

# P802.15.4x

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**Submitter Email:** [bheile@ieee.org](mailto:bheile@ieee.org)

**Type of Project:** Amendment to IEEE Standard 802.15.4-2015

**PAR Request Date:** 18-Jan-2018

**PAR Approval Date:**

**PAR Expiration Date:**

**Status:** Unapproved PAR, PAR for an Amendment to an existing IEEE Standard

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**1.1 Project Number:** P802.15.4x

**1.2 Type of Document:** Standard

**1.3 Life Cycle:** Full Use

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**2.1 Title:** Standard for Low-Rate Wireless Networks

Amendment defining enhancements to the Smart Utility Network (SUN) Physical Layers (PHYs) supporting up to 2.4 Mb/s data rates

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**3.1 Working Group:** Wireless Personal Area Network (WPAN) Working Group (C/LM/WG802.15)

**Contact Information for Working Group Chair**

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**3.2 Sponsoring Society and Committee:** IEEE Computer Society/LAN/MAN Standards Committee (C/LM)

**Contact Information for Sponsor 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 Sponsor Ballot:** 03/2019

**4.3 Projected Completion Date for Submittal to RevCom**

**Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 10/2019**

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**5.1 Approximate number of people expected to be actively involved in the development of this project:** 60

**5.2.a. Scope of the complete standard:** This standard defines the physical layer (PHY) and medium access control (MAC) sublayer specifications for low-data-rate wireless connectivity with fixed, portable, and moving devices with no battery or very limited battery consumption requirements. In addition, the standard provides modes that allow for precision ranging. PHYs are defined for devices operating various license-free bands in a variety of geographic regions.

**5.2.b. Scope of the project:** This amendment defines enhancements to the SUN Orthogonal Frequency-Division Multiplexing (OFDM) PHYs enabling the support for data rates up to 2.4 Mb/s. This amendment also defines additional channel plans to support emerging applications. Typical range of the radio is up to 5 kilometers with line of sight using omnidirectional antennas.

**5.3 Is the completion of this standard dependent upon the completion of another standard:** No

**5.4 Purpose:** The standard provides for ultra low complexity, ultra low cost, ultra low power consumption, and low data rate wireless connectivity among inexpensive devices. In addition, one of the alternate PHYs provides precision ranging capability that is accurate to one meter. Multiple PHYs are defined to support a variety of frequency bands.

**5.5 Need for the Project:** Building upon the numerous successful deployments of IEEE Std 802.15.4 SUN PHY technology in Field Area Networking (FAN) and the rapid growth in applications, such as the Internet of Things (IoT), Smart Grid, Smart Cities and others, these SUN

PHY enhancements are needed to support higher data rates along with enhancements for longer range utilizing existing hardware deployments based upon the IEEE Std 802.15.4 SUN PHY's. As an example, these enhancements enable broader Electric System Distribution Automation, and reduce the amount of equipment needed for deployment in Smart Grid systems. This is but one of many application areas, some of which are cited above, where FAN Enhancements can have a substantial beneficial impact.

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

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### **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

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**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

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### **8.1 Additional Explanatory Notes:**