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| Project | **Interfacing Cyber and Physical World Working Group**  <<https://sagroups.ieee.org/2888/> **>** |
| Title | **Proposal of new PAR for the ‘Specification of Digital Synchronization Framework between Cyber and Physical World’** |
| DCN | **2888-20-0033-01-0000** |
| Date Submitted | **July 20, 2020** |
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| 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. |
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**PAR for a New IEEE Standard**

# Section 1

* 1. **Assigned Project Number**:

P2888.3

* 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:**

Specification of Digital Synchronization Framework between Cyber and Physical World

# 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 CPS or DTS. This standard defines the vocabulary, requirements, metrics, data formats and APIs for setting up parameters for and communicating with digital objects to provide synchronizing & interacting with physical objects.

**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:**

We have been developing specifications for sensor and actuator interfaces to provide standardized way of communicating between cyber and physical world objects. However, for the system developers to actually implement CPS(Cyber-Physical System) or DTS(Digital Twin System), it is necessary to provide a framework overlooking interactions between general objects in cyber and physical world.

By providing standard for this framework

* Capabilities to interact between physical things and digital things (cyber things)
* Capabilities to easily integrate with backend infrastructure / integrate with other external systems
* Capabilities to access to things by authorized parties
* Capabilities to describe physical devices, virtual devices, or anything that can be modeled

**5.6 Stakeholders for the standard:**

Manufacturers, Service Provider, Local Government, Constructor 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.**