IEEE P802.11
Wireless LANs

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| PDT and CR for CID 2557 related to Stream Parser |
| Date: 2025-05-10 |
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**Abstract**

This submission proposes a resolution for CID 2557 received for TGbn D0.1, which is the baseline of this document. The stream parser clause was rewritten as suggested by the commenter.

**Revisions:**

* Rev 0: Initial version of the document.
* Rev 1: Header and footer are added.

***TGbn editor: The baseline for this document is P802.11bn D0.1.***

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 TGbn Draft. This introduction is not part of the adopted material.

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

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

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| **CID** | **Commenter** | **Clause** | **Page.line** | **Comment** | **Proposed Change** | **Resolution** |
| 2557 | Rui Cao | 38.3.16.2 | 197.37 | Current description of stream parser refers to 11ax and 11n for EQM and UEQM, separately. Additional restrictions or expansions are listed. This make it difficult to read and understand. | Suggest to rewrite Stream parser with unified text for both EQM and UEQM and accommodate all new updates. | **Revised**Agree with the commenter. The descriptions of the stream parsers for EQM and UEQM are unified. The whole subclause is rewritten accordingly. TGbn editor, please replace the text in 38.3.16.2 by the text proposed in this document. |

#### **38.3.16.2 Stream parser**

***TGbn editor: please replace the original text in 38.3.16.2 by the text proposed in this document.***

~~The coded bits after post-FEC padding for each user are parsed into the spatial streams allocated to the user.~~

~~If equal modulation is used for the user, the modulation order is the same across all the allocated streams, the operation described in 27.3.12.6 (Stream parser) shall be used. If unequal modulation is used for the user, the operation described in 19.3.11.8.2 (Stream parser) shall be used with the following restrictions and modifications:~~

1. $2\leq N\_{SS}\leq 4$ ~~,~~
2. $2\leq N\_{BPSCS}\left(i\_{SS}\right)\leq 12$~~, for~~ $i\_{SS}=1,2,…,N\_{SS}$~~,~~
3. ~~The number of encoders equals one,~~ $N\_{ES}=1$~~,~~
4. ~~The encoder type is LDPC.~~

After scrambling, coding, puncturing, and post-FEC padding, the coded bits of user *u* are processed in groups of $N\_{CBPS,u}$bits. Each of these groups is rearranged into $N\_{SS,u}$blocks for $N\_{SS,u}$ spatial streams, respectively, where spatial stream$m$ takes $N\_{BPSS,m,u}$ bits for$m=1,…, N\_{SS,u}$. This operation is referred to as *stream parsing* and is described in this subclause.

The description is given in terms of an SU transmission, where the user index $u$ is not present in the subscript of the variables. For MU transmissions, the parsing operations are carried out in the same way per user.

The number of bits assigned to a single axis (real or imaginary) of each constellation point in spatial stream $m$

is denoted by Equation (38-xx).

$s\_{m}=\left\{\begin{array}{c}max\left(1,\frac{N\_{BPSCS}}{2}\right), \&for equal modulation\\\frac{N\_{BPSCS,m}}{2}, \&for unequal modulation\end{array}\right.$ (38-xx)

The sum of these $s\_{m}$s over all $N\_{SS} $streams, $\sum\_{m=1}^{N\_{SS}}s\_{m}$, is denoted by $S$.

The consecutive encoded bits are first divided into groups, each of which consists of $N\_{CBPS}$ bits. The $N\_{CBPS}$ bits of each group are then assigned to $N\_{SS}$ spatial streams in a round robin fashion. In the assignment to spatial stream $m$, $s\_{m} $bits are assigned. Input bit $k$to spatial stream $m$ shall be bit $i$ of the group, where

$i=S·\left⌊\frac{k}{s\_{m}}\right⌋+\sum\_{n=1}^{m-1}s\_{n}+k·mod\left(s\_{m}\right)$. (38-yy)

For the first spatial stream $m=1$, the second term in Equation (38-yy) has a value of 0.

If unequal modulation is used for the user, the coded bits are output by an LDPC encoder, the number of spatial streams ranges $2\leq N\_{SS}\leq 4$, and the modulations of the spatial streams range from QPSK to 4096-QAM with $2\leq N\_{BPSCS,m}\leq 12$.