P802.11bd

This PAR is valid until 31-Dec-2022.

PAR Extension Request Date:
PAR Extension Approval Date:
Number of Previous Extensions Requested: 0

1. Number of years that the extension is being requested: 1
2. Why an Extension is Required (include actions to complete): A PAR extension is required to complete SA balloting of the P802.11bd draft.
Working Group balloting is completed, and SA Balloting is underway. Submission to RevCom is anticipated in December 2022. This PAR extension is requested to accommodate any delays that might push completion into next year.

3.2: The WG ballot pool had 340 members. The P802.11bd SA Ballot Resolution Committee has approximately 20 active members.

3.3/3.4: Due to Covid, the WG has been meeting electronically only, and will be starting to meet in in-person/electronic in 2022 (expect 3 in-person opportunities in 2022). The WG meets 6 times per year with numerous additional teleconferences to progress work.
3.1. What date did you begin writing the first draft: 12 Jan 2020
3.2. How many people are actively working on the project:20
3.3. How many times a year does the working group meet?
In person: 3
Via teleconference: 6
3.4. How many times a year is a draft circulated to the working group: 3
3.5. What percentage of the Draft is stable: 99%
3.6. How many significant work revisions has the Draft been through: 12
4. When will/did initial Standards Association Balloting begin: Apr 2022

When do you expect to submit the proposed standard to RevCom: Dec 2022
Has this document already been adopted by another source? (if so please identify) No

For an extension request, the information on the original PAR below is not open to modification.

Type of Project: Amendment to IEEE Standard 802.11-2020
Project Request Type: Initiation / Amendment
PAR Request Date: 27 Sep 2018
PAR Approval Date: 05 Dec 2018
PAR Expiration Date: 31 Dec 2022
PAR Status: Active
Root Project: 802.11-2020

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

2.1 Project 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 Next Generation V2X

3.1 Working Group: Wireless LAN Working Group(C/LM/802.11 WG)
3.1.1 Contact Information for Working Group Chair:
Name: Dorothy Stanley
Email Address: dstanley1389@gmail.com
3.1.2 Contact Information for Working Group Vice Chair:
Name: Jon Rosdahl
Email Address: jrosdahl@ieee.org
3.2 Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee(C/LM)

3.2.1 Contact Information for Standards Committee Chair:
Name: Paul Nikolich
Email Address: p.nikolich@ieee.org
3.2.2 Contact Information for Standards Committee Vice Chair:
Name: James Gilb
Email Address: gilb@ieee.org
3.2.3 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 Standards Committee Ballot: Sep 2020
4.3 Projected Completion Date for Submittal to RevCom: Oct 2021

5.1 Approximate number of people expected to be actively involved in the development of this project: 100
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 modifications to both the IEEE 802.11 Medium Access Control layer (MAC) and Physical Layers (PHY) for vehicle to everything (V2X) communications for 5.9 GHz band as defined in clauses E.2.3 and E.2.4 of IEEE Std 802.11(TM)-2016; and, optionally, in the 60 GHz frequency band (57 GHz to 71 GHz) as defined in clause E.1 of IEEE Std 802.11(TM)-2016.

This amendment defines at least one mode that achieves at least 2 times higher throughput (measured at the MAC data service access point) than as in IEEE Std 802.11(TM)-2016 operating at maximum mandatory data rate as defined in the 5.9 GHz band (12 Mb/s in a 10 MHz channel), in high mobility channel environments at vehicle speeds up to 250 km/h (closing speeds up to 500 km/h); this amendment also defines at least one mode that achieves at least 3dB lower sensitivity level (longer range), than that of the lowest data rate defined in IEEE Std 802.11(TM)-2016 operating in 5.9 GHz band (3 Mb/s in a 10 MHz channel); and this amendment defines procedures for at least one form of positioning in conjunction with V2X communications.

This amendment shall provide interoperability, coexistence, backward compatibility, and fairness with deployed OCB (Outside the Context of a BSS) devices.

5.3 Is the completion of this standard contingent 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: Current IEEE 802.11 wireless access in vehicular environments (WAVE) technology for V2X applications is based on IEEE Std 802.11(TM)-2016 operating in 5.9 GHz band, which was originally standardized as IEEE Std 802.11p(TM)-2010, and which, in turn, derived from the OFDM PHY as defined in clause 17 of IEEE Std 802.11(TM)-2016 (a.k.a. IEEE Std 802.11a(TM) -1999). WAVE technology has been available for almost a decade, and has been extensively tested and is a proven, mature technology.
During the past decade, IEEE 802.11 technology has improved, from IEEE Std 80211a(TM)-2009, to IEEE Std 802.11n(TM)-2009, IEEE Std 802.11ac(TM)-2013 and the ongoing IEEE P802.11ax(TM) amendment, with supported throughput increasing from 54 Mbps to close to 10 Gbps, as well as higher reliability and improved range. To address future needs for V2X communication technology and provide 802.11-based future-proof technology for V2X applications, the definition of new V2X mechanisms based on new and existing, proven IEEE 802.11 WLAN PHY/MAC technologies, are needed.
5.6 Stakeholders for the Standard: Semiconductor manufacturers and users of semiconductors, vehicle vendors, vehicle component providers, consumer electronic and mobile devices vendors, and road side infrastructure manufacturers.

6.1 Intellectual Property
6.1.1 Is the Standards Committee aware of any copyright permissions needed for this project? No
6.1.2 Is the Standards Committee aware of possible registration activity related to this project? No

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7.1 Are there other standards or projects with a similar scope? No
7.2 Is it the intent to develop this document jointly with another organization? No

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8.1 Additional Explanatory Notes: IEEE Std 802.11(TM)-2016 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
IEEE Std 802.11a(TM)-1999 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: High Speed Physical Layer in the 5 GHz band
IEEE Std 802.11n(TM)-2009 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 5: Enhancements for Higher Throughput
IEEE Std 802.11p(TM)-2010 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 6: Wireless Access in Vehicular Environments
IEEE Std 802.11ac(TM)-2013 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 4: Enhancements for Very High Throughput for Operation in Bands below 6 GHz
IEEE P802.11ax 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 High Efficiency WLAN