

# P802.15.4z

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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:** P802.15.4z

**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 enhanced high rate pulse repetition frequency (HRP) and low rate pulse repetition frequency (LRP) Ultra-Wide Band (UWB) Physical Layers (PHYs) and associated ranging techniques

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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:** 02/2019

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

**Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 08/2019**

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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 enhances the HRP and LRP UWB PHYs and associated ranging techniques. Areas of enhancement include additional coding and preamble options, improvements to existing modulations to increase the integrity and accuracy of the ranging measurements, and additional information element definitions to facilitate ranging information exchange. The amendment defines MAC changes to support these PHY enhancements. Typical range of the radio is up to 100 meters.

**5.3 Is the completion of this standard dependent upon the completion of another standard:**

**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:** IEEE Std 802.15.4 is widely used in a variety of applications which employ the ranging capabilities enabled by the HRP and LRP UWB PHYs. Current users and product manufacturers have identified the need for improved efficiency, integrity and accuracy of the existing ranging measurement methods in order to expand the usefulness of the standard for applications such as RFID and Automotive, in particular, automotive remote control, and similar personal devices. These PHY enhancements better address the needs of current applications and as well as meeting the needs of a wider set of applications where the integrity and accuracy of distance measurement is important, opening up new areas of application.

**5.6 Stakeholders for the Standard:** The stakeholders include silicon vendors, manufacturers and users of automotive products, remote control manufacturers and users, telecom (smart phones), medical, environmental, energy, and consumer electronics equipment, manufacturers, and users, 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:**