Technical Specification Group Services and System Aspects
Meeting #10, Bangkok, Thailand, 11-14 December 2000

TSGS#10(00)0579

Source: **TSG-SA WG4**

Title: **CR to TS 26.911**

Document for: **Approval**

Agenda Item: **7.4.3**

The following CRs were agreed at the TSG-SA WG4 meetings #14 and are presented to TSG SA #10 for approval.

Spec	CR	Rev	Phase	Subject	Cat	Ver	WG	Meeting	S4 doc
26.911	006	1	R99	Annex K submodes of H.263 video codec for 3G-H324 specification	F	3.2.1	S4	TSG-SA WG4#14	S4-000585
26.911	007		Rel-4	Annex K submodes of H.263 video codec for 3G-H324 specification	A	3.3.0	S4	TSG-SA WG4#14	S4-000586
26.911	008		R99	Editorial changes due to Correction of TS 26.111	F	3.2.1	S4	TSG-SA WG4#14	S4-000641R

TSG-SA4 Meeting #14
Bath, U. K., 27 November - 1 December 2000

Document S4-00-0585
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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	006 rev1	Current Version:	3.2.1 (R99)

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-SA#10	for approval	X	strategic		(for SMG use only)
List expected approval meeting # here ↑		For information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [ ] Core Network [X]

Source: TSG-SA WG4 **Date:** 11.12.2000

Subject: Annex K submodes of H.263 video codec for 3G-H324 specification.

Work item: Multimedia Codecs for CS services.

Category: *(only one category Shall be marked With an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: The codec for CS video specifies use of annex K with H.263 video codec. However, it does not specify which submodes of Annex K should be used. On one hand, current text implies Annex K with all submodes. On the other hand, in LS (S4-000399) to ITU-T we did not recommend use of RS submode. Thus, the current text is inconsistent and needs clarification and correction.

This correction specifies explicitly meaning of the use of annex K in H.263 video codec in section 7.2 of TS26.911 (R99).

Clauses affected: Use of Annex K in H.263 video codec for CS services.

Other specs Affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM 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:

How the text is changed (TS26.911, section 7.2 H.263)

Before the change

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

After the change

- Annex K (Slice Structure Mode, without RS submode), improves error resilience.

TSG-SA4 Meeting #14
Bath, U. K., 27 November - 1 December 2000

Document S4-00-0586
e.g. for 3GPP use the format TP-99xxx
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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	007	Current Version:	3.2.1 (R99)

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-SA#10	for approval	X	strategic		*(for SMG use only)*
List expected approval meeting # here ↑		For information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME	X	UTRAN / Radio		Core Network	X

Source: TSG-SA WG4 **Date:** 11.12.2000

Subject: Annex K submodes of H.263 video codec for 3G-H324 specification.

Work item: Multimedia Codecs for CS services.

Category: *(only one category Shall be marked With an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release	X		Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	
				Release 00	X

Reason for change: The codec for CS video specifies use of annex K with H.263 video codec. However, it does not specify which submodes of Annex K should be used. On one hand, current text implies Annex K with all submodes. On the other hand, in LS (S4-000399) to ITU-T we did not recommend use of RS submode. Thus, the current text is inconsistent and needs clarification and correction.

This correction specifies explicitly meaning of the use of annex K in H.263 video codec in section 7.2 of TS26.911 (R99).

Clauses affected: Use of Annex K in H.263 video codec for CS services.

Other specs Affected:

Other 3G core specifications		→ List of CRs:
Other GSM 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:

How the text is changed (TS26.911, section 7.2 H.263)

Before the change

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

After the change

- Annex K (Slice Structure Mode, without RS submode), improves error resilience.

3GPP TSG-SA4 Meeting #14 ***Tdoc S4-000641R***
Bath, UK, November 27-December 1, 2000

CR-Form-v3

CHANGE REQUEST

⌘ **TR 26.911 CR 8** ⌘ rev **-** ⌘ Current version: **3.2.1** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☐ Core Network ☐

Title: ⌘	Editorial changes due to Correction of TS 26.111	
Source: ⌘	TSG-SA WG4	
Work item code: ⌘	WI2 Multimedia Codec	***Date:*** ⌘ 11.12.2000
Category: ⌘	**F**	***Release:*** ⌘ 99

Use one of the following categories:
F *(essential 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)*

Reason for change: ⌘	Due to the correction of the MPEG-4 visual codec conformance point in TS 26.111, TR 26.911 has to be updated to be in line with TS 26.111.
Summary of change: ⌘	Editorial changes
Consequences if not approved: ⌘	TR 26.911 is not in line with TS 26.111.

Clauses affected: ⌘	7.3		
Other specs Affected: ⌘	☐ 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/3G_Specs/CRs.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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

7.3 Other Video Codecs

It is recommended that all 3G-324M terminals additionally support the ISO/IEC 14496-2 (MPEG-4 Visual) video codec [11]. The explanatory text below gives justification and further detail for this recommendation.

One of the main target environments for MPEG-4 Visual is mobile use. For this purpose the following error resilient techniques have been adopted in MPEG-4 Visual: Resynch Marker, Header Extension Code, Data Partitioning, and Reversible Variable Length Code. With these techniques MPEG-4 Visual codec can be used over errorprone channels enabling highly efficient low delay multimedia communication services for 3G networks. Support for MPEG-4 Visual potentially provides capabilities for communicating with heterogeneous networks without transcoding, or reusing pictures/video from 3G multimedia telephony service by different applications and vice versa.

MPEG-4 Visual and H.263 have substantial technical similarities. MPEG-4 Visual also includes support for the H.263 baseline codec.

Because of multi-functionality of MPEG-4 Visual, subsets of different tools have been defined in order to allow effective implementations of the standard. These subsets, called “Profiles”, limit the tool set which shall be implemented. For each of these Profiles one or more Levels have been set to restrict the computational complexity of implementations. It is here recommended that the Simple Visual Profile ~~with Level 1~~ @ Level 0 is supported to achieve adequate error resilience for transmission error and low complexity simultaneously. No other Profiles are recommended to be supported. Higher Levels for the Simple Visual Profile may be supported depending on the terminal capabilities.

MPEG-4 Visual accepts various sizes of input picture within the capability specified from the Profile and Level. Picture size of QCIF for Level 1 should be used for the sake of interoperability.

All of the error resilience tools in Simple Visual Profile are recommended to be activated.

Resync Marker is a tool which increases the opportunities for the decoder to resynchronize with the bitstream and after loss of synchronization due to errors in the bitstream, thus enabling normal decoder operation to continue. The encoder should insert Resync Marker in the bitstream, in order to enable the decoder to search for the Resync Marker in addition to the Start Code.

Header Extension Code (HEC) enables independent decoding of each video packet. One or more than one video packet in a VOP should have HEC in order for. the decoder to utilize information derived from HEC, to avoid discarding a whole VOP when the VOP header could not be received.

Data Partitioning is a tool that separates the information within a video packet to improve the degree of error localization and concealment. When the decoder detect errors in a video packet, the decoder may not discard whole the packet if themotion information or the I-VOP DC coefficients are decoded correctly. The decoder may reconstruct the corresponding part of the picture utilizing the above motion information or DC coefficients. The encoder should use Data Partitioning syntax in order to enable the decoder the above operation.

Reversible Variable Length Code (RVLC) is a tool which reduce the number of discarded bits.. RVLC decoding operation as described in section E.1.4 of Annex E in [11] may be performed. The encoder should utilize RVLC to enable the decoder to perform such operation.

In addition to these tools, Intra Refresh should be inserted in order to prevent inter-frame propagation of errors. 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.