IEEE P802.11  
Wireless LANs

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| 802.11 NG60 SG Proposed PAR | | | | |
| Date: 2014-09-14 | | | | |
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Abstract

This submission includes the IEEE 802.11 Next Generation 60 GHz (NG60) Study Group PAR.

# PAR

**P802.11**

**Submitter Email: Carlos.Cordeiro@intel.com**  
**Type of Project:** Amendment to IEEE Standard 802.11  
**PAR Request Date:** March 2015  
**PAR Approval Date:** March 2015 **PAR Expiration Date:** March 2019 **Status:** Unapproved PAR, PAR for an amendment to an existing IEEE Standard

**1.1 Project Number:** P802.11a?  
**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: Enhancements for Ultra High Throughput in the 60 GHz Band

**3.1 Working Group:** Wireless LAN Working Group (C/LM/WG802.11)   
**Contact Information for Working Group Chair**

**Name:** Adrian Stephens  
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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  
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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:**2018-July  
**4.3 Projected Completion Date for Submittal to RevCom:**2019-March

**5.1 Approximate number of people expected to be actively involved in the development of this project:** 200

**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 standardized modifications to both the IEEE 802.11 physical layers (PHY) and the IEEE 802.11 medium access control layer (MAC) that enable at least one mode of operation capable of supporting at least TBD gigabits per second average throughput per station (measured at the MAC data service access point), while maintaining or improving the power efficiency per station.

This amendment defines operations in the 60 GHz frequency band, and shall enable backward compatibility and coexistence with legacy IEEE 802.11 (ad) directional multi-gigabit stations operating in the same band.

This amendment improves the spatial reuse of multiple simultaneous nearby transmissions to increase the aggregated system throughput.  
 **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. This standard also offers regulatory bodies a means of standardizing access to one or more frequency bands for the purpose of local area communication.

**5.5 Need for the Project:**

Devices based on the IEEE 802.11 (ad) standard for the 60 GHz frequency band are being developed and deployed in conjunction with IEEE 802.11 devices operating in frequencies below 6 GHz to offer improved user experience and expand the addressable market for wireless LAN. Despite the augumented capacity provided by the addition of IEEE 802.11 (ad) based devices, wireless LAN usage continues to grow and find new applications demanding additional capacity. An an example, the speed of wired interfaces such as Ethernet, HDMI, USB and DisplayPort can far exceed 10 gigabits per second. This is in addition to other usages such as cellular offload, wireless display and outdoor wireless backhaul. Therefore, there is a need to substantially increase the achievable throughput of IEEE 802.11 devices and the overall capacity of IEEE 802.11 deployments. The large swath of unlicensed spectrum available in the 60 GHz frequency band offers a significant opportunity to meet the need.

**5.6 Stakeholders for the Standard:**Manufacturers and users of semiconductors, personal computers, enterprise networking devices, consumer electronic devices, home networking equipment, 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 three standards and one project as follows.

Sponsor Organization: IEEE 802  
Standard Number: IEEE 802.15.3c  
Standard Date: 2009-09-30   
Standard Title: Part 15.3: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for High Rate Wireless Personal Area Networks (WPANs): Amendment 2: Millimeter-wave based Alternative Physical Layer Extension

Sponsor Organization: ECMA  
Standard Number: TC48 60 GHz  
Standard Date: 2008-12-31   
Standard Title: PHY and MAC layers for 60 GHz wireless networks

Sponsor Organization: IEEE 802  
Project Number: IEEE P802.11aj  
Project Date: 2016-07-30 (projected)  
Project Title: Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications – Amendment: Enhancements for Very High Throughput to support one or more of the Chinese 40-50 GHz and 59-64 GHz frequency bands

Sponsor Organization: IEEE 802

Project Number: IEEE P802.15.3d

Project Date: 2016-05 (projected)

Project Title: Part 15.3: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for High Rate Wireless Personal Area Networks (WPAN): Amendment for a 100Gbps wireless switched point-to-point physical layer

**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):**

**5.2.b**

* The amendment will be evaluated with a set of typical deployment scenarios representative of the main expected usage models: residential, enterprise, indoor, outdoor hotspot and outdoor backhaul.
* Power efficiency is intended to measure consumption (Joules/bit) of devices which can reasonably be assumed to be powered by batteries and takes into account average power consumption for a given scenario.

**References:**