IEEE P802.11  
Wireless LANs

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| **Draft LS from 802.11 to ISO/IEC JTC1/SC6 in relation to a proposed Wake-Up Radio project** | | | | |
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Abstract

This document contains draft text for a liaison statement (LS) from IEEE 802.11 to ISO/IEC JTC1/SC6 in relation to a proposed Wake-Up Radio project.

Mr. Jungyup OH  
ISO/IEC JTC1/SC6 Committee Manager

Dear Mr. Jungyup OH

At its February 2020 meeting in London, ISO/IEC JTC1/SC6 discussed a proposal for a NWIP related to Wake-Up Radio. The proposal from the Korea National Body was documented in 1N203 (replacing 1N198) and was titled, *Korean NB contribution on NWIP of Narrow Band Variable Low Power Wake up OOK signal and Radio Device interoperable with ISM Legacy communication (Wi-Fi, Bluetooth, ZigBee, CW and etc.)*. SC6 ultimately decided to approve the proposal as a PWI, with comments requested by October 2020.

After the February 2020 meeting, a NWIP ballot on the proposed Wake-Up Radio project was started based on the material in documents N17200 and N17201, with a closing date of 18 September 2020. We understand that this ballot was started prematurely. Ultimately, the ballot was stopped, and the associated documents were withdrawn.

However, in the meantime, IEEE 802.11 TGba reviewed documents N17200 and N17201, particularly comparing the proposed project against the almost complete IEEE 802.11ba project that specifies Wake-Up Radio functionality in the context of IEEE 802.11. The [PAR](https://www.ieee802.org/11/PARs/P802.11ba.pdf) (project authorization request) for IEEE 802.11ba is publicly available. IEEE 802.11ba D6.0 was liaised to SC6 as N17157 in March 2020 for information.

This Liaison Statement contains a summary of IEEE 802.11 TGba’s review, in response to the request from SC6 in February 2020 for comments on the PWI. The detailed review is publicly available in IEEE 802.11 document [11-20-1008r0](https://mentor.ieee.org/802.11/dcn/20/11-20-1008-00-0jtc-tgba-and-iso-iec-project-overlap.pptx).

The IEEE 802.11 TGba’s review highlighted significant overlaps between the proposed Wake-Up Radio project in SC6 and IEEE 802.11ba. In particular:

1. There is considerable overlap between the scopes of the two projects
2. There is significant overlap at the operation scenario and system overview levels
   * Some drawings are identical
3. The wake-up packet design of the two projects are very similar
   * Some drawings are identical
4. The wake-up PPDU structures of the two projects are very similar
   * Some drawings are identical
5. The data rates of the two projects are the same
   * See IEEE 802.11ba D6.0, page 133
6. The wake-up preamble of the two projects are very similar
   * The example waveform is a copy from IEEE 802.11 document [11-16-605r3](https://mentor.ieee.org/802.11/dcn/16/11-16-0605-03-0wng-proposal-for-lp-wur-study-group.pptx), slide12

The conclusion of the IEEE 802.11 Working Group after the review is that the proposed SC6 project is unnecessary to support Wake-Up Radio in the context of IEEE 802.11 because there is already an IEEE 802.11-specific solution available that is almost complete. The current expectation is that IEEE 802.11ba will ratified by the IEEE-SA Standards Board early 2021.

We note that the proposed SC6 project is also designed to provide Wake-Up Radio functionality for Bluetooth and Zigbee systems, in addition to IEEE 802.11 systems. While the IEEE 802.11 WG cannot speak for the Bluetooth SIG or the Zigbee Alliance, it is our understanding that both technologies already have mechanisms to ensure they are suitable for very low power use cases and so it seems unlikely the proposed SC6 project is necessary in the context of either Bluetooth or Zigbee.

Thank you for providing the IEEE 802.11 Working Group the opportunity to comment on the proposed SC6 Wake-Ip Radio project. We would be happy to provide any clarification of our comments and review.

Yours Sincerely,

Dorothy Stanley

Chair, IEEE 802.11 Working Group