P1857.9

Submitter Email: wgao@pku.edu.cn
Type of Project: New IEEE Standard
PAR Request Date: 24-Sep-2015
PAR Approval Date: 05-Dec-2015
PAR Expiration Date: 31-Dec-2019
Status: PAR for a New IEEE Standard

1.1 Project Number: P1857.9
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for Immersive Visual Content Coding

3.1 Working Group: Audio Video Coding Working Group (C/SAB/AVS_1857_WG)
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3.2 Sponsoring Society and Committee: IEEE Computer Society/Standards Activities Board (C/SAB)
Contact Information for Sponsor Chair
Name: p eastman
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4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 12/2016
4.3 Projected Completion Date for Submittal to RevCom: 08/2017

5.1 Approximate number of people expected to be actively involved in the development of this project: 20
5.2 Scope: This standard defines a set of tools for efficient coding of immersive visual content, the corresponding decoding and reconstructing procedure. The immersive visual content includes but not limited to panorama video, free view video, light field, 3D model and other kinds of synthetic visual contents. The coding efficiency will be measured by counting the data rates under target visual quality of immersive visual content.

5.3 Is the completion of this standard dependent upon the completion of another standard: No
5.4 Purpose: This standard provides efficient coding tool sets for compression, decompression, and reconstructing of the immersive visual content data. The target applications and services include but are not limited to virtual reality such as unmanned aerial vehicle based VR, augment reality, panorama video, free-view TV, panoramic stereo video, and other video/audio-enabled services and applications such as immersive video streaming, broadcasting, storage and communication.

5.5 Need for the Project: Today's TV and Internet video provide a same view of content to all users. But a new movement just appears from internet and new media industry, they want to provide an immersive content display to end user, such as supporting zoom in and out, change view position and angle, and so on, controlled by end user. The immersive visual content includes but not limited to panorama video, free view video, light field, 3D model and other kinds of synthetic visual contents. It is no doubt that the data quantity of immersive visual content is much higher than that of traditional 2D/3D video, so it might take more than 10 times bandwidth cost for supporting this kind of applications. However, and there is no specification exist for the this special purpose to compress the high volume immersive visual content. The committee views standardization as essential for providing high efficiency coding and unified format for immersive visual content based applications.

5.6 Stakeholders for the Standard: Stakeholders being benefited includes but not limited to:
- Audio and video products (hardware or software) manufacturers or vendors
- Video and audio service providers, including broadcasting operators, Internet video service providers
- Aural and visual content providers

Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

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7.1 Are there other standards or projects with a similar scope?: Yes
If Yes please explain: ITU-T Q.6/SG16 VCEG (video communication expert group) and ISO/IEC JTC1/SC29 WG11 MPEG (motion picture expert group) have established a series of video coding standards, including H.261, H.262/MPEG-2, H.263, H.264/MPEG-4 AVC, and the latest H.265/HEVC etc. They have achieved great success in traditional 2D or 3D video. However they are not efficient enough to compress the high volume immersive visual content, and are not to reconstruct virtual view requested for immersive sense. The proposed PAR project achieves significant coding efficiency improvement over the preceding coding standards for immersive video content.

and answer the following
Sponsor Organization: ISO/IEC and ITU-T
Project/Standard Number: H.261, H.262/MPEG-2, H.263, H.264/MPEG-4/AVC, H.265/HEVC
Project/Standard Date:
Project/Standard Title: H.261, H.262/MPEG-2, H.263, H.264/MPEG-4/AVC, H.265/HEVC
7.2 Joint Development
Is it the intent to develop this document jointly with another organization?: No

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8.1 Additional Explanatory Notes (Item Number and Explanation): 7.1: H.261, Video codec for audiovisual services at p x 64 kbit/s
H.262/MPEG-2, Information technology - Generic coding of moving pictures and associated audio information: Video
H.263, Video coding for low bit rate communication
H.264/MPEG-4 AVC, Advanced video coding for generic audiovisual services
H.265/HEVC, High efficiency video coding