

IEEE 802.11 Working Group Liaison Statement to ISO/IEC JTC1/SC6 in Relation to a Proposed Wake-Up Radio Project

TO:

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

CC:

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SUBJECT: IEEE 802.11 Working Group Liaison Statement in Relation to a Proposed Wake-Up Radio Project

DATE: 2020-09-23

Dear Mr. Jungyup OH,

At its February 2020 meeting in London, ISO/IEC JTC1/SC6 discussed a proposal for a New Work Item Proposal (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 decided to approve the proposal as a Preliminary Work Item (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. The ballot was stopped, and the associated documents were withdrawn.

In response to the SC6 request for comments, the IEEE 802.11 WG has reviewed documents N17200 and N17201, particularly comparing the proposed project against the nearly completed IEEE P802.11ba standard which specifies Wake-Up Radio functionality in the context of IEEE 802.11. The [Project Authorization Request \(PAR\)](#) for IEEE P802.11ba is publicly available. IEEE P802.11ba D6.0 was liaised to SC6 as N17157 in March 2020 for information.

A summary of the IEEE 802.11 WG review is below. The detailed review is publicly available in IEEE 802.11 document [11-20-1008](#).

The review highlighted significant overlaps between the proposed Wake-Up Radio project in SC6 and IEEE P802.11ba. 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](#), slide12

The conclusion of the IEEE 802.11 Working Group is that the proposed SC6 project is unnecessary to support Wake-Up Radio in the context of IEEE 802.11 as an IEEE 802.11-specific solution, the P802.11ba standard, is nearly completed. The current expectation is that the IEEE P802.11ba standard will be ratified by the IEEE-SA Standards Board in 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 have mechanisms in place to ensure they are suitable for very low power use cases.

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

Yours sincerely,

/s/

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