IEEE P802.11  
Wireless LANs

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| Spec text for -RU-restriction-of-20MHz-operating-devices-in-OFDMA | | | | |
| Date: 2016-07-08 | | | | |
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Abstract

This submission proposes resolutions for RU restriction rule for 20MHz operating STAs related comment related to TGax D0.2 with the following CID:

* 854

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** | **Commenter** | **P.L** | **Comment** | **Proposed Change** | **Resolution** |
| 854 | Joonsuk Kim | 26.3.7.1 | Some of RUs are not usuable to STAs which operates with smaller bandwidth than OFDMA PPDU | We need to restrict some RU to operate for such STAs; I will submit a proposal with details | 11-16-0906-00-00ax-RU-restriction-of-20MHz-operating-devices-in-OFDMA |

**Discussion:** Presented in 11-16-0906-00-00ax-RU-restriction-of-20MHz-operating-devices-in-OFDMA

**TGax Editor: *Add the following new sub-clause 26.3.7.4***

**26.3.7.4 RU restriction rules when operating 20MHz**

A non-AP STA can operate with 20MHz, because either it is a 20MHz-only HE device (see 26.3.8), or it reduces operating channel width to 20MHz by ROM (see 25.8). When a 20MHz operating non-AP STAs is either a recipient of 40, 80, 80+80 or 160 MHz DL-OFDMA, or one of transmitters of 40, 80, 80+80 or 160 MHz UL-OFDMA, RU tone mapping in 20MHz is not aligned with 40, 80, 80+80 or 160 MHz RU tone mapping (see 26.3.7.1). Due to misalignment of these RU locations, some of these RUs may cause significant performance penalty or interference to neighbour RUs. To improve the throughput and interoperability, some RUs in 20MHz operating STAs are restricted to be used in 40, 80, 80+80 or 160 MHz OFDMA operation

AP shall not assign following RUs to 20 MHz operating STAs

* For 26-tone RUs, [Table 26-9 and 26-10]
  + RU5, 14 in 40 MHz DL/UL OFDMA PPDU
    - 2 of 26-tone RUs are restricted
  + RU5, 10, 14, 19, 24, 28, 33 in 80 MHz DL/UL OFDMA PPDU
    - 7 of 26-tone RUs are restricted
  + RU5, 10, 14, 19, 24, 28, 33 in lower 80 MHz and upper 80 MHz, in 80+80 or 160 MHz DL/UL OFDMA PPDU
    - 14 of 26-tone RUs are restricted
* For 52-tone RUs, [Table 26-9 and 26-10]
  + RU5, 12 in 80 MHz DL/UL OFDMA PPDU
    - 2 of 52-tone RUs are restricted
  + RU5, 12 in lower 80 MHz and upper 80 MHz, in 80+80 or 160 MHz DL/UL OFDMA PPDU
    - 4 of 52-tone RUs are restricted
* For 106-tone RUs, [Table 26-9 and 26-10]
  + RU3, 6 in 80MHz DL/UL OFDMA PPDU
    - 2 of 106-tone RUs are restricted
  + RU3, 6 in lower 80 MHz and upper 80 MHz, in 80+80 or 160 MHz DL/UL OFDMA PPDU
    - 4 of 106-tone RUs are restricted

Center 26-tone RUin primary 20 channel shall not be assigned to any STAs where 20MHz operating STAs are recipients of 40/80/160/80+80 OFDMA.

It is optional whether all 242-tone RUs of 20 MHz operating STAs to be supported in 40/80/160/80+80 MHz DL-OFDMA. If supported, there is no restriction on 242-tone RUs. 242-tone RUshall not be allocated to 20MHz operating STAs in 40/80/160/80+80 for UL-OFDMA