

P802.15.13

Submitter Email: bheile@ieee.org

Type of Project: New IEEE Standard

PAR Request Date: 15-Mar-2017

PAR Approval Date:

PAR Expiration Date:

Status: Unapproved PAR, PAR for a New IEEE Standard

1.1 Project Number: P802.15.13

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

2.1 Title: Multi-Gigabit per Second Optical Wireless Communications (OWC) with Ranges up to 200 meters

3.1 Working Group: Wireless Personal Area Network (WPAN) Working Group (C/LM/WG802.15)

Contact Information for Working Group Chair

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3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)

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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: 11/2018

4.3 Projected Completion Date for Submittal to RevCom

Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 05/2019

5.1 Approximate number of people expected to be actively involved in the development of this project: 15

5.2 Scope: This standard defines a Physical (PHY) and Media Access Control (MAC) layer using light wavelengths from 10,000 nm to 190 nm in optically transparent media for optical wireless communications. The standard is capable of delivering data rates up to 10 Gbit/s at distances in the range of 200 meters unrestricted line of sight. It is designed for point to point and point to multi point communications in both non-coordinated and coordinated topologies. For coordinated topologies with more than one peer coordinator there will be a master coordinator. The standard includes adaptation to varying channel conditions and maintaining connectivity while moving within the range of a single coordinator or moving between coordinators.

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

5.4 Purpose: The purpose of this standard is to define OWC specifications in optically transparent media enabling high data rate transfer among end points at rates up to 10 Gbit/s and ranges up to 200 meters unrestricted line of site and which are capable of meeting the needs of industrial and similar classes of applications requiring, secure, high performance, high data rate communications which are non-interfering with existing RF systems

5.5 Need for the Project: Given the growing expectation of ubiquitous wireless connectivity in industrial environments, the need for unlicensed, high bandwidth, easy-to-use wireless communications technology, immune to radio frequency (RF) interference and which does not overload existing RF spectrum or necessarily require additional hardware, has never been greater. This standard specifically addresses these needs. In particular, optical wireless based solutions to this problem address a significant opportunity, extending to billions of existing

industrial devices, to provide secure, non RF based communications between industrial devices and/or between industrial devices and fixed infrastructure on a one to one, or one to many or many to one basis at acceptable data rates. Potential applications include control of mobile robots in manufacturing cells or on assembly lines, automated guided vehicle systems, small cell backhaul, security monitoring in petrochemical plants, secure communications in nuclear facilities and hospitals, etc.

5.6 Stakeholders for the Standard: Industrial devices manufactures, system integrators, aircraft and transportation manufactures, medical equipment manufacturers, lighting manufacturers, silicon providers, networking equipment manufacturers, and academic researchers

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?: Yes

If yes please explain: This standard is expected to specify the use of OUI, CID EUI-48

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: line 5.2: The standard may include MIMO, and mechanisms enabling heterogeneous operation, ie operation with both OWC and existing RF wireless data communications standards in the same network.

Line 7.1 Technically there are no standards or projects with a similar scope, but ITU-T defines a new recommendation for visible light communications (i.e. no IR and UV) and is currently in a process to align its objectives according to work done previously in IEEE 802.15.7. There is also an Interest Group activity in 802.11 looking at where OWC might fit as part of a WLAN