IEEE P802.11
Wireless LANs

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| 802.11 NGV Proposed PAR |
| Date: 2018-05-08 |
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Abstract

This submission includes the IEEE 802.11 Next Generation V2X Study Group Project Authorization Request.

# PAR

**P802.11**

**Submitter Email: sun.bo1@zte.com.cn**
**Type of Project:** Amendment to IEEE Standard 802.11
**PAR Request Date:** TBD
**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: Enhancements for Next Generation V2X

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

**Name: Dorothy Stanley**
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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
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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:**September, 2020
**4.3 Projected Completion Date for Submittal to RevCom:**September, 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 physical layers (PHY) and the IEEE 802.11 Medium Access Control layer (MAC) that enable more reliable V2X communication compared with IEEE Std 802.11p™-2010, with at least one mode that achieves TBD times higher throughput (measured at the MAC data service access point) than in IEEE Std 802.11p™-2010 in high mobility channel environments operating at speeds up to a minimum of TBD km/h; and with at least one mode that achieves longer range than with IEEE Std 802.11p™-2010.

This amendment defines operations in the same frequency bands as the IEEE Std 802.11p™-2010 amendment, specifically 5.850-5.925 GHz band within North America.

This amendment defines operations that enhance the average throughput per station in high density scenarios such as urban congested roads, from IEEE Std 802.11p™-2010.

The amendment shall enable backward compatibility and coexistence with legacy IEEE Std 802.11p™-2010 devices operating in the same band.
 **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:**

Current DSRC V2X technology is based on IEEE Std 802.11p™-2010 which was derived from IEEE Std 802.11a™-1999. The IEEE Std 802.11p™-2010 standard has been available for almost a decade, has been extensively tested and is a proven, mature technology.

During the past decade, IEEE 802.11 technology has improved, from IEEE Std 80211a™-1999, IEEE Std 802.11n™-2009, IEEE 802.11ac™-2013 and the ongoing IEEE P802.11ax project, with supported throughput increasing from 54 Mbps to over 10 Gbps. To address future needs for V2X communication technology and provide 802.11-based future-proof technology for V2X applications, the definition of new mechamisms for IEEE 802.11 V2X applications, based on new and existing, proven WLAN PHY/MAC technologies is needed.

 **5.6 Stakeholders for the Standard:**Manufacturers and users of semiconductors, vehicle vendors and their component providers, consumer electronic devices, 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?:** Yes

**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)**

IEEE Std 802.11a™-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 Amendment 1: High-speed Physical Layer in the 5 GHz Band

IEEE Std 802.11n™-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™-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 4: Wireless Access in Vehicular Environments

IEEE Std 802.11ac™-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™ Draft 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: Enhancements for High Efficiency WLAN

**References:**