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| *Title:* | **TE5: Cross-check results of test 5.3.1 on inter-layer inferred prediction mode** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Information | | |
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# Abstract

This contribution reports cross-check results of JCTVC-L0266 on inter-layer inferred prediction mode. In TE5 5.3.1, it is described that the prediction information for a current enhancement layer CU is inferred from its co-located base layer blocks. The source code has been checked to verify the consistency with the description in JCTVC-L0266, and the simulation results in this document match with those provided by the proponents.

# Introduction

At the last meeting, TE5 [1] was set up for testing inter-layer syntax prediction tools for SHVC. TE5.3.1 includes inter-layer inferred prediction mode, and the related proposal is described in JCTVC-L0266 [2].

For the prediction mode, motion information of each sub-block in the CU of enhancement layer is derived from the co-located block of base layer. The motion information includes inter prediction direction, reference index, and motion vectors. If a co-located block of base layer does not have motion information, the reconstructed samples of base layer block are used to predict the corresponding enhancement layer block. To indicate the mode, a flag is signaled at CU level. In addition, uncompressed motion vector of base layer is used for the prediction mode, and the motion compression process for the base layer frame is performed after en/decoding an enhancement layer frame.

# Simulation results

The experiments are conducted on the cluster platform of 64-bit Linux version, and three cases are tested according the sub-block size and motion compression.

Test A: The sub-block size is 4x4

Test B: The sub-block size is 8x8

Test C: The sub-block size is 8x8, Compressed motion vector of base layer is used

Table 1. Test A



Table 2. Test B



Table 3. Test C



# Conclusions

Inter-layer inferred prediction using sub-block size as 4x4 in TE5.3.1 gives BD-rate of -2.2% for RA and -1.3% for LD-P 2x spatial scalability, and -2.3% for RA and -1.3% for LD-P 1.5x spatial scalability, respectively. It is verified that the simulation results matched with those of the proponent.

# Reference

1. V. Seregin, P. Onno, S. Liu, T. Lee, C. Kim, H. Yang “Description of Tool Experiment C5: Inter-layer syntax prediction using HEVC base layer”, JCTVC-K1105, Oct. 2012, Shanghai, China.
2. L. Guo, J. Chen, M.Karczewicz “TE5: Results of Test 5.3.1 on Inter-layer Inferred Prediction Mode”, JCTVC-L0266, Jan. 2013, Geneva, Switzerland.