|  |  |
| --- | --- |
| Project | **Cybersickness Reduction Working Group**< <https://sagroups.ieee.org/3079/> **>** |
| Title | **Proposal of New PAR for ‘Motion to Photon (MTP) Latency and its Evaluation Method in Virtual Environments ’** |
| DCN | **3079- ??** |
| Date Submitted | **Oct 05, 2021** |
| Source(s) | **Hyun Kyoon Lim {**  HYPERLINK “mailto:hlim@kriss.re.kr”**} (KRISS)****Moonyoung Kwon**  tajinet@etri.re.kr **(KRISS)** |
| Re: |  |
| Abstract | This document is a description of a new PAR to propose a framework for evaluating the quality of digital human. |
| Purpose | This document is submitted to propose a new PAR. |
| Notice | This document is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein. |
| Release | The contributor grants a free, irrevocable license to the IEEE to incorporate material contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE’s name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE’s sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that IEEE 3079 may make this contribution public. |
| Patent Policy | The contributor is familiar with IEEE patent policy, as stated in [Section 6 of the IEEE-SA Standards Board bylaws](http://standards.ieee.org/guides/opman/sect6.html#6.3) <[http://standards.ieee.org/guides/bylaws/sect6-7.html#6](http://127.0.0.1:4664/cache?event_id=757737&schema_id=1&s=5X0vID10lu_E6yrIkWkNd4Wz2H8&q=hancock)> and in *Understanding Patent Issues During IEEE Standards Development* <http://standards.ieee.org/board/pat/faq.pdf> |

**–**

**PAR for a New IEEE Standard**

# Section 1

* 1. **Assigned Project Number**:

P3079.1

* 1. **Type of Document: *Standard, Recommended Practice, or Guide***

Standard

* 1. **Life Cycle: *Full Use or Trial Use***

Full Use.

# Section 2

**2.1 Project Title:**

# Framework for Evaluating the Quality of Digital Human

# Section 3

**3.1 Working Group: Human Factor for Immersive Contents Working Group (C/SAB/3079\_WG)**

**3.1.1 Contact Information for Working Group Chair:**

**Name:** Hyun Kyoon Lim

**Email Address:** hlim@kriss.re.kr

**3.1.2 Contact Information for Working Group Vice Chair:**

**Name:** Sangcheol Yoon

**Email Address:** yoonsangcheol@gmail.com

**3.2 Society and Committee:** C/SAB

**3.2.1 Contact Information for Standards Committee Chair:**

**Name:** Robby Robson

**Email Address:** robby@computer.org

**3.2.2 Contact Information for Standards Committee Vice Chair:**

None

**3.2.3 Contact Information for Standards Representative:**

None

**3.3 Joint Sponsor:** (chosen from drop down menu)

If you are not adding a joint sponsor to this project, you may leave this field blank.

# Section 4

**4.1 Sponsor Balloting Information: *Individual or Entity***

Individual

**4.2 Expected Date of Submission of Draft to the IEEE-SA for Initial Standards Committee Ballot:**

**Month: Oct. Year: 2022**

**4.3 Projected Completion Date for Submittal to RevCom**

**Month: Aug. Year: 2023**

# Section 5

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

20

**5.2 Scope of the proposed standard:**

This standard is intended to provide a standard framework for evaluating the motion to photon (MTP) latency of an instrument for the virtual reality (VR) and the effect to human cybersickness.

This is related to the measurement methods including VR instruments related with MTP latency and human factors exposed to MTP latency.

This framework includes the following;

* Definitions on MTP latency of a VR instruments, i.e., head mounted display (HMD) system.
* Definitions on cyber sickness caused by MTP latency of a VR instruments
* A set of machine that can measure innate MTP latency of a VR instrument
* A set of cognitive-psychological factors that defines how users feel the cyber sickness caused by MTP latency.
* A procedure that allows the quality evaluation of MTP latency of an instrument or cyber sickness.

**5.3 Is the completion of this standard contingent upon the completion of another standard?** No

**5.4 Will this document contain a Purpose clause?**

This document will not include a purpose clause.

**5.5 Need for the project:**

MTP latency is an inevitable delay that could be made by the time gap between user's head movement and the corresponding display reflecting the head movement. We need to know how great MTP latency could cause cybersickness to users. Therefore we need to establish a method that could measure the innate MTP latency of a VR instruments. In addition, we need to know how great MTP latency could cause how serious cybersickness to users based on their different personal conditions such as gender, age, previous experience, etc.

**5.6 Stakeholders for the standard:**

Content Providers, Manufacturers, Local Governments, Constructors

# Section 6

**6.1 Intellectual Property:**

**A. Is the Sponsor aware of any copyright permissions needed for this project? *No***

**B. Is the Sponsor aware of possible registration activity related to this project? *No***

# Section 7

**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***

**7.3 International Standards Activities**

**A. Adoptions - Is there potential for this standard to be adopted by another organization? *No***

**B. Harmonization - Are you aware of another organization that may be interested in portions of this document in their standardization development efforts?**  ***No***

**7.4 Does the sponsor foresee a longer term need for testing and/or certification services to assure conformity to the standard? *Yes***

**Additionally, is it anticipated that testing methodologies will be specified in the standard to assure consistency in evaluating conformance to the criteria specified in the standard? *No***

# Section 8

**8.1 Additional Explanatory Notes:**

**8.2 IEEE Code of Ethics**

**I acknowledge that I have read and I understand the** [**IEEE Code of Ethics**](http://www.ieee.org/portal/pages/iportals/aboutus/ethics/code.html)

**I agree to conduct myself in a manner that adheres to the IEEE Code of Ethics when engaged in official IEEE business.**