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| *Title:* | **Modification of reference index for depth disparity derivation** | | |
| *Status:* | Input Document | | |
| *Purpose:* | Proposal | | |
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**Abstract**

In the current 3D-HEVC, inter-view motion prediction (IVMP) method is applied to depth as well as texture. A disparity for IVMP in depth coding is converted from a middle value of input bit-depth. Reference view for converting depth value to a disparity and accessing motion information uses a fixed reference with view index equals to 0. However, when the reference is not included in a decoded picture buffer (DPB), IVMP could not be worked. In this contribution, modification of a reference index for depth disparity derivation is proposed. The proposed method is to use a default reference view index instead of a fixed reference view index. The experimental results are no impact under the common test conditions.

1. **Introduction**

In depth coding, a disparity vector is required by the inter-view motion prediction. Instead of using either NBDV or DoNBDV as in texture coding, the disparity vector for depth coding is derived only using the middle value of the depth value range. In HTM and specification, a reference index for the disparity vector is fixed with view index is equal to 0. However, the reference is unavailable in the reference picture lists.

1. **Proposed method**

In this contribution, modification of a reference index for disparity derivation in depth coding is proposed. The proposed method is to use a default reference view index instead of a fixed reference view index with 0. As in texture coding, the default reference view index is derived by first available reference view index in DPB.

1. **Experimental results**

The proposed method is integrated on HTM-12.0 [1]. Table 1 shows the results under the common test condition [2]. The experiments results show that the proposed method is exactly identical compared to anchor.

Table 1. Performance for the proposed method (CTC)



1. **Conclusion**

Disparity derivation method for depth coding is proposed in this contribution. A default reference view index is used for disparity derivation for depth instead of a fixed reference view index which equals to 0. There is no impact of coding efficiency for the synthesized views under CTC conditions.

# Patent rights declaration(s)

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1. **References**

[1] HTM-12.0, https://hevc.hhi.fraunhofer.de/svn/svn\_3DVCSoftware/tags/HTM-12.0.

[2] K. Müller, A. Vetro, “Common test conditions of 3DV core experiments,” Document of Joint Collaborative Team on 3D Video Coding Extension Development, JCT3V-G1100, Jan. 2014.