**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | **SG15 PAR - Working Draft** |
| Date Submitted | 17 May 2021 |
| Source | [Phil Beecher, Wi-SUN Alliance, UK] | E-mail: [pbeecher@wi-sun.org] |
| Abstract | Draft PAR for NS-NB project. |
| Purpose | Prepare PAR for submission |
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**P802.15.15**

**Submitter Email:**

**Type of Project:** New IEEE Standard **Project Request Type:** Initiation / New **PAR Request Date:**

**PAR Approval Date:**

**PAR Expiration Date:**

**PAR Status:** Draft

**1.1 Project Number:** P802.15.15

**1.2 Type of Document:** Standard

**1.3 Life Cycle:** Full Use

**2.1 Project Title:** Standard for Ad-Hoc Low-Rate Wireless Networks

**3.1 Working Group:** Wireless Specialty Networks (WSN) Working Group(C/LM/802.15 WG)

**3.1.1 Contact Information for Working Group Chair:**

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**3.2 Society and Committee:** IEEE Computer Society/LAN/MAN Standards Committee(C/LM) **3.2.1 Contact Information for Standards Committee Chair:**

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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 2022

**4.3 Projected Completion Date for Submittal to RevCom:** May 2023

**5.1 Approximate number of people expected to be actively involved in the development of this project:** 30

**5.2 Scope of proposed standard:** This standard specifies the physical layer (PHY) and data link layer for adhoc low data rate wireless connectivity with fixed, portable, and moving devices with very low energy consumption requirements. PHYs are defined for devices operating in a variety of regulatory domains.

**5.3 Is the completion of this standard contingent upon the completion of another standard?** No **5.4 Purpose:** The standard provides for low complexity, low cost, low power consumption, low energy consumption, and low data rate wireless connectivity among inexpensive devices, with PHY and data link layer using frequency shift keying (FSK), direct sequence spread spectrum (DSSS), and orthogonal frequency division multiplexing (OFDM) modulation, especially targeting the communications requirements of what is now commonly referred to as the Internet of Things. Multiple PHYs are defined to support a variety of frequency bands.

**5.5 Need for the Project:** The 802.15.4-2020 standard, including the 805.15.4w-2020, 802.15.4y-2021, and 802.15.4z-2020 amendments, hereafter referred to collectively as 802.15.4-2020, is overly complex and the end-users (industry) will benefit by extracting the ad-hoc low data rate wireless functionality into a simple, focused specification, enabling improved multi-vendor interoperability and further technology adoption.

**5.6 Stakeholders for the Standard:** The stakeholders include manufacturers and users of telecom, medical, environmental, industrial, energy, transportation, agricultural and consumer electronics equipment and users of equipment involving the use of wireless sensor and control networks.

**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?**

Yes

**Explanation:** This standard specifies the use of Unique Identifiers (EUI) and the Company ID (CID).

**7.1 Are there other standards or projects with a similar scope?** Yes

**Explanation:** As specified in the need for the project, some IEEE Std 802.15.4-2020 functionality will be extracted into IEEE P802.15.14 and IEEE P802.15.15.

**7.1.1 Standards Committee Organization:** IEEE Computer Society/LAN/MAN Standards Committee (C/ LM)

**Project/Standard Number:** P802.15.4-2020 **Project/Standard Date:**

**Project/Standard Title:** IEEE Standard for Low Rate Wireless Networks

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

**8.1 Additional Explanatory Notes:** Currently IEEE Std 802.15.4 is extensively implemented and has been adopted for an increasingly diverse range of applications commonly referred to as the Internet of Things.

However, IEEE Std 802.15.4 has become extremely difficult to understand, amend or enhance. Recently it has become clear that the ad-hoc low data rate wireless functionality and features have become increasingly complex to support inside the framework of IEEE Std 802.15.4. The extraction of the ad-hoc low data rate wireless functionality and features into a new standard will improve the accessibility and comprehension of the standard and more easily enable further amendments and enhancements.

List of standards referenced in the PAR are as follows:

IEEE 802.15.4-2020, IEEE Standard for Low-Rate Wireless Networks

IEEE 802.15.4w-2020, IEEE Standard for Low-Rate Wireless Networks Amendment for a Low Power Wide Area

Network (LPWAN) extension to the Low Energy Critical Infrastructure Monitoring (LECIM) Physical layer (PHY)

IEEE 802.15.4y-2021, IEEE Standard for Low-Rate Wireless Networks Amendment Defining Support for

Advanced Encryption Standard (AES)-256 Encryption and Security Extensions

IEEE 802.15.4z-2020, IEEE Standard for Low-Rate Wireless Networks Amendment: Enhanced Ultra Wideband

(UWB) Physical Layers (PHYs) and Associated Ranging Techniques

IEEE P802.15.14, IEEE Standard for Ad-Hoc Impulse Radio Ultra Wideband Wireless Networks