Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: Proposed OFDM PHY comment resolutions for TG4m Sponsor Ballot

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Re: [802.15 TG4m]

Abstract: This document provides proposed OFDM resolutions for TG4m Sponsor Ballot.

Purpose: To provides proposed resolutions for OFDM PHY related comments from TG4m sponsor ballot.

Comments regarding OFDM PHY

- CID 297
- CID 298
- CID 299
- CID 300
- CID 301
- CID 303
- CID 307
- CID 313
- CID 317
- CID 388

Proposed resolution of CID 297 (1)

- **Related subclause**
  - Subclause 20.2 page 67 line 1
- **Comment**
  - Previous versions and amendments of the 802.15.4 standard include already well defined OFDM modes. Why is there a need for a different OFDM mode definition? It will make more difficult the adoption of the standard having different implementations, where a common implementation would have been possible.
- **Proposed change from commenter**
  - The Working Group must explain in the text the technical reasons for a different OFDM scheme to be selected for this amendment.

Proposed resolution of CID 297 (2)

- **Proposed resolution**
  - Accept in principle.
  - For TVWS OFDM PHY, considering better radiation propagation characteristics of TVWS signals, transmitter specifications can be simplified to have an appropriate structure which fits better for command and control applications by reducing the number of OFDM symbols for the better packet structure.
  - Add a paragraph at the beginning of Clause, 20 on Page 69,

    “One of key considerations for a new setting of parameters for TVWS PHYs is how to optimize the parameters to allow 802.15.4 wireless networks to take advantage of the TV white space spectrum for use in large scale device command and control applications. The parameters for three PHYs are identified for TVWS services in this standard, considering this optimization.”

Proposed resolution of CID 298 (1)

- **Related subclause**
  - Subclause 20.2.1.1.2 page 69 line 11
- **Comment**
  - Definition for STF_freq is missing.
- **Proposed change from commenter**
  - State that STF_freq is given in Table 203.

Proposed resolution of CID 298 (2)

- **Proposed resolution**
  - Accepted.
  - Add a statement, “where STF_freq is given in Table 203.” in Line 12 of Page 69.

Proposed resolution of CID 299 (1)

- **Related subclause**
  - Subclause 20.2.1.1.2 page 69 line 54
- **Comment**
  - Definition for LTF_freq is missing.
- **Proposed change from commenter**
  - State that LTF_freq is given in Table 204.

Proposed resolution of CID 299 (2)

- **Proposed resolution**
  - Accepted.
  - Add a statement, “where LTF_freq is given in Table 204.” below Line 54 of Page 69.

Proposed resolution of CID 300 (1)

- **Related subclause**
  - Subclause 20.2.1.3 page 72 line 6
- **Comment**
  - Need to clarify the procedure of the HCS calculation by adding some steps of the procedure.
- **Proposed change from commenter**
  - Refer to the document to be submitted (15-14-0505-00).

Proposed resolution of CID 300 (2)

- **Proposed resolution**
  - Accepted
  - Add a paragraph to Page 72 as explained in doc. 15-14-0505-00.

Proposed resolution of CID 301 (1)

- **Related subclause**
  - Subclause 20.2.3.3 page 75 line 29
- **Comment**
  - Order of coded bits in a coded symbol is unspecified.
- **Proposed change from commenter**
  - State that the first coded bit is Output Data A and the second coded bit is Output Data B.

Proposed resolution of CID 301 (2)

- **Proposed resolution**
  - Accepted
  - Add a sentence, “The first coded bit is Output Data A and the second coded bit is Output Data B.” at the end of Subclause 20.2.3.3. on Page 75.

Proposed resolution of CID 303 (1)

- **Related subclause**
  - Subclause 20.2.3.4 page 75 line 43
- **Comment**
  - The structure of the interleaver is not clear, the process of interleaving should be illustrated.
- **Proposed change from commenter**
  - Insert a figure to show the corresponding process of interleaving.

Proposed resolution of CID 303 (2)

- **Proposed resolution**
  - Accepted
  - Add a figure on Page 75 as explained in doc 15-13-0515-00.

Proposed resolution of CID 307 (1)

- **Related subclause**
  - Subclause 20.2.3.5 page 76 line 50
- **Comment**
  - Manner in which data symbols are mapped to data carriers is left unspecified..
- **Proposed change from commentor**
  - State that the first output symbol is mapped to the most negative data carrier index, etc.

Proposed resolution of CID 307 (2)

- **Proposed resolution**
  - Accepted.
  - Add a sentence, “The first output symbol is mapped to the most negative data carrier index in data tones and the second output symbol is mapped to the second most negative data carrier index in data tones and so on.” before the sentence in Line 49 of Page 76.

Proposed resolution of CID 313 (1)

- **Related subclause**
  - Subclause 20.2.3.9 page 77 line 53
- **Comment**
  - Need to correct the figure number referenced.
- **Proposed change from commentor**
  - Change "PHR, as shown in Figure 102" to "PHR, as shown in Figure 176".

Proposed resolution of CID 313 (2)

- **Proposed resolution**
  - Accepted.
  - Change as suggested by commenter.

Proposed resolution of CID 317 (1)

- **Related subclause**
  - Subclause 20.2.4.7 page 79 line 51
- **Comment**
  - The subscript f of Nf is lower case in the formula, where as in the description it is in upper case.
- **Proposed change from commentor**
  - It can be made to NF in the formula, F in the subscript

Proposed resolution of CID 317 (2)

- **Proposed resolution**
  - Accepted.
  - Change two "N_f"s to "N_F" in the formula in Line 38 of Page 79 as suggested by the commenter and additionally one "N_f" to "N_F" in Line 6 of Page 80.

Proposed resolution of CID 388 (1)

- **Related subclause**
  - Annex U page 119 line 1
- **Comment**
  - Show the example encoding a packet for the TVWS-OFDM PHY to avoid ambiguity.
- **Proposed change from commentor**
  - Insert the Annex U for the example encoding a packet for the TVWS-OFDM PHY.

Proposed resolution of CID 388 (2)

- **Proposed resolution**
  - Accepted.
  - Add an annex U as suggested by the commenter. (Refer to doc. 15-13-0287-00.)