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| *Title:* | **Non-TE3: Cross-check of JCTVC-L0190 on extension of generalized residual prediction** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Proposal | | |
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# Abstract

This contribution reports the results of a cross-check of JCTVC-L0190 on an extension of generalized residual prediction. The simulation results reportedly matched those provided by the proponents.

# Introduction

In TE B3, Qualcomm proposed a generalized residual prediction in Test 4.6.2.1. The conventional inter motion compensated predictor is augmented by adding a weighted version of the base layer prediction residual (using the same motion vector as the enhancement layer). For example, for uni-directional prediction,

where *P* is the final predictor, *Pe0* is the conventional motion compensated predictor, *w* is a weight signaled at the CU level that takes on values of 0, 0.5 or 1, *Bb* is the co-located base layer block, and *Pb0* is the conventional motion compensated prediction for the base layer using the same motion vector. Therefore, there can be up to 3 different Inter predictors:

A similar approach can be taken for bi-directional prediction.

In the extension proposed in JCTVC-L0190, another Inter predictor is added, i.e.,

This can be thought of as adding a weighted difference term to the IntraBL predictor. The use of this predictor is also signaled through the same unary-binarized index as before.

In addition to the above mode, a fast GRP encoder algorithm and difference domain motion estimation was also used, as was tested in TE B3 Test 4.6.2.1.

# Experimental results

We received the source code from the proponents (with GRP\_NonTE3\_3W set to 1), implemented in SMUC 0.1.1, and did a code study to verify that the proposed method is implemented as described. We used the common conditions generated from AHG10 in our experiments and ran simulations for the cases of RA and LDP.

The results match what was provided by the proponents and is as follows:



# Conclusion

In this contribution, we have presented the results of our cross-check of JCTVC-L0190. The implemented algorithm agrees with the proponent’s description, and the simulation results also match that provided by the proponents.