

**Joint Video Experts Team (JVET)
of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC
29/WG 11**

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Title: AHG9/AHG8: Scalability dimension SEI message

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Abstract

This contribution proposes a new SEI message, named scalability dimension SEI message, for signalling of scalability dimension information for a VVC bitstream, including 1) whether the bitstream is a multiview bitstream, and if yes, the view ID of each layer, and 2) whether one or more layers in the bitstream represent auxiliary information such as alpha, depth, etc., and if yes, which layers represent what.

Introduction

VVC supports multi-layer scalabilities. However, given a VVC multi-layer bitstream, it is unknown whether the bitstream of an OLS is a multiview bitstream or just a bitstream consisting of multiple layers with SNR and/or spatial scalabilities. Furthermore, given a VVC multi-layer bitstream, it is unknown whether there is one or more layers representing auxiliary information such as alpha, depth, etc., and if yes, which layers represent what.

To address these issues, an SEI message, named scalability dimension SEI message, is proposed.

It is understood that for fully support of multiview and other applications, camera parameters and other multiview information like those signalled in the multiview acquisition information SEI message and other SEI messages specified in HEVC subclause G.14 would also be needed. Therefore, the proposal here is intended to be a starting point.

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JVET-T0070

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Document Information

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Associated Resources

Comments

MEETING NOTES

external meeting notes

https://www.itu.int/wftp3/av-arch/jvet-site/2020_10_T_Virtual/JVET-T_Notes_dH.docx

□ ■ ■ Joint Video Experts Team (JVET) of ITU-T SG21 WP3/21 and ISO/IEC JTC 1/SC 29 20th Meeting; by teleconference, October 2020	Document: JVET-T0070
Title: Meeting Report of the 41st Meeting of the Joint Video Experts Team Status: Report document from the chair of JVET Purpose: Report	

1 Summary

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MEETING NOTES

[JVET-T0070](#) AHG9/AHG8: Scalability dimension SEI message [Y.-K. Wang, L. Zhang, K. Zhang, Z. Deng (Bytedance)]

See section 6.2.

[JVET-T0070](#) AHG9/AHG8: Scalability dimension SEI message [Y.-K. Wang, L. Zhang, K. Zhang, Z. Deng (Bytedance)]

This was discussed in session 21 at 2310 on Thursday 15 October 2020 (chaired by GJS & JRO).

scalability_dimension(payloadSize) {	Descriptor
sd_max_layers_minus1	u(6)
sd_multiview_info_flag	u(1)
sd_auxiliary_info_flag	u(1)
if(sd_multiview_info_flag sd_auxiliary_info_flag) {	
if(sd_multiview_info_flag)	
sd_view_id_len	u(4)
for(i = 0; i <= vps_max_layers_minus1; i++) {	
if(sd_multiview_info_flag)	
sd_view_id_val[i]	u(v)
if(sd_auxiliary_info_flag)	
sd_aux_id[i]	u(8)
}	
}	
}	

This is proposed to be at the CVS level, having information for all the layers in a CVS.

Additional information would be needed for complete interpretation such as camera parameters, depth channel interpretation, alpha channel interpretation specification.

It was suggested to consider the potential use of a very large number of layers, saying that we should make sure to produce something relatively “future proof”.

It was commented that “vps_max_layers_minus1” should be “sd_max_layers_minus1”, although perhaps those should be required to be equal to each other.

It was commented that the SEI message approach seems like a good one for handling this sort of information.

Further study was encouraged toward development of a more complete approach.

CITATION

Y.-K. Wang, L. Zhang, K. Zhang, Z. Deng, "AHG9/AHG8: Scalability dimension SEI message", JVET-T0070, 20th Meeting: by teleconference, October 2020.