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AMENDMENT

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Information technology — Generic coding of moving pictures and associated audio information —

Part 1: Systems

AMENDMENT 5: Transport of MVC depth video sub-bitstream and extensions to support HEVC low delay coding mode

Technologies de l'information — Codage générique des images animées et du son associé — Partie 1: Systèmes

AMENDEMENT 5 : Transport de sous-flux de données binaires vidéo de MVC de profondeur et extensions pour la prise en charge du mode de codage à délai court en HEVC

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INTERNATIONAL STANDARD
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Rec. ITU-T H. 222.0 (2012) /FDAM 5 (E)
ITU-T RECOMMENDATION

Information technology – Generic coding of moving pictures and associated audio information: Systems

Amendment 5

Transport of MVC depth video sub-bitstream and support for HEVC low delay coding mode

1) Replace subclause 1.2.2

from

– Recommendation ITU-T H.264 (2010), *Advanced video coding for generic audiovisual services*.

ISO/IEC 14496-10:2010, *Information technology – Coding of audio-visual objects – Part 10: Advanced video coding*.

by

– Recommendation ITU-T H.264 (2013), *Advanced video coding for generic audiovisual services*.

ISO/IEC 14496-10:2013, *Information technology – Coding of audio-visual objects – Part 10: Advanced video coding*.

2) Subclause 2.1.82 - 2.1.115

Replace subclause 2.1.82 by the following:

2.1.82 view order index: An index that indicates the decoding order of MVC view components in an AVC access unit as defined in Annex H of Rec. ITU-T H.264 | ISO/IEC 14496-10 or MVCD view components in an AVC access unit as defined in Annex I of Rec. ITU-T H.264 | ISO/IEC 14496-10. The association of view order index values to the NAL unit header syntax element view_id is indicated for an AVC video sequence in the sequence parameter set MVC extension as defined in Annex H of Rec. ITU-T H.264 | ISO/IEC 14496-10 or in the sequence parameter set MVCD extension as defined in Annex I of Rec. ITU-T H.264 | ISO/IEC 14496-10.

Add after subclause 2.1.109:

2.1.110 MVCD view_id subset: A set of one or more view_id values, as defined in Annex I of Rec. ITU-T H.264 | ISO/IEC 14496-10 in the NAL unit header syntax element, associated with one set of consecutive view order index values.

NOTE – An MVCD video sub-bitstream or MVCD base view sub-bitstream based on a specific MVCD view_id subset may not include view components for all view_id values included in that MVCD view_id subset. One or more view order index values may be skipped if the view associated with a missing view order index value is not required for decoding the transmitted views.

2.1.111 MVCD video sub-bitstream: The MVCD video sub-bitstream is defined to be all VCL NAL units with nal_unit_type equal to 21 associated with the same MVCD view_id subset of an AVC video stream and associated non-VCL NAL units which conform to one or more profiles defined in Annex I of Rec. ITU-T H.264 | ISO/IEC 14496-10.

NOTE – In contrast to a sub-bitstream as specified in Annex I of Rec. ITU-T H.264 | ISO/IEC 14496-10, an MVCD video sub-bitstream according to this Specification is not necessarily a decodable MVCD video sub-bitstream. The one exception is when an MVCD video sub-bitstream is also an MVCD base view sub-bitstream. Re-assembling MVCD video sub-bitstreams in an increasing order of view order index, starting from the lowest value of view order index up to any value of view order index, results in a decodable AVC video stream.

2.1.112 MVCD base view sub-bitstream: The MVCD base view sub-bitstream is defined to contain the AVC video sub-bitstream of MVCD conforming to one or more profiles defined in Annex I of Rec. ITU-T H.264 | ISO/IEC 14496-10 and one additional MVCD video sub-bitstream associated with an MVCD view_id subset including the view order index that immediately follows the view order index associated with the base view.

NOTE – The MVCD base view sub-bitstream is also an AVC video stream where no re-assembly is required before decoding.

2.1.113 MVCD view-component subset: The VCL NAL units of an AVC access unit associated with the same MVCD view_id subset and associated non-VCL NAL units.

NOTE – Re-assembling MVCD view-component subsets ordered according to the view order index, starting from the minimum view order index up to the highest view order index present in the access unit, while reordering the non-VCL NAL units conforming to the order of NAL units within an access unit, as defined in Rec. ITU-T H.264 | ISO/IEC 14496-10, results in an AVC access unit.

2.1.114 MVCD slice (system): A byte_stream_nal_unit with nal_unit_type syntax element equal to 21 of an AVC video stream which conforms to one or more profiles defined in Annex I of Rec. ITU-T H.264 | ISO/IEC 14496-10.

2.1.115 AVC video sub-bitstream of MVCD: The video sub-bitstream that contains the base view as defined in Annex I of Rec. ITU-T H.264 | ISO/IEC 14496-10, containing all VCL NAL units associated with the minimum value of view order index present in each AVC video sequence of the AVC video stream. The AVC video sub-bitstream of MVCD may additionally contain the associated NAL units with nal_unit_type syntax element equal to 14 (prefix NAL units), as defined for MVC in Annex H of Rec. ITU-T H.264 | ISO/IEC 14496-10.

3) Clause 2.4.2

Add the following immediately after 2.4.2.11 as a new subclause:

2.4.2.12 T-STD extensions for carriage of MVCD video sub-bitstream*:*

T-STD extensions and T-STD parameters for decoding of MVCD video sub-bitstreams are defined in 2.14.1 and 2.14.3.7.

Note : Program stream extensions are not specified for MVCD video sub-bitstreams.

4) Clause 2.4.3.5

In the section specifying the discontinuity_indicator, add at the end of the bulleted list introduced by "For the purpose of this clause, an elementary stream access point is defined as follows":

MVCD video sub-bitstreams of AVC video streams conforming to one or more profiles defined in Annex I of Rec. ITU-T H.264 | ISO/IEC 14496-10 – The first byte of an MVCD view-component subset is an elementary stream access point if the following two conditions are met:

– The subset sequence parameter sets and picture parameter sets referenced in this and all subsequent MVCD view-component subsets in the MVCD video sub-bitstream shall be provided after this access point in the byte stream and prior to their activation.

– If this MVCD video sub-bitstream access point requires the elementary stream access point of the same AVC access unit, if any, contained in the corresponding elementary stream that needs to be present in decoding order before decoding the elementary stream associated with this elementary stream access point, then the corresponding elementary stream shall also include an elementary stream access point.

NOTE x – If the hierarchy descriptor is present for this MVCD video sub-bitstream, then the MVCD video sub-bitstream of which the hierarchy_layer_index equals the hierarchy_embedded_layer_index of this MVCD sub-bitstream should have an elementary stream access point in this same access unit.

In the section specifying the elementary_stream_priority_indicator, add at the end of the paragraph introduced by "For MVC video sub-bitstreams":

For MVCD video sub-bitstreams or MVCD base view sub-bitstreams of AVC video streams conforming to one or more profiles defined in Annex I of Rec. ITU-T H.264 | ISO/IEC 14496-10, this field may be set to '1' only if the payload contains one or more bytes from an anchor picture, indicated by the slice_type equal to 2, 4, 7, or 9 and the anchor_pic_flag syntax element equal to 1 for all prefix NAL units and slice extension NAL units.

5) Clause 2.4.3.7

In the section specifying the stream_id, add at the end of the paragraph: