IEEE P802.11
Wireless LANs

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| A PAR Proposal for Light Communications |
| Date: 2017-10-10 |
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Abstract

This submission includes a PAR proposal for the IEEE 802.11 Light Communications Study Group.

# PAR

**P802.11**

**Submitter Email:**
**Type of Project:** Amendment to IEEE Standard 802.11
**PAR Request Date:**
**PAR Approval Date:
PAR Expiration Date:
Status:** Unapproved PAR, PAR for an amendment to an existing IEEE Standard

**1.1 Project Number:** P802.11TBD
**1.2 Type of Document:** Standard
**1.3 Life Cycle:** Full Use

**2.1 Title:** Standard for Information technology--Telecommunications and information exchange between systems Local and metropolitan area networks--Specific requirements Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications-- Amendment: Light Communications

**3.1 Working Group:** Wireless LAN Working Group (C/LM/WG802.11)
**Contact Information for Working Group ChairName:** Adrian Stephens
**Email Address:** adrian.p.stephens@ieee.org
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**Contact Information for Working Group Vice-Chair
Name:** Jon Rosdahl
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**3.2 Sponsoring Society and Committee:** IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
**Contact Information for Sponsor Chair**

**Name:** Paul Nikolich
**Email Address:** p.nikolich@ieee.org
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**Contact Information for Standards Representative**

**Name:** James Gilb
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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:**November 2020
**4.3 Projected Completion Date for Submittal to RevCom:**July 2021

**5.1 Approximate number of people expected to be actively involved in the development of this project:** 50.

**5.2.a. Scope of the complete standard:**The scope of this standard is to define one medium access control (MAC) and several physical layer (PHY) specifications for wireless connectivity for fixed, portable, and moving stations (STAs) within a local area.

**5.2.b. Scope of the project:**This amendment defines a physical (PHY) layer specification and modifications to the medium access control (MAC) layer specification that enables operation of light communications (LC).

**TBD**

The MAC and PHY specified in this amendment:

• Enable operations in [TBD] nm to [TBD] nm band

• Enables a maximum throughput of at least [TBD] Gbps, as measured at the MAC data service access point (SAP)

• Enables fast session transfer between LC PHY(s) and radio based PHYs

• Maintains the 802.11 user experience

**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 provide wireless connectivity for fixed, portable, and moving stations within a local area. The standard uses large fractions of the existing PHY and MAC layer specifications of 802.11 and provides i) an efficient implementation of light communications and ii) appropriate technology for new, large-volume applications e.g. in lighting infrastructures. This standard also offers regulatory bodies a means of standardizing access to light spectrum for the purpose of local area communication.

**5.5 Need for the Project:**

The project aims at enabling new applications e.g. in combination with lighting. It shall meet mass market requirements through significant share of technology with 802.11. The project will design PHY and MAC layer so that nearly optimal performance is achieved using simple algorithms which already exist or can be easily adapted to LC.

**TBD**

**5.6 Stakeholders for the Standard:** Manufacturers and users of semiconductors, personal computers, enterprise networking devices, consumer electronic devices, home networking equipment, producers of industrial sensors, mobile devices, and cellular operators.

**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?:**

**Yes, there are two projects as follows.**

**Sponsor Organization: IEEE 802**

**Project Number: IEEE 802.15.13**

**Project Date: 2017-03 (projected)**

**Project Title: Part 15.13: Standard for Multi-Gigabit per Second Optical Wireless Communications (OWC) with Ranges up to 200 meters**

**Sponsor Organization: ITU-T SG15**

**Project Number: ITU-T G.vlc**

**Project Date: 2015-06 (projected)**

**Project Title: High speed indoor visible light communication transceiver - System architecture, physical layer and data link layer specification**

**7.2 Joint Development**

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

**8.1 Additional Explanatory Notes (Item Number and Explanation):**