

---

## P802.15.4

---

**Type of Project:** Revision to IEEE Standard 802.15.4-2020

**Project Request Type:** Initiation / Revision

**PAR Request Date:**

**PAR Approval Date:**

**PAR Expiration Date:**

**PAR Status:** Draft

**Root Project:** 802.15.4-2020

---

**1.1 Project Number:** P802.15.4

**1.2 Type of Document:** Standard

**1.3 Life Cycle:** Full Use

---

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

**Change to Title:** ~~IEEE~~ Standard for 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:**

**Name:** Clinton Powell

**Email Address:** cpowell@ieee.org

**3.1.2 Contact Information for Working Group Vice Chair:**

**Name:** PHILIP E BEECHER

**Email Address:** phil@beecher.co.uk

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

**3.2.1 Contact Information for Standards Committee Chair:**

**Name:** Paul Nikolich

**Email Address:** p.nikolich@ieee.org

**3.2.2 Contact Information for Standards Committee Vice Chair:**

**Name:** James Gilb

**Email Address:** gilb@ieee.org

**3.2.3 Contact Information for Standards Representative:**

**Name:** James Gilb

**Email Address:** gilb@ieee.org

---

**4.1 Type of Ballot:** Individual

**4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot:**

Jan 2024

**4.3 Projected Completion Date for Submittal to RevCom:** Sep 2024

---

**5.1 Approximate number of people expected to be actively involved in the development of this project:** 50

**5.2 Scope of proposed 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 in a variety of geographic regions.

**5.3 Is the completion of this standard contingent 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, especially targeting the communications requirements of what is now commonly referred to as the Internet of Things. In addition, some of the alternate PHYs provide 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:** This project is needed to incorporate accumulated maintenance changes and corrigenda (editorial and technical corrections) into the standard and to include approved amendments. The amendments include IEEE Std 802.15.4w, IEEE Std 802.15.4y, IEEE Std 802.15.4z, IEEE Std 802.15.4aa which are approved. One additional amendment, P802.15.4ab, is currently under development.

**Change to Need for the Project:** ~~There~~ This ~~are~~ project ~~a~~ is ~~number~~ needed ~~errors,~~ to ~~inconsistencies,~~ incorporate ~~and~~ accumulated ~~ambiguities~~ maintenance ~~in~~ changes ~~need~~ and ~~of~~ corrigenda ~~correction.~~ (editorial ~~and~~ and ~~there~~ will ~~technical~~ be ~~corrections)~~ 6 ~~completed~~ amendments ~~during~~ into ~~the~~ course ~~standard~~ of ~~and~~ the ~~to~~ revision ~~include~~ that ~~approved~~ should

~~amendments. be The rolled amendments up include These IEEE are Std 802.15.4n 4w, IEEE Std 802.15.4q 4y, IEEE Std 802.15.4s 4z, IEEE Std 802.15.4t 4aa which are approved. One additional amendment, 802-P802.15.4u 4ab, and is 802.15.4v currently under development.~~

**5.6 Stakeholders for the Standard:** The stakeholders include 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.

---

## 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:** The RAC may want to review for correct and consistent usage of registry terms.

---

**7.1 Are there other standards or projects with a similar scope?** No

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

---

**8.1 Additional Explanatory Notes:** From Section 5.5, the approved amendments for inclusion are:

IEEE 802.15.4w-2020: IEEE Standard for Low-Rate Wireless Networks--Amendment 2: Low Power Wide Area Network (LPWAN) Extension to the Low-Energy Critical Infrastructure Monitoring (LECIM) Physical Layer (PHY)

IEEE Std 802.15.4y-2021: IEEE Standard for Low-Rate Wireless Networks Amendment 3: Advanced Encryption Standard (AES)-256 Encryption and Security Extensions

IEEE Std 802.15.4z-2020: IEEE Standard for Low-Rate Wireless Networks--Amendment 1: Enhanced Ultra Wideband (UWB) Physical Layers (PHYs) and Associated Ranging Techniques

, IEEE Std 802.15.4aa-2022: IEEE Standard for Low-Rate Wireless Networks Amendment 4: Higher Data Rate Extension to IEEE 802.15.4 Smart Utility Network (SUN) Frequency Shift Keying (FSK) Physical Layer (PHY)

The amendment currently under development is:

1.  P802.15.4ab - Amendment: Enhanced Ultra Wide-Band (UWB) Physical Layers (PHYs) and Associated Medium Access and Control (MAC) sublayer Enhancements