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Abstract

This contribution proposes four simplifications on bi-prediction optical flow (BIO). The first simplification is to reduce operation bit depth by applying bit depth constraints. The second simplification is to reduce the worst case number of extra 8-tap interpolation filtering by disabling BIO for small CUs. The third simplification is to reduce data dependency by applying one fixed filter to intermediate results after horizontal interpolation in MC process for gradient calculation. The four simplification is to reduce the required MC samples. Simulation results are shown as follows, where the anchor disables BIO.

BIO: VTM2.0.1-RA: {Y-BD-rate = -1.41%, EncT=105%, DecT=119%}

BIO with simplification 1: Apply bit depth constraints VTM2.0.1-RA: {Y-BD-rate = -1.38%, EncT=105%, DecT=119%}

BIO with simplification 2: Disable BIO for small CUs VTM2.0.1-RA: {Y-BD-rate = -1.36%, EncT=104%, DecT=117%}

BIO with simplification 3: Apply one fixed filter to intermediate results after horizontal interpolation in MC process for gradient calculation VTM2.0.1-RA: {Y-BD-rate = -1.13%, EncT=106%, DecT=123%}

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CE9-related: BIO simplifications

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ABSTRACT

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MEETING NOTES

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MEETING NOTES

[JVET-L0099](#) CE9-related: BIO simplifications [C.-Y. Lai, Y.-C. Su, T.-D. Chuang, C.-Y. Chen, Y.-W. Huang, S.-M. Lei (MediaTek)]

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REFERENCES

1. [C.-Y. Chen, C.-Y. Lai, Y.-W. Huang, S.-M. Lei, "CE9.5.2: BIO with simplified gradient calculation, adaptive BIO granularity, and applying BIO to chroma components", JVET-K0255, 11th Meeting: Ljubljana, July 2018.](#)
2. [F. Bossen, J. Boyce, X. Li, V. Seregin, K. Sühring, "JVET common test conditions and software reference configurations for SDR video", JVET-K1010, 11th Meeting: Ljubljana, July 2018.](#)