INTERNATIONAL ORGANISATION FOR STANDARDISATION
ORGANISATION INTERNATIONALE DE NORMALISATION
ISO/IEC JTC 1/SC 29/WG 2
MPEG TECHNICAL REQUIREMENTS

ISO/IEC JTC 1/SC 29/WG 4 m71459

January 2025 – Geneva

Title: **[VCM][CE6] Cross-check of CE6.2**

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Abstract

This document presents the results of crosschecking the CE6.2 experiment.

1. Procedure description

We have downloaded and launched the software of the CE6.2 test from the Gitlab repository provided by the proponent [1]. We have performed the encoding and evaluation using the machines with the following specification:

Processor: Intel Core i7-12700K
RAM: 32 GB
GPU: nVidia RTX 4090.
Operating System: Ubuntu 22.04 (updated)

2. Cross-check results and comments

The detailed cross-check results and comparison with the original CE6.2 results [1] can be found in the attached excel file. All the bitrates match, since the inequalities comes from different precision of the stored numbers.

The vast majority of differences in metrics are in acceptable range. The bigger relative mismatches are incidental, and exceeds one percent only slightly.

The performance results can be summarized as confirmed.

However, there are a couple of issues regarding the code.

Firstly, there are two redundant color-space conversions (YCbCr -> RGB, and RGB->YCbCr) in the video processing pipeline. The idea of the proposal seem to be only to extend areas of the objects which does not require any conversions of the frames.

Secondly, the implementation of the tool is more like a demo, which operates in 'load descriptors' mode only:

- At first original CTC descriptors (generated beforehand to allow machine independency) are loaded
- Then they are updated (results are machine-dependent).
- In the current version of code, neither generating of descriptors nor saving the final ones is supported.

References

[1] Min Hyuk Jeong, Sang-Kyun Kim (Myongji University), HeeKyung Lee, Jin Young Lee, Soon-heung Jung, Hyon-Gon Choo (ETRI), "Applying adaptive margin dilation based on IoU comparison", doc. m71300, January 2025, Geneva.