IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Transmit Power Envelope Subelement | | | | |
| Date: 2024-01-08 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Christian Berger | NXP | 350 Holger Way, San Jose, CA |  | [christian.berger@nxp.com](mailto:christian.berger@nxp.com) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This submission proposes a change of to indicate support for mandatory/optional puncturing patterns, changes are relative to Draft P802.11be\_D4.0, Draft P802.11REVme\_D4.1 and Draft P802.11bk D1.0.

Revisions:

1. Decide on option 2, add required edits of mention of ‘subelement’

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGax Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGbk Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGbk Editor: Editing instructions preceded by “TGbk Editor” are instructions to the TGbk editor to modify existing material in the TGaz draft. As a result of adopting the changes, the TGbk editor will execute the instructions rather than copy them to the TGbk Draft.***

**The text preceded by “Discussion” is not part of the adopted changes.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| **1044** | 4.14 | 9.4.2.298 | "The Transmit Power Envelope subelement has the same definition as the Transmit Power Envelope element" - how can a subelement be an element? The table specifies subelement ID 3, but this element has ID 195 - In my mind this needs at least a wrapper. | Create a wrapper with ID 3 and length that hold this Transmit Power Envelope element inside; alternatively remove this from Ranging Parameters element and include as a separate element in the frame(s) in question. | **Revised**  TGbk editor, make the changes identified in document:  <https://mentor.ieee.org/802.11/dcn/24/11-24-0038-01-00bk-transmit-power-subelement.docx> |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

1. ***Discussion:***
2. Table 9-322h23fd—Ranging Subelement IDs for Ranging Parameters

|  |  |  |
| --- | --- | --- |
| Subelement ID | Name | Extensible |
| 0 | Non-TB Specific subelement | Yes |
| 1 | TB-specific subelement | Yes |
| 2 | Secure HE-LTF subelement | Yes |
| 3 | Transmit Power Envelope subelement | Yes |
| 4 | 320 MHz Ranging subelement | Yes |
| 5-220 | Reserved |  |
| 221 | Vendor Specific |  |
| 222-255 | Reserved |  |

… …

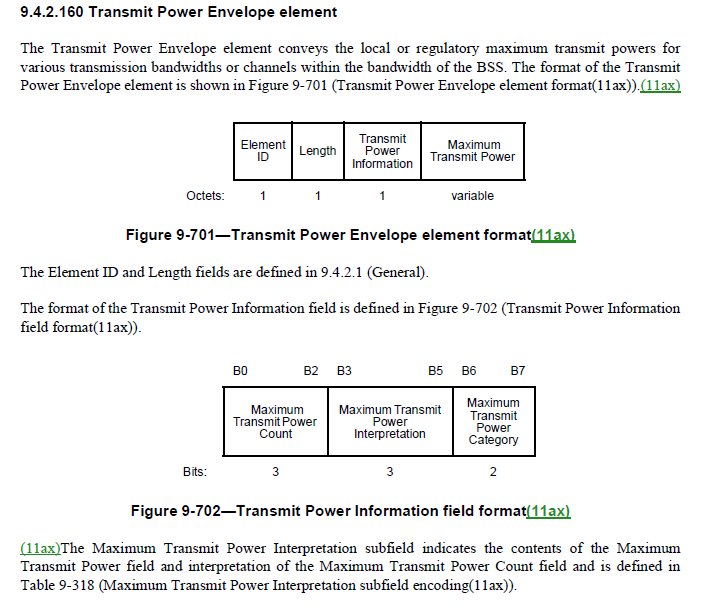
The Transmit Power Envelope subelement has the same definition as the Transmit Power Envelope element (see 9.4.2.161 (Transmit Power Envelope element)).

The format of the 320 MHz Ranging subelement is as shown in Figure 9-7xx (320 MHz Ranging subelement format).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | B0 B7 | B8 B15 | B16 B18 | B19 B21 | B22 | B23 | B24 B39 |
|  | Subelement ID | Length | Max R2I  Nss =320 MHz | Max I2R  Nss =320 MHz | Puncturing Pattern  Support | Reserved | Puncturing Pattern |
| Bits: | 8 | 8 | 3 | 3 | 1 | 1 | 16 |

**Figure 9-7xx—****320 MHz Ranging subelement format**

The Subelement ID and Length fields are defined in 9.4.3 (Subelements).



### Option 1:

Create a wrapper:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Subelement ID | Length | Transmit Power Envelope |
| Octets: | 1 | 1 | variable |

**Figure 9-7xx—Transmit Power Envelope subelement format**

The Subelement ID and Length fields are defined in 9.4.3 (Subelements).

The Transmit Power Envelope field contains a Transmit Power Envelope element (see 9.4.2.160 (Transmit Power Envelope element)).

### Option 2:

Move to FTM frame level:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Category | | Public Action | | | Dialog Token | | Follow Up Dialog Token | | TOD | | | | TOA | | | | | |
| Octets: | 1 | | 1 | | | 1 | | 1 | |  | 6 | | |  | | |  | | 6 |
|  | TOD Error | | TOA Eror | | | LCI Report  (optional) | | Location Civic Report  (optional) | | Fine Timing  Measurement  Parameters  (optional) | | | | | FTM  Synchronization information  (optional) | | | | |
| Octets: | 2 | | 2 | | | variable | | variable | | variable | | | |  | | | variable | | |
|  | | Ranging Parameters (optional) | | Secure HE-LTF Parameters (optional) | Channel Measurement Feedback Type (optional) | | Channel Measurement Feedback (optional) | | Direction Measurement Results  (optional) | | | Multiple Best AWV ID  (optional) | Multiple AOD Feedback (optional) | | | LOS Likelihood (optional) | | Transmit Power Envelope (optional) | |
| Octets: | | variable | | 14 | 2 | | variable | | 9 | | | variable | variable | | | 4 | | variable | |

1. Figure 9-896—Fine Timing Measurement (FTM) Action field format

… …

The Transmit Power Envelope field is optionally present. If present, it contains a Transmit Power Enveople element as defined 9.4.2.160 (Transmit Power Envelope element).

1. ***TGbk Editor: Change Table-412 (p.1519 in 11me) as follows (and update editor instructions):***
2. Table 9-412—Ranging Subelement IDs for Ranging Parameters

|  |  |  |
| --- | --- | --- |
| Subelement ID | Name | Extensible |
| 0 | Non-TB Specific subelement | Yes |
| 1 | TB-specific subelement | Yes |
| 2 | Secure HE-LTF subelement | Yes |
|  |  |  |
| 3 | 320 MHz Ranging subelement | Yes |
| 4-220 | Reserved |  |
| 221 | Vendor Specific |  |
| 222-255 | Reserved |  |

1. ***TGbk Editor: Change clause 9.4.2.301 (p.1515 in 11me, p. 24 in 11bk) as follows (add at the end):***

The format of the 320 MHz Ranging subelement is as shown in Figure 9-7xx (320 MHz Ranging subelement format).

1. ***TGbk Editor: Change Figure 9- 1176 (p.1633 in 11me) as follows (seems 11me is missing top row):***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Category | | Public Action | | | Dialog Token | | Follow Up Dialog Token | | TOD | | | | TOA | | | | | |
| Octets: | 1 | | 1 | | | 1 | | 1 | |  | 6 | | |  | | |  | | 6 |
|  | TOD Error | | TOA Eror | | | LCI Report  (optional) | | Location Civic Report  (optional) | | Fine Timing  Measurement  Parameters  (optional) | | | | | FTM  Synchronization information  (optional) | | | | |
| Octets: | 2 | | 2 | | | variable | | variable | | variable | | | |  | | | variable | | |
|  | | Ranging Parameters (optional) | | Secure HE-LTF Parameters (optional) | Channel Measurement Feedback Type (optional) | | Channel Measurement Feedback (optional) | | Direction Measurement Results  (optional) | | | Multiple Best AWV ID  (optional) | Multiple AOD Feedback (optional) | | | LOS Likelihood (optional) | | Transmit Power Envelope (optional) | |
| Octets: | | variable | | 14 | 2 | | variable | | 9 | | | variable | variable | | | 4 | | variable | |

1. Figure 9- 1176—Fine Timing Measurement (FTM) Action field format
2. ***TGbk Editor: Change clause 9.6.7.33 (p.1636 in 11me) as follows (add at the end):***

The LOS Likelihood element may be present in any FTM frame that contain TOA and TOD or Direction Measurement Results on measurements performed over DMG or EDMG PPDUs.

The Transmit Power Envelope field is optionally present. If present, it contains one or more Transmit Power Envelope elements as defined 9.4.2.160 (Transmit Power Envelope element).

1. ***TGbk Editor: Change clause 11.21.6.3.3 (p.26, l. 25 in 11bk) as follows (delete):***
2. ***TGbk Editor: Change clause 11.21.6.3.3 (p.28, l. 16 in 11bk) as follows (delete):***

***Insert the following paragraphs at the end of subclause 11.21.6.3.3. (#202308-01)***

If an RSTA is a standard power AP or an indoor standard power AP, the RSTA shall include at least one Transmit Power Envelope element in an IFTM frame. If an RSTA is neither a standard power AP nor an indoor standard power AP, the RSTA should include Transmit Power Envelope element(s) in an IFTM frame.

If the IFTM frame or the FTM frame contains multiple Transmit Power Envelope elements, the Transmit Power Envelope elements shall be ordered based on the corresponding rules for Transmit Power Envelope element defined in 10.22.4 (Operation with the Transmit Power Envelope element).