|  |  |
| --- | --- |
| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11**  6th Meeting: Torino, 14-22 July, 2011 | Document: JCTVC-F723 |

|  |  |  |  |
| --- | --- | --- | --- |
| *Title:* | **Cross-verification of F608 and F296 by Nokia** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Information | | |
| *Author(s) or Contact(s):* | Kemal Ugur  Oguz Bici  Visiokatu 1, Tampere Finland | Tel: Email: | +358 50 4860857 kemal.ugur@nokia.com |
| *Source:* | Nokia | | |

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

# Abstract

This contribution presents cross-check results by Nokia for Qualcomm’s proposals JCTVC-F608 and JCTVC-F296

# Introduction

This contribution presents cross-check results by Nokia for Qualcomm’s proposals JCTVC-F608 and JCTVC-F296. All the results match with the reported results and the software is implementing what is described in the contributions. Nokia’s results are attached to the contribution.

**JCTVC-F296 : Modifications for CAVLC RDOQ**

This proposal modifies the RDOQ for CAVLC entropy coding scheme. This contribution provides two different methods whose performance are checked individually and also together.

**Method -1:** Current RDOQ checks each one of the non-zero coefficients as a candidate for last coefficient. This method aims to reduce the encoder complexity by checking the subset of the candidate coefficients.

**Method-2:** Aims to improve the bit count estimate for run mode.

**Recommendation:** The results match with the reported results in F296 and it seem to bring a better coding-efficiency complexity tradeoff.

**JCTVC-F608: Removing Chroma Zonal Coding in CAVLC**

In HM3.0, only the lowest 64 coefficients in scan order are coded for chroma in CAVLC entropy coding. This proposal aims to unify the chroma coding with luma and for all block sizes all the coefficients are coded. The results indicate that there is a slight improvement in chroma bitrate (around 0.1% on average) and no change on luma bitrate. In addition, the proposal indicates that the size of the codewords might increase larger than 32 bits. Two methods are included in the revised contribution to reduce the codeword size.

**Recommendation:** Having zonal coding might have benefits in terms of implementation complexity as not all the coefficients need to be inverse transformed. This should be studied before adopting the proposal.

# Patent rights declaration(s)

**Nokia may have IPR relating to the technology described in this contribution and, conditioned on reciprocity, is prepared to grant licenses under reasonable and non-discriminatory terms as necessary for implementation of the resulting ITU-T Recommendation | ISO/IEC International Standard (per box 2 of the ITU-T/ITU-R/ISO/IEC patent statement and licensing declaration form).**