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Committee Manager: **Koike Mayumi Ms**



Liaison statement to 3GPP SA WG4 on MPEG-I Video-based Point Cloud Compression (V-PCC) [WG 07/00037]

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In accordance with Recommendation 4.1.1 at the 1st WG 07 Meeting, 2020-10-12/16, Online, the SC 29 Secretariat sends this liaison statement to 3GPP SA WG 4. [Requested action: For SC 29's information]

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To 3GPP SA WG 4

SC29/WG7 would like to update you regarding the progress of its ongoing work in MPEG-I Video-based Point Cloud Compression (V-PCC).

The V-PCC standard has attained the Final Draft International Standard (FDIS) status. The V-PCC standard is based on Visual Volumetric Video-based Coding (V3C) framework, which is also expected to be re-used by other MPEG-I volumetric codecs under development. SC29/WG3 is also developing a standard for the carriage of V3C data (ISO/IEC 23090-10) which has achieved Draft International Standard (DIS) status and is expected to achieve FDIS status in January 2021.

The V-PCC standard leverages video compression technologies and the video eco-system in general (hardware acceleration, transmission services and infrastructure), while enabling new kinds of applications. The V-PCC draft standard specifies several profiles that leverage existing AVC and HEVC implementations, which may make them suitable to be implemented on existing and emerging XR computation platforms in 5G. The standard is also extensible to upcoming video specifications such as Versatile Video Coding (VVC) and Essential Video Coding (EVC). The current V-PCC test model encoder implementation shows compression performances in the range of 100:1 to 300:1 using the HEVC specification, while achieving good perceptual quality on mobile phones. Real-time decoding and rendering of V-PCC bitstreams has also been demonstrated on current mobile hardware.

SC29/WG7 hopes that this information is of interest to you and that you may consider using the standard to offer services for enabling use cases related to AR/XR in 5G, including those listed in TR 26.928.

Reference documents:

1. ISO/IEC FDIS 23090-5 “Information technology — Coded Representation of Immersive Media — Part 5: Visual Volumetric Video-based Coding (V3C) and Video-based Point Cloud Compression (V-PCC),” ISO/IEC JTC1/SC29 WG11 (MPEG), N19579, July 2020.
2. ISO/IEC DIS 23090-10 “Information technology — Coded representation of immersive media — Part 10: Carriage of visual volumetric video-based coding data,” ISO/IEC JTC1/SC29 WG11 (MPEG), N19285, April 2020.