IEEE P802.11  
Wireless LANs

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| Project Authorization Request Proposal  for 802.11 UHR SG | | | | |
| Date: 2022-10-11 | | | | |
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Abstract

Project Authorization Request proposal for the consideration of 802.11 UHR SG.

# PAR

**P802.11**

**Submitter Email:** jrosdahl@ieee.org  
**Type of Project:** Amendment to IEEE Standard 802.11  
**PAR Request Date:** **Mar 2023**  
**PAR Approval Date: May 2023  
PAR Expiration Date: May 2027  
Status:** Unapproved PAR, PAR for an amendment to an existing IEEE Standard

**1.1 Project Number:** TBD  
**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 Reliability (UHR)

**3.1 Working Group:** Wireless LAN Working Group (C/LM/WG802.11)

**Contact Information for Working Group Chair**

**Name: Dorothy Stanley**

**Email Address:** dstanley1389@gmail.com

**Contact Information for Working Group Vice-Chair**

**Name:** Jon Rosdahl  
**Email Address:** jrosdahl@ieee.org

**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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**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:**May 2026 **4.3 Projected Completion Date for Submittal to RevCom:  
Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.:** Mar 2027

**5.1 Approximate number of people expected to be actively involved in the development of this project:** 250

**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 Std 802.11 physical layers (PHY) and the Medium Access Control Layer (MAC) that enable at least one mode of operation capable of supporting a maximum throughput of at least 100 Gbps, as measured at the MAC data service access point (SAP), with carrier frequency operation between 1 and 7.250 GHz and 42.3 GHz to 48.4 GHz and 57 GHz to 71 GHz bands. The amendment ensures backward compatibility and coexistence with legacy IEEE Std 802.11 compliant devices operating in the 2.4 GHz, 5 GHz, and 6 GHz bands and ensures coexistence with 802.11 legacy devices operating in the 42.3 GHz to 48.4 GHz and 57 GHz to 71 GHz bands.

This amendment also defines at least one mode of operation capable of improved reliability of WLAN connectivity compared to 802.11be amendment.

**5.3 Is the completion of this standard dependent upon the completion of another standard:** Yes, IEEE P802.11be

**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:**

The use cases for 802.11 based networks have been constantly evolving, supported by new applications from the industry and demands from the customers. AR/VR/XR applications, P2P fast data transfer, IOT/robotics, remote work/education, wireless communication at extremely dense environments will be among main use cases.

The performance of those use cases does not only depend on throughput but also various aspects such as latency, reliability, and power consumption.

This amendment aims to build on the current and emerging WLAN technologies by providing further improvement of aggregate throughput and reliability to ensure competitiveness of IEEE Std 802.11 in coming years.

**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?:** No  
**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):**

The focus of this amendment is on WLAN indoor and outdoor operation with stationary and pedestrian speeds in the 2.4, 5, 6, 45 and 60 GHz frequency bands.

The main candidate features that have been discussed are:

Multi-Access Point (AP) Coordination (e.g. coordinated and joint transmission)

Low latency operation

Higher than 320 MHz bandwidth in the 45 and 60 GHz bands

16 spatial streams and Multiple Input Multiple Output (MIMO) protocols enhancements

**References:**