3G CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

26.911	CR	**004Rev1**	Current Version:	3.1.0

3G specification number ↑   *↑ CR number as allocated by 3G support team*

For submision to TSG   SA#6   for approval   **X**   *(only one box should*
list TSG meeting no. here ↑   for information   *be marked with an X)*

Form: 3G CR cover sheet, version 1.0   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf

Proposed change affects: USIM ☐   ME **X**   UTRAN ☐   Core Network ☐
(at least one should be marked with an X)

Source:	TSG-SA WG4 Codec	**Date:**	17-Dec-1999

Subject:	Error resilience improvements to using video in 3G-324M.

3G Work item:	Codec(s) for low bit-rate multimedia telephony (S4 WI 2)

Category: F   Correction   ☐
                       A   Corresponds to a correction in a 2G specification   ☐
(only one category   B   Addition of feature   ☐
shall be marked   C   Functional modification of feature   **X**
with an X)   D   Editorial modification   ☐

Reason for change:	The change enables the use of GFID field for picture header recovery and improves error resilience of H.263 in 3G-324M. The change also clarifies the opening of video channels for MPEG-4.

Clauses affected:	7.2, 7.3

Other specs affected:
	Other 3G core specifications	☐	→ List of CRs:	
	Other 2G core specifications	☐	→ List of CRs:	
	MS test specifications	☐	→ List of CRs:	
	BSS test specifications	☐	→ List of CRs:	
	O&M specifications	☐	→ List of CRs:	

Other comments:	There are other non-conflicting CRs coming for Section 7.3. The change to 7.3 proposed in this CR can be placed anywhere in this section, for example at the end.

help.doc

<--------- double-click here for help and instructions on how to create a CR.

7.2   H.263

Several of the optional annexes of H.263 are useful for improving the compression efficiency and error resilience of the codec. The annexes below form a balanced set of tools with respect to error robustness, compression efficiency, quality, and complexity. It is recommended that an H.263 video decoder should support the following annexes. The main feature of each annex is also mentioned:

- Annex I (Advanced Intra Coding), improves error resilience and compression efficiency.

- Annex J (Deblocking Filter), improves compression efficiency.

- Annex K (Slice Structure Mode), improves error resilience.

- Annex T (Modified Quantizer), improves compression efficiency.

Non-empty GOB headers should be used frequently to improve error resilience (see [6], Section 5.2).

H.263 encoders in 3G-324M terminals should respond to all videoFastUpdate commands received via the H.245 control channel (i.e., videoFastUpdatePicture, videoFastUpdateGOB, and videoFastUpdateMB presented in section 7.11.5 of [2] Version 3). Using this feedback information to make a focused picture update can significantly improve the error performance of the codec. 3G-324M decoders are correspondingly recommended to transmit videoFastUpdate commands when the received picture is detected to be significantly corrupted due to transmission errors.

It is recommended that H.263 decoders take advantage of the GOB and slice header GOB Frame ID (GFID) field in recovering corrupted picture header data (see Sections 5.2.5 and K.2 of H.263 recommendation version 2). For this purpose it is recommended that H.263 encoders should not use the Rounding Type (RTYPE) bit of the extended picture header as described in Section 5.1.4.3 of [1]. The RTYPE bit should always be set to 0 since it otherwise effectively prevents the use of the GFID field for picture header recovery.

To prevent extended propagation of degraded video, Intra Refresh should be used. More than [5 %] of the macroblocks per one frame should be refreshed. Adaptive Intra Refresh (AIR) described in section E.1.5 in Annex E of [11] should be used in conjunction with cyclic Intra Refresh.

One Video Packet of MPEG-4 Visual should be mapped to one AL-SDU of ITU-T H.223 Adaptive Layer.

When an incoming bi-directional openLogicalChannel request has unsuitable reverse parameters for the local encoder, e.g., unsuitable MPEG-4 decoderConfigurationInformation, the terminal should reject the request. The cause field of openLogicalChannelReject should be set to value unsuitableReverseChannelParameters. A new openLogicalChannel request should be sent to the other end, now using the forward channel parameters of the rejected request as reverse channel parameters, and specifying new preferred forward channel parameters.

All MPEG-4 encoders should accept and respond to H.245 videoTemporalSpatialTradeOff commands. Support for temporal-spatial trade-off cannot be signaled for MPEG-4 encoders, but the encoders should provide that support by default. MPEG-4 decoders are encouraged to utilize the videoTemporalSpatialTradeOff command. The specific response to the TemporalSpatialTradeOff command by MPEG-4 encoders is not defined and it is up to the implementation to decide how to respond to the command.

8   Audio Codec