IEEE P802.11
Wireless LANs

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| Draft Text of CA TRN Subfield  |
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Abstract

This document proposes to modify specification text for subcluase 30.9.2.2.6 to describe the TRN Subfield definition for channel aggregation.

**30.9.2.2.6 TRN subfield definition**

The TRN field shall consist of NTX orthogonal waveforms, where NTX is the number of transmit chains used in the transmission of the EDMG PPDU. The basic TRN subfield for the waveform transmitted with the *ith*  transmit chain, TRNibasic, is composed of a pair of Golay complementary sequences GaiN and GbiN arranged as TRNibasic = [GaiN, -GbiN, GaiN, GbiN, GaiN, -GbiN], where:

* *N* is the Golay sequence length and is equal to TRN\_BL × *NCB* and
* TRN\_BL represents the length of the Golay sequence used in the TRN subfield and depends on the value of the TRN Subfield Sequence Length field in EDMG-Header-A of the PPDU. If TRN Subfield Sequence Length field is 0, TRN\_BL is equal to 128. If TRN Subfield Sequence Length field is 1, TRN\_BL is equal to 256. If TRN Subfield Sequence Length field is 2, TRN\_BL is equal to 64.
* *NCB* represents the integer number of contiguous 2.16 GHz channels over which the TRN subfield is transmitted. For a 2.16 GHz, 4.32 GHz, 6.48 GHz, and 8.64 GHz PPDU transmission, 1 ≤ N*CB* ≤ 4. For 2.16+2.16 GHz PPDU transmission, *NCB* = 1 for each channel. For 4.32+4.32 GHz PPDU transmission, N*CB* = 2 for each channel.

An EDMG STA shall support Golay sequences of length 128 (i.e., TRN\_BL equal to 128). Other lengths are optional and support is indicated in the STA’s EDMG Capabilities element.

The pairs of Golay complementary sequences (GAi64, GBi64), (Gai128, Gbi128), (Gai256, Gbi256), (Gai384, Gbi384), (Gai512, Gbi512), (Gai768, Gbi768), and (Gai1024, Gbi1024) are defined in subclause 30.10. These sequences shall be transmitted using rotated π/2-BPSK modulation.

Table 81 and Table 82 define the TRNi subfield that shall be used in the waveform transmitted with the *i th* transmit chain, where 1 ≤ i ≤ 8, for a given total number of transmit chains. The total number of transmit chains is indicated by value of the TXVECTOR or RXVECTOR parameter NUM\_TX\_CHAINS. In Table 81, the number of TRNibasic in one TRNi subfield is determined by the total number of transmit chains. In Table 82, the number of TRNibasic in one TRNi subfield is determined by the number of transmit chains per channel which is half of the total number of transmit chains.

**Table 81—TRN subfield definition for 2.16 GHz, 4.32 GHz, 6.48 GHz, 8.64 GHz channel bandwidth**

|  |  |  |
| --- | --- | --- |
| **Total number of** **transmit chains** | **Transmit chain** **number** | **TRN subfield definition** |
| 1, 2 | 1 | TRN1basic |
| 2 | TRN2basic |
| 3, 4 | 1 | [TRN1basic, TRN1basic] |
| 2 | [TRN2basic, TRN2basic] |
| 3 | [TRN3basic, -TRN3basic] |
| 4 | [TRN4basic, -TRN4basic] |
| 5, 6, 7, 8 | 1 | [TRN1basic, TRN1basic, TRN1basic, TRN1basic] |
| 2 | [TRN2basic, TRN2basic, TRN2basic, TRN2basic] |
| 3 | [TRN3basic, -TRN3basic, TRN3basic, -TRN3basic] |
| 4 | [TRN4basic, -TRN4basic, TRN4basic, -TRN4basic] |
| 5 | [TRN5basic, TRN5basic, -TRN5basic, -TRN5basic] |
| 6 | [TRN6basic, TRN6basic, -TRN6basic, -TRN6basic] |
| 7 | [TRN7basic, -TRN7basic, -TRN7basic, TRN7basic] |
| 8 | [TRN8basic, -TRN8basic, -TRN8basic, TRN8basic] |

**Table 82—TRN subfield definition for 2.16+2.16 GHz, 4.32+4.32 GHz channel bandwidth**

|  |  |  |
| --- | --- | --- |
| **Total number of** **transmit chains** | **Transmit chain** **number** | **TRN subfield definition** |
| 2,4 | 1 | TRN1basic |
| 2 | TRN2basic |
| 3 | TRN3basic |
| 4 | TRN4basic |
| 6,8 | 1 |  [TRN1basic, TRN1basic] |
| 2 | [TRN2basic, TRN2basic] |
| 3 |  [TRN3basic, -TRN3basic] |
| 4 |  [TRN4basic, -TRN4basic] |
| 5 | [TRN5basic, TRN5basic] |
| 6 | [TRN6basic, TRN6basic] |
| 7 |  [TRN7basic, -TRN7basic] |
| 8 |  [TRN8basic, -TRN8basic] |

**References:**

1. Draft P802.11ay\_D0.8

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Do you support to accept the text in 11-17-1601-00-00ay-Draft-Text-for-CA-TRN-Subfield for 11ay Draft text?