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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-M0188 |

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| *Title:* | **Crosscheck: Up-sampling based on sampling grid information for aligned inter layer prediction** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Proposal | | |
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# Abstract

In SHM1.0 [3], the codec assumes that the down-sampling filter which generates base layer original picture from enhancement layer original picture and the up-sampling filter which generates interlayer reference picture are phase aligned. J. Dong, Y. Ye, and Y. He [1] studied the case when up-sampling and down-sampling filters have phase mismatch. The reported results are cross checked in this proposal. Both 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. M0188 v.s. SHM1.0 (RefIdx framework)





# 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. J. Dong, Y. Ye, and Y. He, “Upsampling based on sampling grid information for aligned inter layer prediction,” JCTVC-M0188, 13th Meeting: Incheon, KR, 18–26 Apr. 2013.
2. J. Dong, Y. He, Y. Ye, “Downsampling filter for anchor generation for scalable extensions of HEVC,” m23485, 99th MPEG meeting, San Jose, USA, Feb. 1-10, 2012.
3. J. Chen, J. Boyce, Y. Ye, M. M. Hannuksela, “SHVC Test Model 1 (SHM 1),” JCT-VC document, JCTVC-L1007, Geneva, Switzerland, Jan. 2013.