TSGS#20(03)0218

Source: **TSG-SA WG4**

Title: CR to TS 26.235 - Handling of DTMF in IMS (Rel-6)

Document for: **Approval**

Agenda Item: **7.4.3**

The following CR, agreed at the TSG-SA WG4 meeting #26, is presented to TSG SA #20 for approval.

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
26.235	005	1	Rel-6	Handling of DTMF in IMS	C	5.1.0	S4	TSG-SA WG4#26	S4-030402

3GPP TSGSA4 Meeting #26
Paris, France, 5-9 May, 2003

Tdoc ⌘S4-(03)0402

CR-Form-v7

CHANGE REQUEST

⌘ **TS 26.235** **CR** **005** ⌘**rev** **1** ⌘ Current version: **5.1.0** ⌘

*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:	⌘	Handling of DTMF in IMS
Source:	⌘	TSG SA WG4
Work item code:	⌘	IMS-CODEC
Date:	⌘	10/06/2003
Category:	⌘	**C**
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:

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)*

Reason for change:	⌘	3GPP has not specified, which of the mime types defined in RFC 2833 (“telephone-event” or “tone”), as well as possible additional options for the media type shall be supported. Consequently, the IM-MGW may need to support both media type and all options. It is desirable to reduce the range of possibilities to simplify the implementation at the IM-MGW.
Summary of change:	⌘	MIME type and RTP payload for telephone-event is recommended for DTMF media format
Consequences if not approved:	⌘	IM-MGW may need to support both “telephone-event” and “tone” media types and all options.

Clauses affected:	⌘	2, 6.1, 9.1 and 9.2			
Other specs affected:	⌘	**Y**	**N**		
		☐	☐	Other core specifications	⌘
		☐	☐	Test specifications	
		☐	☐	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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

[2] IETF RFC 2327: "SDP: Session Description Protocol".

[3] IETF RFC 2429: "RTP Payload Format for the 1998 Version of ITU-T Rec. H.263 Video (H.263+)".

[4] IETF RFC 1889: "RTP: A Transport Protocol for Real-Time Applications".

[5] IETF RFC 3016: "RTP Payload Format for MPEG-4 Audio/Visual Streams".

[6] ITU-T Recommendation H.263: "Video coding for low bit rate communication".

[7] 3GPP TS 26.110: "Codec for Circuit Switched Multimedia Telephony Service; General Description".

[8] 3GPP TS 26.111: "Codec for Circuit Switched Multimedia Telephony Service; Modifications to H.324".

[9] 3GPP TS 26.071: "Mandatory Speech Codec speech processing functions; AMR Speech Codec; General description".

[10] 3GPP TS 26.090: "Mandatory Speech Codec speech processing functions; AMR Speech Codec; Transcoding functions".

[11] 3GPP TS 26.073: "Adaptive Multi-Rate (AMR); ANSI C source code".

[12] 3GPP TS 26.104: "ANSI-C code for the floating-point AMR speech codec".

[13] ISO/IEC 14496-2 (1999): "Information technology - Coding of audio-visual objects - Part 2: Visual".

[14] 3GPP TS 24.228: "Signalling flows for the IP multimedia call control based on SIP and SDP".

[15] 3GPP TS 24.229: "IP Multimedia Call Control Protocol based on SIP and SDP".

[16] 3GPP TS 26.171 (Release 5): "AMR speech codec, wideband; General description".

[17] 3GPP TS 26.190 (Release 5): "Mandatory Speech Codec speech processing functions AMR Wideband speech codec; Transcoding functions".

[18] 3GPP TS 26.201 (Release 5): "AMR speech codec, wideband; Frame structure".

[19] ITU-T Recommendation H.263 (annex X): "Annex X, Profiles and levels definition".

[20] 3GPP TS 23.228: "IP multimedia subsystem; stage 2".

[21] 3GPP TS 23.107: "QoS Concept and Architecture".

[22] 3GPP TS 23.207: "End to end quality of service concept and architecture".

[23] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".

[24] IETF RFC 2793: "RTP Payload for Text Conversation".

[25] ITU-T Recommendation T.140 (1998): "Protocol for multimedia application text conversation" (with amendment 2000).

[26] 3GPP TS 26.101: "Mandatory Speech Codec speech processing functions; AMR Speech Codec; Frame Structure".

[27] IETF RFC 2119: "Key words for use in RFCs to Indicate Requirement Levels".

[28] 3GPP TS 26.093: "Mandatory Speech Codec speech processing functions; AMR Speech Codec; Source Controlled Rate operation".

[29] 3GPP TS 46.060: "Enhanced Full Rate (EFR) speech transcoding".

[30] TIA/EIA -136-Rev.A, part 410 - "TDMA Cellular/PCS – Radio Interface, Enhanced Full Rate Voice Codec (ACELP). Formerly IS-641. TIA published standard, 1998".

[31] ARIB, RCR STD-27H, "Personal Digital Cellular Telecommunication System RCR Standard".

[32] IETF draft-westberg-realtime-cellular-01.txt, "Realtime Traffic over Cellular Access Networks".

[33] IETF draft-larzon-udplite-03.txt, "The UDP Lite Protocol".

[34] 3GPP TS 26.092: "Mandatory Speech Codec speech processing functions; AMR Speech Codec; Comfort noise aspects".

[35] IETF RFC 3267: "RTP payload format and file storage format for the Adaptive Multi-Rate (AMR) Adaptive Multi-Rate Wideband (AMR-WB) audio codecs", March 2002.

[36] IETF RFC 2833: “RTP Payload for DTMF Digits, Telephony Tones and Telephony Signals”, May 2000.

6.1 Audio

3G PS multimedia terminals offering audio communication shall support AMR narrowband speech codec [9], [10], [11] to [12]. This is the mandatory speech codec.

The AMR wideband speech codec shall be supported when the 3G PS multimedia terminal supports wideband speech working at 16 kHz sampling frequency [16].

The usage of telephone-event media format is recommented for DTMF.

9.1 MIME media types

The terminal shall declare the mandatory and any optional media streams using the codec specific MIME media types in the associated SDP syntax. The MIME media types for the mandatory and optional codecs shall be according to the corresponding types registered by IANA.

- AMR narrowband speech codec MIME media type as specified in annex B.
- AMR wideband speech codec MIME media type is specified in annex B.
- H.263 [6] video codec MIME media type is specified in annex C.
- MPEG-4 visual simple profile level 0 MIME media type as specified in RFC 3016 [5].
- ITU-T Recommendation T.140 [25] Text Conversation MIME media type as specified by RFC 2793 [24].
- Telephone-event MIME media type as specified by RFC 2833 [36]

9.2 RTP payload

RTP payload formats specified by IETF shall be used for real time media streams.

RTP payload format for the AMR narrowband speech codec is specified in annex B.

RTP payload format for the AMR wideband speech codec is specified in annex B.

RTP payload format for the ITU-T Recommendation H.263 [6] video codec is specified in IETF RFC 2429 [3].

RTP payload format for the MPEG-4 visual simple profile level 0 is specified in IETF RFC 3016 [5].

RTP payload format for the ITU-T Recommendation T.140 [25] text conversation coding is specified in IETF RFC 2793 [24].

RTP payload format for the telephone-event is specified in IETF RFC 2833 [36].