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| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11**  5th Meeting: Geneva, 16-23 March, 2011 | Document: JCTVC-E015 |

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| *Title:* | **Motion compensation interpolation AdHoc group report** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Ad-hoc Report | | |
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| *Source:* | Motion compensation interpolation AhG | | |

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# Introduction

The motion compensation AhG was formed at the 4th JCT-VC meeting at Daegu, Korea with the following mandates:

* Study the coding efficiency and complexity characteristics of proposed interpolation filtering methods
* Draft proposed core experiments relating to motion compensation interpolation
* Identify and discuss additional issues relating to motion compensation filtering

# Activities since Daegu meeting

A Core Experiment was formed in Daegu to study performance and complexity of various luma interpolation filters. Most of the AhG activity has been performed within this core experiment. The complexity of various interpolation filters is assessed using a common excel sheet is used that count average and worst-case complexities of various interpolation filters by counting operation counts and number of adds/shifts.

The following documents are the summaries written by the respective CE coordinators and provide a list of input contributions related to the core experiment (6 proposals in general).

* Summary document
  + JCTVC-E023 [CE coordinators] Summary of CE3 : interpolation for MC (Luma)
* Proponent's documents
  + JCTVC-E078 [S.Matsuo, Y.Bandoh, T.Ito, S.Takamura, H.Jozawa (NTT)] CE3: Region-based adaptive interpolation filter
  + JCTVC-E128 [K.Kondo, T.Suzuki (Sony)] CE3: Results on Bi/Single MC interpolation filter
  + JCTVC-E134 [T.Chujoh, K.Kanou, T.Yamakage (Toshiba)] CE3: Non-uniform tap length filtering for bidirectional prediction
  + JCTVC-E188 [T.Yoshino, S.Naito] CE3 : Switching interpolation filter scheme
  + JCTVC-E284 [F.Kossentini, N.Mahdi (eBrisk Video)] An Adaptive Interpolation Filtering Technique
  + JCTVC-E358 [J. Lou, K. Minoo, D. Baylon, K. Panusopone, L. Wang (Motorola Mobility)] CE3: Report on Motorola Mobility's interpolation filter for HEVC

In addition to proposals to core experiments, following contributions have been received

* + JCTVC-E129 [K.Kondo, T.Suzuki (Sony)] Memory bandwidth reduction MC filter
  + JCTVC-E241 [K.Ugur, J.Lainema (Nokia)] Low complexity bi-predictive interpolation with 6-tap DCT-IF filter
  + JCTVC-E242 [K.Ugur, J.Lainema (Nokia)] On clipping in bi-directional averaging
  + JCTVC-E284 [F. Kossentini, N. Mahdi (eBrisk Video)] An Adaptive Interpolation Filtering Technique

Following two contributions related to interpolation filtering were registered but not yet available on one day prior to the meeting.

* + JCTVC-E359 [J.Lou, K.Minoo, D.Baylon, K.Panusopone, L.Wang (Motorola Mobility)] Motorola Mobility's adaptive interpolation filter
  + JCTVC-E426 [E.Alshina, J.Chen, A.Alshin, N.Shlyakhov] Experimental results of 4 taps/5 bits Chroma DCTIF in HM2.0

# Recommendations

The AhG recommends to review all CE3 related input contributions and the additional contributions proposed to the meeting.