IEEE P802.11`
Wireless LANs

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| Remaining Comment resolutions for section 4 |
| Date: 2018-05-09 |
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Abstract

This submission proposes resolutions for the following CIDs:

* 12119, 11964.

Revisions:

* Rev 0: Initial version of the document.

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

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

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| **CID** | **Page** | **Comment** | **Proposed Change** | **Resolution** |
| 12119 | 37.00 | The 802.11ax amendment provides new capabilities/features that warrant a more explanative introduction then simply stating a list of the "new" phy/mac features and if the features are mandatory or optional. Therefore adding descriptive text as to what the new capabilities and features of a HE STA are and what the purpose and benefits of these capabilities and features are is warranted. Following the style of VHT in no excuse of not adding descriptive text. | Provide a useful and clear introduction to the new capabilities provided by 802.11ax features, including: 1) the benefits of the of capability (e.g. provides for MU access to lower overhead and reduce congestion in 802.11 BSSs), 2) the features of 802.11ax that will enable this capability (e.g. OFDMA or MU-MIMO), and 3) for capabilities that have multiple features supporting them what the expectation/use for the features that support the capability. |  Revised.TGax editor to adopt the proposed text changes in 18/959r0. |
| 11964 | 37.10 | The stated scope in the ax PAR of "at least one mode of operation capable of supporting at least four times improvement in the average throughput per station" still needs to be met. A description of such performance improvement should be added to this subclause. | As suggested. |  Revised.TGax editor to adopt the proposed text changes in 18/959r0. |

**Discussion:**

On CID#12119, while providing a comprehensive introduction on capabilities and benefits may be a good idea, given the many possible combination of features and operating environments, it is more practical and less controversial to provide a select high level description of feature benefits, in keeping with the style used in 4.3 describing HT and VHT STA features.

On CID#11964, meeting key PAR requirement is important and in section 4 both HT and VHT are described with statements on meeting PAR requirements (e.g., “throughput of 100Mb/s” for HT). For HE, given there have been several TGax simulation result submissions showing it is possible to meet the “four times improvement” PAR requirement in certain modes of operation under controlled environments, it is useful to state that the PAR requirement can be met, even in a limited fashion.

***Tech editor: add a new paragraph after the last paragraph of 4.3.14.a as follows:***

**4.3.14a High efficiency (HE) STA**

Among other benefits, different combinations of these HE features can reduce protocol overhead and increase aggregate network throughput (e.g., DL and UL OFDMA, DL MU MIMO), enhance peak link throughput (e.g, MCS 10, 11), enhance dense network efficiency (e.g., Spatial Reuse), and/or enhance power conservation (e.g., TWT). While in practice it is not easy to quantify or ensure these benefits due to the complexities of real-world dense environments, it can be shown that in certain modes of operations under controlled environments, combinations of these HE features can improve the average throughput per STA by more than four times in a BSS, compared to VHT.