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CR-Form-v7

CHANGE REQUEST

⌘ **26.911** **CR** **014** ⌘ **rev** **3** ⌘ 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:	⌘	3G-324M Improvements
Source:	⌘	Apple Computer, AT&T Wireless Services, Ericsson (editor), France Telecom, Fraunhofer, Nokia, ORANGE, PacketVideo, Panasonic, Philips, RealNetworks, Sharp, Texas Instruments, Toshiba, Vodafone
Work item code:	⌘	3G-324MI
Date:	⌘	10/09/2004
Category:	⌘	**B**
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:	⌘	The 3GPP circuit-switched mobile video telephony standard 3G-324M is now being deployed in several countries and is one of the major services distinguishing 3G networks from 2G. The interest for the 3G-324M service is high and will probably continue to be so in the near future. No major changes have been made to the 3G-324M specifications since 1999, although there now exist better alternatives for media encoding than originally specified and the service requirements have also become more clear.
Summary of change:	⌘	Clarifications of H.245 use. Recommendations concerning H.264 use.
Consequences if not approved:	⌘	Increased risk for interoperablility problems between 3G-324M implementations. Increased risk for low performance 3G-324M implementations.

Clauses affected:	⌘	2, 5 and 6.

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	CR 26.111 010 rev 2, CR 26.111 011
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

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2 References

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[17] 3rd Generation Partnership Project (3GPP), 3GPP TS 25.301, Radio Interface Protocol Architecture.

[18] ITU-T Recommendation H.264 (2003): "Advanced video coding for generic audiovisual services" | ISO/IEC 14496-10:2003: "Information technology ñ Coding of audio-visual objects ñ Part 10: Advanced Video Coding"

[19] ITU-T Recommendation H.241 (2003): "Extended video procedures and control signals for H.300 series terminals"

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5 Multiplex Protocol

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ITU-T Recommendation H.324 [7] mandates that ITU-T Recommendation H.263 [9] encoders shall align picture start codes (PSC) with the start of an AL-SDU (see [4], clause 6.6.1). It is here further recommended that AL-SDUs that do not start with a PSC should start with a GOB header to improve error resilience.

ITU-T Recommendation H.241 [19] mandates that ITU-T Recommendation H.264 [18] encoders shall align Annex B/H.264 start code prefix for the first NAL unit of each access unit with the start of an AL-SDU. Use of the NAL Alignment Mode defined in TS 26.111 [11] is here further recommended.

No more than 1-3 audio frames should be included in one MUX-PDU to avoid excessive delay.

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6 Control Protocol

It is recommended that terminals support the latest possible version of ITU-T Recommendation H.245 [5]. Capability to support latest improvements in ITU-T Recommendation H.324 [7] are usually dependent on supporting the corresponding signalling in ITU-T Recommendation H.245. [5] Most of the recommendations in the present document require support for at least ITU-T Recommendation H.245 [5] Version 3 and some require even newer versions.

Recommendations for the control protocol are not limited to this clause of the present document. Other clauses of the present document give recommendations for the different parts of the terminal often implying corresponding support from ITU-T Recommendation H.245 [5]. These recommendations are not replicated in this clause, but they should still be interpreted as recommendations for the ITU-T Recommendation H.245 [5] control protocol implementation.

Note that it is allowed for terminals to declare only H.245 [5] ìtransmitî capabilities, indicating that the terminal is only capable of transmitting media, and that logical channels should be established accordingly. Also note that it is allowed for terminals to use H.245 [5] to declare only audio or only video capabilities, and that logical channels should be established accordingly.

Any combination of H.245 [5] OpenLogicalChannel requests that would result in a number of active audio and / or video channels exceeding the terminalís simultaneous capabilities should be considered a source of conflict. Note that terminals declaring receiveAndTransmit capabilities does require symmetric logical channels, i.e. use of the same codec in both directions, which is also a possible source of conflict. Terminals should resolve such conflicts by H.245 [5] master/slave conflict procedures, i.e. the master rejects the slaveís request and the slave accepts the masterís request, unless the slave has to reject the masterís OpenLogicalChannel request with cause ìunsuitable reverse parametersî, as described in H.245 [5]. For some cases where, although originally intended, a two-way communication would not result, the slave may have to complete the procedure by issuing a uni-directional OpenLogicalChannel. Note that a

logical channel with nullData media type is not considered an active channel in this context. Editorís note: IMTC has proposed a text on H.245 OpenLogicalChannel conflict handling and resolution to ITU-T for possible inclusion in a future H.324 Implementerís Guide. The text of this paragraph intends to cover that issue in the absence of such H.324 Implementerís Guide.

The end-to-end transmission delay in the 3G system is expected to be somewhat higher than in GSTN. This will need to be considered for timer settings in connection with the ITU-T Recommendation H.245 [5] implementation. For that reason, ITU-T Recommendation H.324 [7] Annex C (and hence also 3G-324M) mandates the use of ITU-T Recommendation H.324 [7] Annex E for initializing the timer T401. The following additional guidelines for initializing and updating the timer T401 should be considered: ffs.

H.324 [7] Annex A defines the NSRP retransmission protocol that H.324 [7] Annex C mandates for use on mobile channels. To reduce the application setup time, H.245 [5] messages should be concatenated into as few NSRP packets as possible. Note that NSRP is not a windowed protocol and thus requires that the transmitter receive an NSRP response frame before the next NSRP command frame can be sent.

Note that the H.245 [5] OpenLogicalChannel replacementFor procedure may be used to obtain seamless H.264 [18] change of sequence (parameter set update).

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