (CAMEL); Stage 2".
- ~~[208] 3GPP TS 23.140: "Multimedia Messaging Service (MMS); Functional description; Stage 2".~~
- ~~[208-290]~~[209](#)] 3GPP TS 23.271: "Location Services (LCS); Functional description; Stage 2"[Void](#).
- [210] 3GPP TS 23.234: "3GPP system to Wireless Local Area Network (WLAN) interworking; System description".
- [211] 3GPP TS 23.086: "Advice of Charge (AoC) supplementary services - Stage 2".
- [212] 3GPP TS 22.024: "Description of Charge Advice Information (CAI)".
- [213]-[299] Void.

d) Relevant ITU Recommendations

- [300] ITU-T Recommendation D.93: "Charging and accounting in the international land mobile telephone service (provided via cellular radio systems)".
- [301]-~~[309]~~[399](#)] Void.
- ~~[310] ITU-T Recommendation E.164: "The international public telecommunication numbering plan".~~
- ~~[311] [329] Void.~~
- ~~[330] ITU-T Recommendation Q.767: "Application of the ISDN user part of CCITT signalling System No.7 for international ISDN interconnections".~~
- ~~[331] [349] Void.~~

- ~~{350} ITU T Recommendation X.25: "Interface between Data Terminal Equipment (DTE) and Data Circuit terminating Equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit".~~
- ~~{351} ITU T Recommendation X.121: "International numbering plan for public data networks".~~
- ~~{352} [399] Void.~~
- ~~e) Relevant IETF RFCs~~
- ~~{400} IETF RFC 959 (1985): "File Transfer Protocol".~~
- ~~[400-401] IETF RFC 3588 (2003): "Diameter base protocol" Void.~~
- [402] IETF Internet-Draft "Diameter Credit Control Application" v06.
- ~~{403} IETF RFC1350: "The TFTP Protocol (Revision 2)".~~

End of change in Clause 2

Change in Annexes

Annex A (informative): Bibliography

a) The 3GPP charging specifications

- 3GPP TS 32.252: "Telecommunication management; Charging management; Wireless Local Area Network (WLAN) charging".
- 3GPP TS 32.260: "Telecommunication management; Charging management; IP Multimedia Subsystem (IMS) charging".
- 3GPP TS 32.271: "Telecommunication management; Charging management; Location Services (LCS) charging".
- 3GPP TS 32.272: "Telecommunication management; Charging management; Push-to-talk over Cellular (PoC) charging".
- 3GPP TS 32.273: "Telecommunication management; Charging management; Multimedia Broadcast and Multicast Service (MBMS) charging".

b) Common 3GPP specifications

- 3GPP TS 23.002: "Network architecture".

c) other Domain and Service specific 3GPP / ETSI specifications

- 3GPP TS 22.002: "Circuit Bearer Services (BS) supported by a Public Land Mobile Network
- 3GPP TS 22.003: "Circuit Teleservices Supported by a Public Land Mobile Network (PLMN)".
- 3GPP TS 22.004: "General on Supplementary Services".
- 3GPP TS 23.009: "Handover procedures".
- 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".
- 3GPP TS 23.140: "Multimedia Messaging Service (MMS); Functional description; Stage 2".
- 3GPP TS 23.271: "Location Services (LCS); Functional description; Stage 2".

d) Relevant ITU Recommendations

- [ITU-T Recommendation E.164: "The international public telecommunication numbering plan".](#)
- [ITU-T Recommendation Q.767: "Application of the ISDN user part of CCITT signalling System No.7 for international ISDN interconnections".](#)
- [ITU-T Recommendation X.25: "Interface between Data Terminal Equipment \(DTE\) and Data Circuit-terminating Equipment \(DCE\) for terminals operating in the packet mode and connected to public data networks by dedicated circuit".](#)
- [ITU-T Recommendation X.121: "International numbering plan for public data networks".](#)

e) Relevant IETF RFCs

- [IETF RFC 959 \(1985\): "File Transfer Protocol".](#)
- [IETF RFC 3588 \(2003\): "Diameter base protocol".](#)
- [IETF RFC1350: "The TFTP Protocol \(Revision 2\)".](#)

Annex **A-B** (informative): Change history

End of change in Annexes

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Dec 2003	S_22	SP-030623	--	--	Submitted to TSG SA#22 for Information	1.0.0	
Sep 2004	S_25	SP-040550	--	--	Submitted to TSG SA#25 for Approval	2.0.0	6.0.0
Mar 2004	S_27	SP-050029	001	--	Correction of editorial errors and misalignments	6.0.0	6.1.0
Mar 2004	S_27	SP-050029	002	--	Error corrections & clarifications	6.0.0	6.1.0
Mar 2004	S_27	SP-050029	003	--	Correction of Credit Pooling for online charging	6.0.0	6.1.0
Mar 2004	S_27	SP-050029	004	--	Correction of the concept of Termination action	6.0.0	6.1.0