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| *Title:* | **3D-CE2.a results on** **simplified inter-view candidate derivation** | | |
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| *Purpose:* | Proposal | | |
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# Abstract

This contribution presents results of CE2.a experiments related to the simplification of the inter-view candidate derivation, which was first proposed in JCT3V-B0082. In ATM-6.0, the inter-view candidate in Skip/Direct mode is derived from two different corresponding blocks in a reference view. In the proposed method, the inter-view candidate is derived from a single corresponding block to reduce memory access bandwidth. The experimental results reportedly show that this proposed simplification brings no coding efficiency loss compared to ATM-6.0.

# Introduction

In ATM-6.0 [1], a priority based motion vector predictor (MVP) is used for Skip and Direct modes [2]. The MVP is derived based on a predefined order: the inter-view candidate and the median of three spatial candidates from the neighboring blocks A, B, and C (D is used only when C is unavailable), as shown in Figure 1. Two disparity vectors (DV) are used to locate two inter-view corresponding blocks in order to derive the inter-view candidate. The DVs can be derived from the neighboring blocks or depth values. Details are described as follows. In Figure 1, to locate a corresponding block for list 0 (L0), DVL0 is derived from the L0 DVs of the neighboring blocks A, B, and C. If no L0 DV is available from neighboring blocks, DVL0 is converted from a depth value. Similarly, DVL1 is derived from the list 1 (L1) DVs of the neighboring blocks A, B, and C. If no L1 DV is available from neighboring blocks, DVL1 is converted from a depth value. Finally, L0 motion vector (MV) of the inter-view candidate is set to the L0 MV of the corresponding block located by DVL0, and List1 MV of the inter-view candidate is set to the L1 MV of the corresponding block located by DVL1.



**Figure 1. Inter-view candidate derivation**

# Proposed method

In CE2 [3], the simplified inter-view motion vector prediction method proposed in JCT3V-B0082 [4] is tested. It is proposed to use a single DV to derive both L0 MV and L1 MV for inter-view candidate, as shown in Figure 2. The single DV is derived from the L0 or L1 DVs of neighboring blocks A, B, and C. If no DV is available from neighboring blocks, the single DV is converted from a depth value. Therefore, only one corresponding block is required to derive the inter-view candidate.



**Figure 2. Simplified inter-view candidate derivation**

# Experimental results

The proposed simplification is integrated into ATM-6.0, and the simulations are run under the common test conditions [5]. The results of using a single corresponding block to derive the inter-view candidate are illustrated in Table 1. The experimental results show that this proposed simplification brings no coding efficiency loss while the complexity of the inter-view candidate derivation and memory access bandwidth for inter-view motion data access are reduced.

Table 1. Results of using one single corresponding block to derive the inter-view candidate



# Conclusion

This contribution presented the results of CE2.a experiments related to the simplification of the inter-view candidate derivation proposed in JCT3V-B0082. It is proposed to derive the inter-view candidate from one single corresponding block, while the current ATM-6.0 uses two corresponding blocks. The results reportedly showed that the proposed simplification brings no coding efficiency loss while the complexity and memory access are reduced.

# Patent rights declaration (s)

**MediaTek Inc. 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).**

# References

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