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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**  13th Meeting: Incheon, KR, 18–26 Apr. 2013 | Document: JCTVC-M0088 |

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| *Title:* | **Crosscheck: AHG-17: complexity and performance analysis of different length up-sampling filters in SHM1.0** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Proposal | | |
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# Abstract

In SHM1.0, up-sampling uses 8-tap filters for Luma and 4-tap filters for Chroma. Alshina and Alshin [1] proposed to evaluate the performance of using 6-tap filters for Luma and 2-tap filters for Chroma. The reported results are cross checked in this proposal. The RD performance and the code implementation match the report [1].

# Simulation results

The simulation is performed in a heterogeneous cluster. Simulation time is not reliable.

Simulation environment: Linux, x86\_64, SUSE, gcc 4.1.2

**Table** 1. Short Filter v.s. SHM1.0 Anchor (TextureRL framework)





**Table** 2. Short Filter v.s. SHM1.0 Anchor (RefIdx framework)





Complexity analysis crosscheck results are attached.

# Patent rights declaration(s)

**Qualcomm Incorporated may have current or pending patent rights 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).**

**Reference**

1. E. Alshina and A. Alshin, “AHG-13,17: Complexity and performance analysis of different length up-sampling filters in SHM1.0,” JCTVC-M0088, 13th Meeting, Incheon, KR, 18–26 Apr. 2013.