|  |  |
| --- | --- |
| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11**  16th Meeting: San José, US, 9–17 Jan. 2014 | Document: JCTVC-P0011 |

|  |  |  |  |
| --- | --- | --- | --- |
| *Title:* | **JCT-VC AHG report: SHVC text editing (AHG11)** | | |
| *Status:* | AHG report input to JCT-VC | | |
| *Purpose:* | AHG report | | |
| *Author(s) or Contact(s):* | Jianle Chen Qualcomm Incorporated  Jill Boyce  Vidyo  Yan Ye InterDigital  Miska Hannuksela Nokia Corporation  Ye-kui Wang Qualcomm Incorporated | Email:  Email:  Email:  Email:  Email: | [cjianle@qti.qualcomm.com](mailto:cjianle@qti.qualcomm.com)  [jill@vidyo.com](mailto:jill@vidyo.com)  [Yan.Ye@InterDigital.com](mailto:Yan.Ye@InterDigital.com)  [miska.hannuksela@nokia.com](mailto:miska.hannuksela@nokia.com)  [yekuiw@qti.qualcomm.com](mailto:yekuiw@qti.qualcomm.com) |
| *Source:* | AHG | | |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Abstract

This document reports the work of the JCT-VC ad hoc group on SHVC text editing (AHG11) between the 15th JCT-VC meeting in Geneva (23 October – 01 November 2013) and the 16th JCT-VC meeting in San Jose (9 – 17 January 2014).

# Mandate

At the 15th meeting of the ITU-T/ISO/IEC Joint Collaborative Team on Video Coding (JCT-VC), AHG11 on SHVC text editing was established with the following mandates:

* Produce and finalize JCTVC-O1007 SHVC Test Model 4 (SHM 4) text.
* Produce and finalize JCTVC-O1008 SHVC text specification Draft 4.
* Gather and address comments for corrections and editorial improvements of these documents.
* Coordinate with AHG12 on SHVC software development to address issues relating to mismatches between software and text

# Summary of Activities

The whole editorial team worked on both two documents: JCTVC-O1007 (SHVC Test Model 4 text) [1] and JCTVC-O1008 (SHVC draft 4) [2]. Editing JCTVC-O1008 was assigned a higher priority than editing JCTVC-O1007.

One version of JCTVC-O1007 and three versions of JCTVC-O1008 were published by the editing AHG following the 15th JCT-VC meeting in Geneva.

The main changes in JCTVC-O1008, relative to the previous JCTVC-N1008 (SHVC Draft 3) are:

* + Incorporation of all adopted common HLS proposals at the 15th JCTVC meeting
  + Integration of all adopted SHVC-specific proposals at the 15th JCTVC meeting, includes:
    - (Scalable main profile decision 3): base layer bitstream conformant to main profile and enhancement layers shall be YUV420 and 8 bits
    - (JCTVC-O0094, Scalable Main profile decision 2): layer number in any dependency layer chain shall be less than or equal to 8
    - (JCTVC-O0253, Scalable Main profile decision 1): profile constraints apply to an output layer set
    - (JCTVC-O0216): Slice information derivation for inter-layer reference picture
    - (JCTVC-O0215): Signaling a flag to specify the phase alignment between layers (zero or center phase shift) for upsampling process
    - (JCTVC-O0199): Adding a flag in VPS VUI for indication of skipping enhancement layer IRAP picture when single\_layer\_for\_non\_irap\_flag is equal to 1
    - (JCTVC-O0194): Supporting bit-depth scalability by reducing scaling step after resampling when higher bit depth is used in enhancement layer
    - (SCE1): Arbitrary Spatial Ratio (ASR) with filters as documented in JCTVC-O0031 tables 2 and 3, first column
  + Editorial improvements and fixes
  + Fix of ticket #3 and #4.

JCTVC-O1007 Test Model 4 document mainly contains the general descriptions of SHVC framework, texture data resampling process and motion field mapping process. The main change to the previous JCTVC-N1007 (SHM3) is the inclusion of up-sampling and down-sampling process for arbitrary spatial ratio.

# Recommendations

The AHG recommends to:

* Use SHVC bug-tracker (<https://hevc.hhi.fraunhofer.de/trac/shvc>) to report issues related to SHVC Draft and Test Model text.
* Compare the SHVC documents with the SHVC software and resolve any discrepancies that may exist, in collaboration with the SHVC Software AHG.
* Continue to improve the overall editorial quality of the SHVC Draft and Test Model text documents.
* Proponents provide mature text due to the short editing period after the meeting.

# Reference

1. J. Chen, J. Boyce, Y. Ye and M. M. Hannuksela, “Scalable HEVC (SHVC) Test Model 4 (SHM 4)”, JCTVC-O1007, 15th JCTVC Meeting, Geneva, CH, Oct. 2013
2. J. Chen, J. Boyce, Y. Ye and M. M. Hannuksela, Y.-K. Wang“Scalable High Efficiency Video Coding Draft 4”, JCTVC-O1008, 15th JCTVC Meeting, Geneva, CH, Oct. 2013