**IEEE P802.19**

**Wireless Coexistence**

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| Project | IEEE P802.19 Wireless Coexistence WG | |
| Title | **Proposed Draft Text on Renaming 802.15.4w** | |
| Date Submitted | September 19, 2025 | |
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| Re: |  | |
| Abstract | This submission presents proposed text for P802.19.3a. | |
| Purpose | To review and discuss TOC items in preparing the Draft. | |
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***TG3a editor: Please change the text in the complete document as follows:***

***Replace IEEE Std 802.15.4w with IEEE Std 802.15.4 LECIM FSK Split Mode***

***The following text is only an example.***

***TG3a editor: Please change the following text as follows:***

4.4 IEEE Std 802.15.4 LECIM FSK Split Mode

A summary of IEEE Std 802.15.4 LECIM FSK Split Mode is presented in Robert’s “802.15.4w Overview and Status” [B36]. IEEE Std 802.15.4 LECIM FSK Split Mode has defined an LPWAN extension to the IEEE Std 802.15.4 LECIM PHY layer. This extension is intended to cover network cell radii of typically 10 km to 15 km in rural areas and deep in-building penetration in urban areas. It uses the LECIM FSK PHY modulation schemes with extensions to lower bitrates, for example payload bitrate typically <30 kb/s. It extends the frequency bands to additional sub-1 GHz unlicensed and licensed frequency bands to cover the market demand. For improved robustness in channels with high levels of interference, it defines mechanisms for the fragmented transmission of forward error correction (FEC) code-words, as well as time and frequency patterns for the transmission of the fragments. Furthermore, it defines lower code rates for the FEC in addition to the K=7 R=1/2 convolutional code.

IEEE 802.15.4 LECIM FSK Split Mode signal bandwidth ranges from approximately 2.3 kHz to 19 kHz using Gaussian-filtered minimum shift keying (GMSK) modulation, while the instantaneous PHY data rate ranges between 600 b/s and 9 kb/s. Using coding and fragmentation, the effective data rate is only from 60 b/s to 900 b/s, which is required to achieve the required long-range transmission with transmit powers of a few milliwatts only.

Furthermore, multiple devices can access identical frequency resources at the same time.

The frequency band allocation is region dependent and supports most license-exempt sub-1 GHz bands, for example, 902–928 MHz band in the United States, 169 MHz and 863–870 MHz bands in Europe, and 920– 928 MHz band in Japan. The maximum transmit power is also region dependent (e.g., up to 500 mW in Europe). However, the typical transmission for LPWAN is 10 mW.

IEEE Std 802.15.4 LECIM FSK Split Mode can use either TDMA or ALOHA for the channel access. An IEEE 802.15.4 LECIM FSK Split Mode network can have star or mesh topology.

IEEE Std 802.15.4 LECIM FSK Split Mode specifies active and passive coexistence methods with other IEEE 802.15.4 systems and IEEE 802.11 S1G systems.