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Corrigendum 1
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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Infrastructure of audiovisual services – Communication procedures

Corrigendum 1:

Extended video procedures and control signals for H.300-series terminals

FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure e.g. interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

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As of the date of approval of this Recommendation, ITU [had/had not] received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

Corrigendum 1 to ITU-T Recommendation H.241

Extended video procedures and control signals for H.300-series Terminals

1. Nomenclature

In addition to traditional revision marks, the following marks and symbols are used to indicate to the reader how changes to the text of a Recommendation should be applied:

Symbol	Description
[Begin Correction]	Identifies the start of revision marked text based on extractions from the published Recommendations affected by the correction being described.
[End Correction]	Identifies the end of revision marked text based on extractions from the published Recommendations affected by the correction being described.
...	Indicates that the portion of the Recommendation between the text appearing before and after this symbol has remained unaffected by the correction being described and has been omitted for brevity.
--- SPECIAL INSTRUCTIONS --- {instructions}	Indicates a set of special editing instructions to be followed.

2. Corrections

2.1 Change "CustomMaxBRandCP"to "CustomMaxBRandCPB"

Each time the string "CustomMaxBRandCP" appears, change to "CustomMaxBRandCPB". This is necessary to correct a result of an editorial error in the TSB.

2.2 Addition of comment regarding Levels

There was an intent to require in H.241 that an implementation shall not signal a set of custom capability parameters (CustomMaxMBPS, CustomMaxFS, etc.) indicating the practical capability to fully support a given Level, without also signalling support for that Level directly. This was unintentionally omitted.

[Begin Correction]

<Section 8.3.1.1>

Optional parameters

For each H.264 capability, optional parameters may be signalled. These parameters permit a terminal to signal that, in addition to meeting the support requirements for the signalled Profile and

Level, the terminal has additional capabilities. Such additional capabilities in decoders may permit encoders to send a video stream which takes advantage of these capabilities.

Terminals shall not signal a set of optional parameters indicating the practical capability to fully support a given Level, without also signalling support for that Level.

The optional parameters are:

…

[End Correction]

2.3 Add reference to H.221 BAS command H.264-on

At the May 2003 meeting of SG16 when H.241 was approved, a set of codepoints for the H.320 series Recommendations to support H.241 and H.263 was also approved. Among these were the new BAS command "H.264-on", added to Table A-1 of Rec. H.221, to signal the use of Rec. H.264 video coding in H.320 systems.

As H.241 gives the procedures for signalling H.264 use, it should have mentioned this command.

[Begin Correction]

<New section 6.2.4>

6.2.4 H.264-on BAS command

For BAS-based systems, the H.264-on BAS command defined in Rec. H.221 shall be used to signal that video according to Rec. H.264 is being transmitted. This command shall be used analogously to the BAS command H.261-on. Video shall occupy the same capacity as stipulated in Rec. H.221 for the case of H.261 video.

…

[End Correction]

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2.4 Ambiguous comparison to Table A-1/H.264

The Parameter Description section of Table 9/H.241 contains the sentence (with other errors corrected per the sections above):

> The value of (CustomMaxBRandCPB * 25,000) shall not be less than the value MaxBR computed using units of 1000 bits/sec for the Level given in Table A-1/H.264.

This sentence is open to two possible interpretations, one obviously incorrect.

The correct interpretation is that the bitrate signalled by the CustomMaxBRandCPB parameter shall not be less than the maximum bitrate given in the MaxBR column of Table A-1/H.264, for the Level signalled.

However the phrase "*MaxBR computed using units of 1000 bits/sec*" could be interpreted to mean the numeric value given in the MaxBR column of Table A-1/H.264, which is a value 1000 times less than intended, since the MaxBR column is in units of 1000 or 1200 bits/sec. In this interpretation, the correct limit on the CustomMaxBRandCPB parameter would be (CustomMaxBRandCPB * 25), not (CustomMaxBRandCPB * 25,000).

The correction clarifies the intent.

(Note that the correction shown is relative to the text with other errors corrected per the sections above.)

[Begin Correction]

<Table 9, "Parameter Description" section>

…

This optional parameter, when present, shall be considered to replace the MaxBR and MaxCPB values in Table A-1/H.264 for the signalled Level. The bitrate signalled by the CustomMaxBRandCPB parameter shall not be less than the maximum bitrate given in the MaxBR column of Table A-1/H.264, for the Level signalled.

~~value of (CustomMaxBRandCPB * 25,000) shall not be less than the value MaxBR computed using units of 1000 bits/sec for the Level given in Table A-1/H.264.~~

[End Correction]

2.5   Correct specification of Object Identifier

The specification of the OIDs in H.241 are not conformant with the Recommendations specifying OID format. The identifiers for each element of the OID must begin with a letter (not a digit). These changes correct this.

Note that this correction does not affect the coded value of the OIDs.

[Begin Correction]

<Section 7.1.4>

…

All H.323 systems that support H.264 shall support carriage of the H.264 video stream according to Annex A, and shall signal this in their capability set by including MediaPacketizationCapability.rtpPayload.Type.payloadDescriptor.oid, with the OID having the value {itu-t(0) recommendation(0) h(8) ~~241(~~241~~)~~ specificVideoCodecCapabilities(0) h264(0) iPpacketization(0) h241AnnexA(0)}.

…

<Section 8.3.2.1>

Capability identifier value	{itu-t(0) recommendation(0) h(8) ~~241(~~241~~)~~ specificVideoCodecCapabilities(0) h264(0) generic-capabilities(1)}

…

<Appendix I>

OID	Section Reference
{itu-t(0) recommendation(0) h(8) ~~241~~(241) specificVideoCodecCapabilities(0) h264(0) iPpacketization(0) h241AnnexA(0)}	7.1.4
{itu-t(0) recommendation(0) h(8) ~~241~~(241) specificVideoCodecCapabilities(0) h264(0) generic-capabilities(1)}	8.3.2.1

[End Correction]

2.6   Clarify no change to H.264 level_idc requirement

Confusion has arisen between the Level indicated in the H.264 bitstream by encoders by the **level_idc** syntax parameter and the Level indicated in H.241 by decoders.

The current text of H.241 does not explain how the H.264 syntax parameter **level_idc** is determined when CustomMax parameter(s) are in use, and is not clear that the use of CustomMax parameters to specify decoder capabilities does not alter the requirement of H.264 that **level_idc** indicate the Level with which the bitstream fully conforms, regardless of decoder capabilities.

The addition of this note clarifies this.

[Begin Correction]

<Section 8.3.1.1>

…

These optional parameters permit, for example, support of 1024x768x3 Hz while using Level 2 (CIF/30 Hz), a common mode for videoconferencing systems.

NOTE: The use of these optional parameters to signal decoder capabilities does not alter the requirement of Rec. H.264 that the **level_idc** syntax element, set by the encoder in the video bitstream, indicate a Annex A/H.264 Level with which the bitstream fully conforms. The use of these optional parameters permits the encoder to send bitstreams with a Level higher than the Level capability of the decoder**,** if the bitstream exceeds the decoder's Level capability only within the limits of these optional parameters. To maximize interoperability, encoders should set **level_idc** to indicate the lowest Level of Annex A/H.264 that the bitstream fully conforms to.

All H.300 series systems which support H.264 shall support Baseline Profile, Level 1, in addition to any other Profiles, Levels or optional parameters.

[End Correction]

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