IEEE P802.11  
Wireless LANs

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| Comment Resolution SA1 – CID 7300, 7343 and 7353 | | | | |
| Date: 2022-05-02 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Niranjan Grandhe | NXP | 350 Holger Way, San Jose, CA |  | [niranjan.grandhe@nxp.com](mailto:niranjan.grandhe@nxp.com) |
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Abstract

This submission proposes the comment resolution of CIDs 7300, 7343, 7353; as part of SA1, changes are relative to Draft 4.1.

Revisions:

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 TGaz Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

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

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

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| **CID** | **P.L** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| **7300** | 245.8 | 27.3.18a.4 | Add figure for secure HE-LTF generation, Refer to figure27-32, 27-33 in 11ax Draft 8.0 | as in comment | **Revised**  TGaz editor make changes depicted in  [https://mentor.ieee.org/802.11/dcn/22/](https://mentor.ieee.org/802.11/dcn/22/11-22-0643-02-00az-comment-resolution-sa1-cid-7296-and-7336.docx)11-22-0695-02-00az-comment-resolution-sa1-cid-7300-7343and7353.docx |
| **7343** | 235.12 | 27.3.10 | Mathematical description of signals - is missing a descriptionof He Ranging NDPs, specifically with secure LTF | As in comment | **Revised**  mathematical description doesn’t apply for secure LTF. Correction to reference section 27.3.10 was made.  TGaz editor make changes depicted in  [https://mentor.ieee.org/802.11/dcn/22/](https://mentor.ieee.org/802.11/dcn/22/11-22-0643-02-00az-comment-resolution-sa1-cid-7296-and-7336.docx)11-22-0695-02-00az-comment-resolution-sa1-cid-7300-7343and7353.docx |
| **7353** | 247.1 | 27.3.18a.4 | "Insert zero power GI and apply windowing" - is the windowing the same as in other HE-LTF waveforms? | Clarify if the windowing is different or not | **Revised**  TGaz editor make changes depicted in  [https://mentor.ieee.org/802.11/dcn/22/](https://mentor.ieee.org/802.11/dcn/22/11-22-0643-02-00az-comment-resolution-sa1-cid-7296-and-7336.docx)11-22-0695-02-00az-comment-resolution-sa1-cid-7300-7343and7353.docx |

**Resolution:**

27.3.18a.4 Construction of secure HE-LTF

TGaz Editor: Change the following paragraphs on page 248 as follows

a) Sequence generation: Generate the randomized LTF sequence in frequency domain over the bandwidth indicated by CH\_BANDWIDTH as described in 27.3.18c (Generation of Randomized LTF Sequence).

b) A frequency domain window function 𝑤𝐹𝐷(𝑘) is applied to all the tones of the secure HE-LTF sequence. When the TXVECTOR parameter TX\_WINDOW\_FLAG is set to 0, the Rectangular window is used, where 𝑤𝐹𝐷(𝑘)=1 for all the tones in all channel bandwidths. When the TXVECTOR parameter TX\_WINDOW\_FLAG is set to 1, the flat top window is used; it is defined as: (#**5216**)

c) 𝐴𝐻𝐸−𝐿𝑇𝐹matrix mapping: Apply the 𝑃𝐻𝐸−𝐿𝑇𝐹 matrix to all tones of the secure HE-LTF sequence. (#**1342**)

d) Apply per spatial stream phase rotation: Generate the pseudorandom phase rotation for each spatial stream. Apply the pseudorandom phase rotation along with the deterministic phase rotation to the spatial streams as described in 27.3.18e (Pseudorandom and 3 deterministic per spatial stream phase rotations).

e)

f) There is no spatial mapping, the Q matrix is a block identity matrix.

g) IDFT: Compute the inverse discrete Fourier transform.

h) Insert zero power GI: Prepend values of zero of length indicated by the TXVECTOR parameter GI\_TYPE (#7353)

i) Analog and RF: Upconvert the resulting complex baseband waveform associated with each transmit chain to an RF signal according to the center frequency of the desired channel and transmit. Refer to 27.3.9 (Mathematical description of signals) and 27.3.11 (HE preamble) for details.

The generation of the time domain secure HELTF symbol per repetition for symbol k and tone index l is shown in Figure 27-46h (Generation of secure HE-LTF symbols per repetition in a HE Ranging NDP PPDU)



Figure 27-46h – Generation of secure HE-LTF symbols per repetition in a HE Ranging NDP PPDU