|  |  |
| --- | --- |
| Project | **Interfacing Cyber and Physical World Working Group**  <<https://sagroups.ieee.org/2888/> **>** |
| Title | **Propose to new PAR of the ‘****Large Space Virtual Reality Disaster Response Training System’** |
| DCN | **2888-20-0020-00-0000** |
| Date Submitted | **July 20, 2020** |
| Source(s) | Jeonghwoan Choi [jordhanchoi@skonec](mailto:ceo@joyfun.kr).com (Skonec Entertainment)  Dong Soo Choi, [soochoi@dau.ac.kr](mailto:soochoi@dau.ac.kr) (Dong-A University)  Sangkwon Jeong, [ceo@joyfun.kr](mailto:ceo@joyfun.kr) (Joyfun)  Sang-Kyun Kim, [goldmunt@gmail.com](mailto:goldmunt@gmail.com) (Myongji University)  Min Hyuk Jeong, [jmh8900@gmail.com](mailto:jmh8900@gmail.com) (Myongji University)  Kyoungro Yoon, [yoonk@konkuk.ac.kr](mailto:yoonk@konkuk.ac.kr) (Konkuk University)  HyeonWoo Nam, [hwnam@dongduk.ac.kr](mailto:hwnam@dongduk.ac.kr) (Dongduk Women’s University) |
| Re: |  |
| Abstract | This document is written in the form of the context required for the proposal of a new PAR. |
| Purpose | This document was 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 2888 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**:

P2888.2

* 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:**

1. Large Space Virtual Reality Disaster Response Training System
2. Reference Architecture for Large Space Virtual Reality Disaster Response Training System
3. Architecture for Virtual Reality Training System in Large Space
4. Reference Architecture for Virtual Reality Disaster Response Training System in Large Space

# Section 3

**3.1 Working Group: Interfacing cyber and physical world**

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

[A listing of Sponsor P&Ps and Sponsor Scopes is available at <https://development.standards.ieee.org/pub/view-sponsor-pnps>]

**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 Sponsor Ballot**

**Month: Dec. Year: 2022**

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

**Month: Oct. Year: 2023**

# Section 5

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

30

**5.2 Scope of the proposed standard:**

This standard is intended to provide standardized guidance to researchers and industry workers who wish to implement a disaster training system that several people can participate in using virtual reality in large physical space. This is a technology that can overcome the limitations of the existing virtual reality-based training system. The system detects information about the location, speed, and acceleration of physical objects, such as walk-through and the convergence of objects in real life and objects in virtual reality for the disaster response training that are difficult to be reenacted in real world. And it transmits this information to virtual reality system in Large physical space to develop the disaster training system. The scope of this standard may include relevant technologies for setting up systems that effectively provide users with disaster response training.

이 표준은 대공간에서 표현되는 가상현실을 통하여 실행되는 재난 훈련 시스템을 대상으로 하며, 다음과 같은 내용을 포함한다.

* 소프트웨어 아키텍처

**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? No**

**5.5 Need for the project:**

So far, the virtual reality-based training system had limitations in transmitting real experiences to virtual reality perfectly. Recently, the national, economic and social losses have been caused by inadequate disaster response. A "large-space disaster response virtual training system" is needed to reenact disaster situations that are difficult to be implemented in the real world. The digital twin detects the posture by motion tracking of physical objects (users and objects) using physical quantities such as the user's position, speed, and acceleration. It is also important to experience the virtual effects (visual and auditory effects) and physical effects (tactile and olfactory effects) directly. As there is no standard for the data format or interface of these sensors, so the manufacturers rely on the specifications provided by each individual service provider.

By providing standard for these data formats and interface (location, motion, interaction) of sensors, it can lead the development of the industry in the field of disaster response training systems using virtual reality in large spaces and contribute to public safety, as well.

**5.6 Stakeholders for the standard:**

Manufacturers, Local Governments, Constructors, Real-Estate Developers, etc.

# 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.**