|  |  |
| --- | --- |
| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11**  21st Meeting: Warsaw, PL, 19–26 June 2015 | Document: JCTVC-U0006 |

|  |  |  |  |
| --- | --- | --- | --- |
| *Title:* | **JCT-VC AHG report: SCC coding performance analysis (AHG6)** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Report | | |
| *Author(s) or Contact(s):* | Haoping Yu Huawei R&D USA  Robert Cohen Mitsubishi Electric Research Laboratories  Alberto Duenas NGCodec  Polin Lai MediaTek  Krishna Rapaka Qualcomm  Jizheng Xu Microsoft | Email: | haoping.yu@huawei.com  cohen@merl.com  alberto@ngcodec.com  polin.lai@mediatek.com  krapaka@qti.qualcomm.com  jzxu@microsoft.com |
| *Source:* | AHG6 | | |

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

# Abstract

This report summarizes the activities of the JCT-VC ad hoc group on SCC coding performance analysis (AHG6) between the JCT-VC 20th meeting in Geneva, Switzerland, and the 21st meeting in Warsaw, Poland.

# Mandates

# • Study test conditions and coding performance analysis methods for SCC coding performance

# • Analyze coding performance of draft and proposed SCC coding features

# Activities

## Email reflector activity

The kick-off message for AHG 6 was sent out on Feb. 21.

## Common test conditions in JCTVC-T1015

Per the decisions captured in the meeting notes JCTVC-T\_Notes\_d8, the following changes have been made in JCTVC-T1015 “Common Test conditions for screen content coding”:

* Added 10 new 4:2:0 sequences; they were converted by sub-sampling the original 4:4:4 test sequences with simple filters described in the meeting notes.
* Uploaded these sequences to the ftp site for all test material
* provided updated version of results reporting templates (Lossy and Lossless)

* Added 4x1 CTU IBC test conditions for 4:4:4 sequences; provided associated encoder settings as shown below.
* HashBasedIntraBlockCopySearchEnabled = 1
* IntraBlockCopySearchWidthInCTUs = 3
* IntraBlockCopyNonHashSearchWidthInCTUs = 1,

## Related contributions

**JCTVC-U0150**: New SCC test sequence for consideration [W. Wang, M. Xu, F. Duanmu, H. Yu (Huawei)]

This contribution proposes a new sequence *ChineseEditing* for SCC CTC. According to the proponents, this new sequence brings in different statistics in the usage of coding tools, when compared with the existing SCC test sequences. For example, up to 30% more pixels were encoded in Palette mode in *ChineseEditing* sequence than in the existing Text & graphics with motion class. The authors provided detailed statistical information on the percentage of pixels coded in IBC, Palette, and Intra Prediction, as well as the percentage of bits accounted for each of these tools individually. The authors also provided example pictures that showed the usage of IBC/Palette/Intra-Prediction under different IBC search window settings, i.e. full frame and 4x1 CTU. This new sequence is available for review during this meeting.

**JCTVC-U0051**: Comparison of Compression Performance of HEVC Test Model 16.4 and HEVC Screen Content Coding Extensions Test Model 4 with AVC High 4:4:4 Predictive profile [B. Li, J. Xu, G. J. Sullivan (Microsoft)]

This contribution is a study of the relative objective (i.e. PSNR-based) compression performance of HEVC RExt Main 4:4:4 Profile, HEVC Screen Content Coding (SCC) Test Model 4 (SCM 4) and AVC High 4:4:4 Predictive Profile.

**JCTVC-U0058**: Compression Performance of HEVC Screen Content Coding Extensions Test Model 4.x with slices [C. Gisquet, G. Laroche, P. Onno (Canon)]

This contribution is a study of the relative objective (i.e. PSNR-based) compression performance of HEVC SCC Test Model 4.x (SCM 4.x) using a configuration of 1500 bytes per slice.

# Recommendations

It is recommended to

* Review the proposed new test material.
* Discuss further improvements to CTC
* Continue to evaluate the coding performance of the newly adopted tools and their interaction with the existing HEVC tools in the Main profile and range extensions.