IEEE P802.11
Wireless LANs

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| IEEE 802.11 TGaxJuly 2016 San Diego PHY Ad Hoc Meeting Minutes |
| Date: 2016-07-25 |
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Abstract

TGax meeting minutes for the IEEE 802.11 San Diego PHY ad hoc session, July, 2016.

**IEEE 802.11 Task Group ax PHY Ad Hoc**

**July 2016 San Diego Meeting**

**Tuesdat, July 26th, 2016, AM2 TGax Session**

1. **Meeting called to order by Bo Sun (ZTE)**
	1. The agenda is contained in 11-16/0693r0 which is on the server.
2. **Administrative Items**
	1. Chair reminded the IEEE 802 and IEEE 802.11 Policy and Procedure.
	2. Chair also reminded to do attendance.
3. **Set and approve agenda**
4. **Presentations**

**4.1**

**16/0816 Comment Resolution for CID 2183**

**Daewon Lee (Newracom)**

**Discussions: None**

**SP#1:**

**Comment Resolution for CID 2183**

**SP Result: No Objection; SP passed.**

**4.2**

**16/0872 CR HE-SIG-A Part II,**

**Ross Jian Yu (Huawei)**

**Discussion:**

**Osama: the resolution 2123 does not response to the comments.**

**Ross: OK. I change it.**

CID: 1682, 1022, 1196, 1197, 1455, 1456, 1457, 226, 1678, 912, 1686, 1687, 1846, 2001, 2002, 2003, 1677, 783, 296, 356, 474, 524, 526, 540, 1007, 865, 913, 842, 843, 844, 845, 846, 910, 2006, 541, 2533, 2004, 2129, 2167, 2168, 2169, 2244, 2127, 2286, 2125, 2534, 2537, 2538, 2539, 2678, 2746, 2747, 2285, 2014, 2864, 2007, 2008, 2009, 2010, 2011, 2128, 2013, 2005, 2015, 2016, 2018, 2121, 2122, 2123, 2124, 2012.

**SP Result: No Objection; SP passed.**

**4.3**

**16/0893 11ax Extended Range PPDU, Bin Tian (Qualcomm)**

**Discussions:**

Q: is this feature mandatory or optional?

A: we can decide later.

**SP#1:**

**Do you agree to make the following changes to the spec D0.2**

**Replace the following text in Subclause 26.3.5 P82 L65**

***The HE extended range SU PPDU is 20 MHz and can only be transmitted with the <HE-MCS, NSS> tuples <MCS 0, 1>, <MCS 1, 1> and <MCS 2, 1>***

**by**

***The HE extended range SU PPDU only supports single 242-tone and 106-tone RU. The 242-tone RU can only be transmitted with the <HE-MCS, NSS> tuples <MCS 0, 1>, <MCS 1, 1> and <MCS 2, 1>. The 106-tone RU can only be transmitted with the <HE-MCS, NSS> tuples <MCS 0, 1>. The 106-tone RU location within the 20MHz tone plan is fixed as the right one.***

**SP Result: No Objection; SP passed.**

**SP#2:**

* **Do you agree to the spec text changes to D0.2 on Table 26-20 – Fields in the HE-SIG-A for an HE SU PPDU and HE Extended Range SU PPDU as shown in doc 11/16-0915r0?**

**SP Result: No Objection; SP passed.**

**4.4**

**16/0900 PHY Comment Resolution for CID 1052 and 2519, Bin Tian (Qualcomm)**

**SP Result: No Objection; SP passed.**

**4.5**

**16/0892r2 LDPC for 1024QAM,**

**Hongyuan Zhang (Marvell)**

**SP#1:**

**Do you agree to adopt the spec text change as shown in doc 11/16-0892r0?**

**SP Result: No Objection; SP passed.**

**4.6**

**16/0894 HE-LTF Capabilities, Hongyuan Zhang (Marvell)**

**SP#1:**

* **Do you agree that for DL-MUMIMO over the full BW, or for a HE-MU PPDU format sent to a single user, the mapping from NSTS, total to NHE-LTF is as in Table 21-13 (Number of VHT-LTFs required for different numbers of space-time streams) in clause 21.3.8.3.5 (VHT-LTF definition), i.e. the same as in 11ac?**

**SP Result: No Objection; SP passed.**

**SP#2:**

* **Do you agree that 1x HE-LTF is mandatory to transmit in UL-MUMIMO PPDUs over the full BW, for a STA that supports UL-MUMIMO?**

**SP Result: No Objection; SP passed.**

**SP#3:**

* **Do you agree with the followings?**
	+ **1x HE-LTF is disallowed in any DL-MUMIMO PPDU over the full BW.**

**SP Result: No Objection; SP passed.**

**SP#4:**

* **Do you agree to adopt the spec text changes as shown in doc 11/16-0895r0, which reflects Straw Polls 1~3?**

**SP Result: No Objection; SP passed.**

**Session Recessed**

**July 26th, 2016, Evening Session, TGax Session**

1. **Meeting called to order by Bo Sun (ZTE)**
	1. The agenda is contained in 11-16/0693r0 which is on the server.
2. **Administrative Items**
	1. Chair reminded the IEEE 802 and IEEE 802.11 Policy and Procedure.
	2. Chair also reminded to do attendance.
3. **Set and approve agenda**
4. **Presentations**

**4.1**

**11-16/0896 11ax Beamformee Capabilities, Hongyuan Zhang (Marvell)**

**Discussions:**

**SP1**

**Do you agree to adopt the spec text changes as shown in doc 11/16-0897r1?**

**SP Result: No Objection; SP passed.**

**4.2**

**11-16/0898 BW Field in HE-MU Format, Hongyuan Zhang (Marvell)**

**Discussions:**

**SP1**

* **Do you agree to adopt the spec text changes as shown in doc 11/16-0899r0?**

**SP Result: No Objection; SP passed.**

**4.3**

**11-16/0903 Gamma phase rotation for HE PPDU, Yujin Noh (Newracom)**

**SP Result: No Objection; SP passed.**

**4.4**

 **11-16/0937r5 1ax Comment Resolutions for Clauses 26.3.2-26.3.9.3-26.3.9.4-26.3.9.5-26.3.10.2- 26.3.10.13, Rui Cao (Marvell)**

**Straw poll will run in 0937r6.**

**4.5**

**11-16/0906 RU restriction on 20MHz operating STAs, Joonsuk Kim (Apple)**

**SP1**

* Do you support to add following rules for 20MHz operating STAs?
	+ AP shall not assign following RUs to 20 MHz operating STAs
		- For 26-tone RUs, [1]
			* RU26 #5, 14 in 40 MHz DL/UL OFDMA PPDU
				+ 2 RU26s are restricted
			* RU26# 5, 10, 14, 19, 24, 28, 33 in 80 MHz DL/UL OFDMA PPDU
				+ 7 RU26s are restricted
			* RU26# 5, 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 RU26s are restricted
		- For 52-tone RUs, [1]
			* RU52 #5, 12 in 80 MHz DL/UL OFDMA PPDU
				+ 2 RU52s are restricted
			* RU52 #5, 12 in lower 80 MHz and upper 80 MHz, in 80+80 or 160 MHz DL/UL OFDMA PPDU
				+ 4 RU52s are restricted
		- For 106-tone RUs, [1]
			* RU106 #3, 6 in 80MHz DL/UL OFDMA PPDU
				+ 2 RU106s are restricted
			* RU106 #3, 6 in lower 80 MHz and upper 80 MHz, in 80+80 or 160 MHz DL/UL OFDMA PPDU
				+ 4 RU106s are restricted
	+ Center RU26 in primary 20 channel shall not be assigned to any STAs where 20MHz operating STAs are recipients of 40/80/160/80+80 OFDMA
	+ [1] Table 26-9 and 26-10 of 16/0024r1

**SP Result: No Objection; SP passed.**

**SP2**

* **Do you support to add following rules for 20MHz operating STAs?**
	+ **It is optional whether all RU242s of 20 MHz operating STAs to be supported in 40/80/160/80+80 MHz DL-OFDMA**
		- **If supported, there is no restriction on RU242s**
	+ **RU242 shall not be allocated to 20MHz operating STAs in 40/80/160/80+80 for UL-OFDMA**

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| **Function**  | **Format**  | **Sub-format**  | **20MHz operating Non-AP STA**  |
| **In 2.4 GHz**  | **40MHz DL-OFDMA**  | **RU242 tone mapping**  | **O**  |
| **In 5 GHz**  | **40 & 80 MHz DL-OFDMA**  | **RU242 tone mapping**  | **O**  |
| **In 5 GHz**  | **80+80 or 160 MHz DL-OFDMA**  | **RU242 tone mapping**  | **O**  |

**SP Result: No Objection; SP passed.**

**SP3**

* **Do you agree to adopt the spec text change as shown in doc 11/16-0908r0?**

**SP Result: No Objection; SP passed.**

**4.6**

**11-16/0910 Minimum Occupied Bandwidth, Ron Porat (Broadcom)**

**Discussions:**

**SP1:**

* **Do you support the following text to section 26.3.7.1?**

**In a HE MU PPDU transmission, at least Nx4x26 tones (contiguous or non-contiguous), where N is the number of 20MHz channels’ legacy preambles present, shall be occupied throughout the signaled BW.**

**SP Result: No Objection; SP passed.**

**Session Recessed**

**July 27th, 2016, PM1 TGax Session**

1. **Meeting called to order by Bo Sun (ZTE)**
	1. The agenda is contained in 11-16/0693r0 which is on the server.
2. **Administrative Items**
	1. Chair reminded the IEEE 802 and IEEE 802.11 Policy and Procedure.
	2. Chair also reminded to do attendance.
3. **Set and approve agenda**
4. **Presentations**

**4.1**

**11-16/0937r6 11ax Comment Resolutions for Clauses 26.3.2-26.3.9.3-26.3.9.4-26.3.9.5-26.3.10.2- 26.3.10.13, Rui Cao (Marvell)**

**Discussion:**

**Youhan:** The sentence of notation should be an index to the corresponding section.

**Rui:** I will update the document to r7 and then run the straw poll.

 **4.2**

 **11-16/1021r1 Further change on the proposed resolutions on CID 2032, 2549, 2133, 2548, 1009, Ross Yu Jian (Huawei)**

**Discussion:**

**Ross:** I will upload the r2 version for the changes.

**SP1:**

**Do you agree to use the resolutions for CID 2032, 2549, 2133, 2548, and 1009 in 1021r2?**

**SP Result: No Objection; SP passed.**

**4.3**

**11-16/0914r1 Bit field finalization for HE-SIG-A, Lochan Verma (Qualcomm)**

**Discussions:**

**SP1:**

* **Do you agree to adopt the spec. text changes proposed in “11-16-0915-02-00ax”?**

**SP Result: No Objection; SP passed.**

**4.4**

**11-16/0920r2 11ax D0.1 Comment Resolution for CID 1659, 493, 494**

**Xiaogang Chen (Intel)**

**Discussions:**

**Hongyuan:** There is no beam-change for HE-MU.

Xiaogang: I will modify the paragraph.

**SP1:**

**Do you agree to accept the proposed comment resolutions?**

* **26.3.3 of TGax Draft 0.1 with the CID 1659**
* **26.3.14 with CID 493**
* **26.3.15 with CID 494**

**SP Result: No Objection; SP passed.**

**4.5**

**11-16/0922r2 PHY CR 1024 QAM, Sriram Venkaeswaran (Broadcom Limited)**

**SP1:**

**Do you agree to accept the** proposed resolutions for the following comments related to TGax D0.1: 1782, 2082, 2083?

**SP Result: No Objection; SP passed.**

**4.6**

**11-16/0923r0 Comment Resolutions on DCM TBDs, Sriram Venkaeswaran (Broadcom Limited)**

**Discussions:**

**Bo:** The comments need to be modified to give 11ax editor clear instructions.

Sriram: I will modify and upload the new version.

**4.7**

**11-16/0937r7 11ax Comment Resolutions for Clauses 26.3.2-26.3.9.3-26.3.9.4-26.3.9.5-26.3.10.2- 26.3.10.13, Rui Cao (Marvell)**

**SP1:**

**Do you agree to accept the** proposed resolutions for the following comments related to TGax D0.1 in **0937r7**?

**SP Result: No Objection; SP passed.**

**4.8**

**11-16/0928r1 Proposed resolutions to comments on clause 26.3.9.8, Kaushik Josiam (Samsung)**

**Bo:** I suggest you update the documents and present the rest in the future session.

**Session Recessed**