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| **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-U0009 |

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| *Title:* | **JCT-VC AHG report: Complexity of SCC extensions (AHG9)** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Report | | |
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| *Source:* | Ad Hoc Group | | |

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# Abstract

This document reports on the work of the JCT-VC ad hoc group on Complexity of SCC extensions (AHG9) between the 20th JCT-VC meeting in Geneva, Switzerland (February 2015) and the 21st JCT-VC meeting in Warsaw, Poland (June 2015).

# Introduction

At the 20th meeting of the ITU-T/ISO/IEC Joint Collaborative Team on Video Coding (JCT-VC), AHG9 on Complexity of SCC extensions was established with the following mandates:

* Analyze complexity characteristics of current and proposed SCC coding methods with regards to throughput, amount of memory, memory bandwidth, parsing dependencies, parallelism, pixel processing, chroma position interpolation, and other aspects of complexity as appropriate.
* Quantify and compare the average and worse case throughput (context-coded as well as bypass bins) for SCC coding methods.
* Study latency and parallelism implications of SCC coding techniques, considering multicore and single-core architectures.
* Identify criteria to determine the hardware implementability of the key hardware modules.
* Identify bottlenecks in the current design with regard to implementation complexity.

# Reflector discussions

The AhG used the JCT-VC reflector for all discussions. A kick-off message was sent on June 11th, 2015. No other coordinated AhG activity took place, and no other emails were exchanged over the JCT-VC reflector between the 20th JCT-VC meeting in Geneva, Switzerland (February 2015) and the 21st JCT-VC meeting in Warsaw, Poland (June 2015).

# Related contributions

Document on CE1 Test B (JCTVC-U0050) was related to the complexity of index adjustment in palette mode. All the documents classified as CE2 were related to memory bandwidth issues in IBC. Other related documents are:

JCTVC-U0052: On the palette escape pixel coding

JCTVC-U0065: CE2-related: Intra block copy searching constraints for reducing worst case bandwidth

JCTVC-U0086: CE1-related: Simplification on coding NumPaletteIndices

JCTVC-U0090: CE1-related: Palette Mode Context and Codeword Simplification

JCTVC-U0093: Non-CE1: On Number of Palette Indices coding

JCTVC-U0097: Non-CE1: On maximum palette predictor size

JCTVC-U0099: Modified method for sending number of palette indices

JCTVC-U0100: On operation of DPB in Screen Content Coding

JCTVC-U0105: Non-CE1: Simplification on deriving NumPaletteIndices for palette mode

JCTVC-U0109: Non-CE1: Simplification for parsing the index of the most significant bit in the paletteRun binarization

JCTVC-U0148: Non-CE1: Context model unification for palette run type flags in HEVC SCC

JCTVC-U0149: Non-CE1: Index Map Splitting (IMS) Mode for Palette Coding in HEVC SCC

# Recommendations

The AhG recommends to review the contributions related to mandates.