

Dear Gary

I completed the pre-ballot review of Draft 2 of IEEE P802.15.4™, and my comments (below) will help ensure your draft is ready for ballot.

Section I comments shall be resolved before the ballot begins. The draft *cannot* be balloted or recirculated until these issues are resolved.

Section II comments shall be resolved before the final recirculation. These issues have to be resolved, then reviewed by balloters.

Please note that comprehensive formatting and editing (i.e., spelling, punctuation, grammar) will take place after the draft has been approved. This MEC addresses only issues that may stand in the way of IEEE SA Standards Board approval.

Thank you for the opportunity to review this draft. If you have any queries about the comments in this MEC, please contact **Catherine Berger** via email (berger.catherine@ieee.org).

Your OPM Program Manager, **Christy Bahn** will assist you with next steps.

SECTION I: Shall be resolved before the ballot begins.**COPYRIGHT¹****Permission letters for borrowed content²**

Copyright permission letters for borrowed text (including definitions), tables, and figures shall be submitted to IEEE prior to the start of ballot. Submit all copyright permission letters to your OPM Program Manager.

Copyright date³

The correct copyright year shall appear on the first page of the standard and in the footer on each page. When you go to ballot this draft, please update the copyright year to “2024”.

WORD USAGE SUBCLAUSE**Placement**

A Word usage subclause shall appear in Clause 1 of the draft. It shall appear as 1.3 after 1.2 Purpose.

Mandatory text

The Word usage subclause shall consist of the following text with the following footnotes:

1.3 Word usage

<This subclause is mandatory, and the definitions of shall, should, may, and can appear as defined in 6.4.7 of the IEEE SASB Operations Manual and shall not be modified.>

The word *shall* indicates mandatory requirements strictly to be followed in order to conform to the standard and from which no deviation is permitted (*shall equals is required to*).^{1,2}

The word *should* indicates that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required (*should equals is recommended that*).

The word *may* is used to indicate a course of action permissible within the limits of the standard (*may equals is permitted to*).

The word *can* is used for statements of possibility and capability, whether material, physical, or causal (*can equals is able to*).

¹The use of the word *must* is deprecated and cannot be used when stating mandatory requirements, *must* is used only to describe unavoidable situations.

²The use of *will* is deprecated and cannot be used when stating mandatory requirements, *will* is only used in statements of fact.

¹ More information on the IEEE SA Copyright Policy can be found at: <https://standards.ieee.org/ipr/>.

² Sample permission letters can be downloaded from Templates at: <https://standards.ieee.org/develop/drafting-standard/>.

³ The copyright statement can be found in 11.2.2 of the [IEEE Standards Style Manual](#) and can be copied from the latest IEEE SA template files, which can be downloaded from Templates at: <https://standards.ieee.org/develop/drafting-standard/>.

SECTION II: Shall be resolved before the final recirculation.

Absolute verbiage

Words making explicit or implicit guarantees should be modified if there is a possibility that unforeseen situations or circumstances may alter an outcome. “Ensure” might be changed to “help ensure,” and “to prevent” might be changed to “to reduce.” Your draft contains many instances of “ensure”, most of which were in the last version of the standard. Just take another look at them and make sure you are making a guarantee that might need to be modified.

COMMERCIAL TERMS and CONDITIONS and TRADEMARKS⁴

References to commercial equipment or products in a standard shall be generic and shall not include trademarks or other proprietary designations.

IEEE standards shall not include terms or conditions that are primarily contractual or commercial in nature, as opposed to technical or scientific in nature.

REGISTRATION OBJECTS⁵

Drafts containing a registration of objects shall be submitted to the IEEE Registration Authority (IEEE RA) for mandatory coordination. The text containing the registration information should be highlighted in the draft, and the clause should be noted in the email to the IEEE RA.⁶

VERBS

Notes are informative and as such shall not contain any requirements i.e., “shall” statements.⁷ Currently this draft contains a few notes that either need to be rewritten to remove the “shall” statement or changed from a note into normative body text.

10.28.2.7

NOTE—RCPI, ANPI, IPI, and RSNI are specified in IEEE Std 802.11-2016. ANPI and IPI are not a PIB attribute and are used only for calculating RSNI. The IPI value should be updated to calculate RSNI as accurately as possible. If the device operates in CCA Mode 4 or CCA capability is not used, the procedure **shall** return with a Status of NON_SUPPORTED.

16.2.1

NOTE—Each HRP UWB-compliant device **shall** support the length 31 preamble codes specified in Table 16-7 and that two base rates corresponding to the two mandatory PRFs result for this code length. The mandatory SHR base rates are, therefore, 1.01 Msymbol/s and 0.25 Msymbol/s as indicated in Table 16-5.

16.2.2

NOTE—The delay line of the convolutional code is initialized to zero. For this reason, the position bit of Symbol 0 **shall** always be zero.

16.3.1

⁴ More information on commercial terms and conditions can be found in the IEEE SA Policy set forth in 6.2 of the [IEEE SA Standards Board Operations Manual](#) and the primer dated 1 January 2023 at: <https://standards.ieee.org/wp-content/uploads/2023/03/primer-ieee-sa-commercial-terms-conditions-policy.pdf>.

⁵ More information on registration objects can be found at: <https://standards.ieee.org/products-programs/regauth/>.

⁶ Submit drafts for Registration Authority review to rac-chair@ieee.org.

⁷ More information on verb usage can be found in Clause 9 of the [IEEE Standards Style Manual](#). See also 1.2 of the [IEEE SA Standards Board Operations Manual](#) for information on types of standards.

NOTE—The equation defines the transmitted signal during the valid burst interval; at all other possible burst positions, no signal **shall** be transmitted.

INCLUSIVE LANGUAGE

IEEE SA uses language and terminology that are in compliance with the IEEE Nondiscrimination Policy.^{8,9} Please avoid use of the following terms: master/slave, blacklist, and whitelist.

NORMATIVE REFERENCES and BIBLIOGRAPHY¹⁰

Normative references

Some of the references listed in Clause 2 include the year. Please consider removing the year so the user will update to the most recent version. Within text, if the standard points to a specific clause, table, figure, etc. then you could include the year with that specific instance.¹¹ This change cannot be made after approval.

Documents published by other organizations may be cited provided the document is publicly available at a reasonable cost and it includes the edition or date of publication. Normative references within the standard, are not permitted to contain commercial terms.

Bibliography

Please add IEEE Std 802.11 to the bibliography as it was cited in text.

GRAPHICS

Quality of line art and photos shall comply with minimum requirements for print reproduction.¹²

Separate electronic files of figures shall be supplied (unless created in Microsoft® Word or Adobe FrameMaker®).

⁸ The IEEE Nondiscrimination Policy can be found at: <https://www.ieee.org/about/corporate/governance/p9-26.html>.

⁹ In addition to the IEEE Nondiscrimination Policy, on 3 December 2020, the IEEE SA Standards Board passed a resolution that can be found in 10.5 of the [IEEE Standards Style Manual](#).

¹⁰ More information on references can be found in 12.3 of the [IEEE Standards Style Manual](#).

¹¹ Normative text includes main clauses of the document, footnotes to tables, footnotes to figures, and annexes marked “normative.”

¹² Graphics requirements are outlined in Clause 17 of the [IEEE Standards Style Manual](#).