

P3333.3

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Type of Project: New IEEE Standard

PAR Request Date: 16-Aug-2016

PAR Approval Date: 07-Dec-2016

PAR Expiration Date: 31-Dec-2020

Status: PAR for a New IEEE Standard

Project Record: P3333.3

1.1 Project Number: P3333.3

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

2.1 Title: Head Mounted Display (HMD) Based 3D Content Motion Sickness Reducing Technology

3.1 Working Group: HMD based 3D Content Motion Sickness Reducing Technology (C/SAB/P3333.3)

Contact Information for Working Group Chair

Name: Dong Il Seo

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Contact Information for Working Group Vice-Chair

None

3.2 Sponsoring Society and Committee: IEEE Computer Society/Standards Activities Board (C/SAB)

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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

Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 10/2018

5.1 Approximate number of people expected to be actively involved in the development of this project: 40

5.2 Scope: This standard is setting a technical guidance to resolve Virtual Reality (VR) sickness caused by the visual mechanism set by the HMD based 3D content motion sickness through the study of:

visual response to the focal distortion

visual response to the lens materials

visual response to the lens refraction ratio

visual response to the frame rate

5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: This document will not include a purpose clause.

5.5 Need for the Project: : HMD based 3D content is being used in various fields such as games, medical, education and art through Mixed Reality [Virtual Reality (VR) and Augmented Reality (AR) included] technology. However, a motion sickness, known as a 3D sickness and considered as one of the most critical problems, has not been resolved even though it is highly utilized.

Major companies from various regions such as the United States, Europe, Japan, China and Taiwan are releasing many devices and commercializing them but the industrial expansion will reach its limit if this 3D sickness problem is not resolved.

To overcome this limit, we are suggesting a minimum guideline as a standard by studying some of the 3D sickness originating factors such as focal distortion, lens materials, lens refraction and frame rates per second.

Moreover, our attempt to resolve this 3D sickness problem will facilitate the development of HMD based 3D content and will influence the 3D

content developers, service providers, HMD manufacturers, HMD based content service providers and 3D display panel manufacturers very positively in developing a healthy ecosystem.

Therefore, a standard to reduce the motion sickness caused by HMD based 3D content needs to be established in order to protect the user's health and safety and develop the ecosystem.

5.6 Stakeholders for the Standard: 3D Content, 3D Games, 3D Display Content, 3D Educational Content, 3D Movie Producers, 3D Monitors, 3D Display Panel and 3D Device Manufacturers

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

7.1 Are there other standards or projects with a similar scope?: No

7.2 Joint Development

Is it the intent to develop this document jointly with another organization?: No

8.1 Additional Explanatory Notes: