IEEE P802.11  
Wireless LANs

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| Minutes of TGax January 2018 ad hoc meeting (MAC-MU-SR) | | | | |
| Date: 2018-01-14 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Yasuhiko Inoue | NTT | 1-1 Hikaro-no-oka, Yokosuka, Kanagawa 239-0847 Japan | ++81-46-859-5097 | inoue.yasuhiko@lab.ntt.co.jp |
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Abstract

This document contains minutes of TGax January 2018 ad hoc meeting (MAC-MU-SR).

Rev. 0: Initial version.

# Wednesday, January 10th, 2018, 10:00 – 18:00 TGax ad hoc – Day 1

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 10:00 (local time).**
   1. Introduction of the chairperson Osama Aboul-Magd (Huawei Technologies).
   2. The TGax secretary, Yasuhiko Inoue (NTT), agreed to take minutes for the ad hoc meeting.
2. **IEEE 802 and 802.11 IPR Policy and Procedure**
   1. Chair have read the 5 slides of IEEE 802 Policies and Procedures.
      1. Participants have a duty to inform the IEEE
      2. Ways to inform IEEE
      3. Other guidelines for IEEE WG meetings
      4. Patent-related information
      5. Participation in IEEE 802 Meetings
   2. Chair asked if there is any potentially essential patent that people are aware of.
      1. No potentially essential patent reported.
3. **General flow of the ad hoc meeting**
   1. Proposed
      1. Wednesday (10:00 – 18:00)
         1. Comment Resolution
         2. Recess
      2. Thursday (9:00 – 18:00)
         1. Comment Resolution
         2. Recess
      3. Friday (9:00 – 17:00)
         1. Comment Resolution
         2. Adjourn
   2. Approval of the agenda
      1. Chair asked if there is any comment. 🡪 No commnet.
4. **Agenda for the 1st day of the TGax ad hoc meeting**
   1. Proposed agenda
      1. Call meeting to order
      2. Patent policy, etc.
      3. Announcements
      4. Call for submissions
      5. Set agenda
      6. Presentations and Comment Resolution
      7. Recess
   2. Schedule of the day
      1. 10:00 Call the meeting to order
      2. 10:00 – 10:05 Administrative Items (IEEE 802 and 802.11 IPR Policy and Procedure, etc.)
      3. 10:05 – 10:20 Call for submission
      4. 10:20 – 12:00 Presentation
      5. 12:00 – 13:00 Break
      6. 13:00 – 15:00 Comment Resolution
      7. 15:00 – 15:30 Break
      8. 15:30 – 18:00 Comment Resolution
      9. 18:00 Recess
   3. Approval of the agenda
      1. Chair asked if there is any item to add to the agenda. 🡪 No item to add to the agenda.
      2. Chair asked if there is any objection to approve the agenda. 🡪 No objection.
   4. The agenda was approved.
5. **Attendance**
   1. Chair asked the attendees to sign up the attendance sheet.
6. **Comment Resolutions**
   1. **Po-Kai Huang (Intel) presented “11ax D2.0 MAC Comment Resolution for NAV Part I,” based on the submission 11-17-1874-02.**
      1. Summary
         1. Resolutions for the following CIDs related to NAV are proposed.
            1. Relevant CIDs: 12357, 12358, 12359, 12360, 12361, 11134, 11787, 12434, 13056, 12736, 12782, 12783, 13297, 13043, 13149, 13299, 13298.
         2. CID 12361 pending from teleconference is discuused.
      2. Discussion
         1. Some members discussed the modification to the proposed text in 9.2.5.7.
      3. Next Step
         1. Po-Kai to update the document and put r3 of this document to the server..
   2. **Yongho Seok (MediaTek) presented “LB230 CR of Multi-TID Capability Indication,” based on the submission 11-18-0105-00.**
      1. Summary
         1. Resolutions for the following comments on Multi-TID Capability Indication and related text are proposed.
            1. Relevant CIDs: 13873, 11011, 11858, 12734, 12867, 13862, 12379, 12170, 12254, 12889 (10 CIDs)
      2. Discussion
         1. Some members prefer to have the bit to indicate support for transmission of Multi-TID Aggregation and support for reception of Multi-TID Aggregation separately.
         2. Chair mentioned that it is necessary to see if the submitter of the comment is satisfied and suggested offline discussion.
      3. Next Step
         1. Deferred for offline discussion with the commenter.
   3. **Abhishek Patil (Qualcomm) presented “CIDs related to Multiple BSSID topic – Part 2,” based on the submission 11-17-1857-00.**
      1. Summary
         1. Resolutions to the following comments on Multiple BSSID and modifications to the related text are proposed.
            1. Relevant CIDs: 11000, 13806, 12392, 11016, 13189, 13190, 13191, 13192, 13193, 11031.
      2. Discussion
         1. There was a comments to suggest minor modification to the text in 27.5.3.3.
         2. Abhi to update the document.
      3. **Straw Poll: Do you agree to resolutions to CIDs; 11000, 13806, 12392, 11016, 13189, 13190, 13191, 13192, 13193, 11031 in doc 11-17/1857r1?**
         1. **Result: Accepted with no objection.**
      4. Next Step
         1. The document 17/1857r1 is ready for motion.
   4. **Abhishek Patil (Qualcomm) presented “Resolution for CIDs in 9.4.2.37,” based on the submission 11-17-1850-00.**
      1. Summary
         1. Resolutions for the comments on subclause 9.4.2.37 (Neighbor Report element) and medications to the texts are proposed.
            1. Relevant CIDs: 11365, 11986, 11366 (3 CIDs).
      2. Discussion
         1. CID #11365: Minor changes to the texts for High Throughput bit and Very High Throughput bit are suggested.
         2. Abhi to update the document.
      3. **Straw Poll: Do you accept resolutions to CIDs 11365, 11986, 11366 in doc 11-17/1850r1?**
         1. **Result: Accepted with no objection**
      4. Next Step
         1. The document 17/1850r1 is ready for motion.
   5. **Abhishek Patil (Qualcomm) presented “Resolution for CIDs in 9.4.2.245,” based on the submission 11-18-0066-00.**
      1. Summary
         1. Resolutions for the comments on subclause 9.4.2.245 (ESS Report element) and medications to the texts are proposed.
         2. Relevant CIDs: 11551, 11707, 13182.
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you accept resolutions to CIDs 11551, 11707, 13182 in doc 11-18/0066r1?**
         1. **Result: Accepted with no objection**
      4. Next Step
         1. The document 18/0066r1 is ready for motion.
   6. **Abhishek Patil (Qualcomm) presented “Resolution for CID 13142,” based on the submission 11-17-1858-00.**
      1. Summary
         1. Resolutions for CID 13142 on Max Multi BSSID Indicator and modifications to the text for the relevant subclauses are proposed.
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you accept resolutions to CIDs 13142 in doc 11-17/1858r0?**
         1. **Result: Accepted with no objection**
      4. Next Step
         1. The document 17/1858r0 is ready for motion.
   7. **Abhishek Patil (Qualcomm) presented “CIDs related to Multiple BSSID topic – Part 3,” based on the submission 11-17-1861-00.**
      1. Summary
         1. Resolutions for the following comments on Multiple BSSID and medications to the texts are proposed.
            1. Relevant CIDs: 13261, 11753, 13143, 12222, 11339, 11036, 13780, 13794, 12175, 13012.
      2. Discussion
         1. People discussed about the proposed text “associated with a non-transmitting BSSID”.
         2. A member asked for a clarification of the proposed text related to the UORA.
         3. Another member discussed the setting of MIB value dot11MultipleBSSIDActivated in an HE STA.
      3. Next Step
         1. After discussion, Abhi plans to update the document including two more items.
7. **Recess for lunch @ 12:08 until 13:15.**
8. **Meeting reconvened @ 13:15.**
9. **Comment Resolutions**
   1. **Laurent Cariou (Intel) presented “CR for OBSS\_PD SR,” based on the submission 11-17-1852-02.**
      1. Summary
         1. .Resolutions for the following CIDs on OBSS\_PD SR and modification to the spec are proposed.
            1. Relevant CIDs: 12081, 11769, 11770, 12017, 11239, 11771, 13151, 13831, 14091, 14276, 13062, 11240, 12609, 12018, 13929, 11556, 14114, 12188, 14213, 13152, 11257, 11773, 11811, 13153, 14277, 13154, 13931, 13930, 12541, 11937, 12189, 14115, 14214, 12080, 11741, 12019, 14116, 14117, 14278, 11238, 11736, 11775, 14279, 11774, 12021, 13063, 14281, 11776, 11777, 11772, 14282, 11778, 11939, 13932, 11779, 13064, 13933, 12022, 11938, 14283, 11557, 12247, 11828, 11831, 13855, 11829, 11832, 14284, 11558, 11559, 14118, 11780, 14285, 11942, 11940, 11781, 13934, 14286, 13702, 13935, 14287, 12249, 12540, 13155, 11812, 13156, 12070, 13065, 14216, 11941, 13420, 11813, 12250, 14288, 14289, 12069, 14119, 12542, 14280, 11256, 11470, 11548, 11549, 11550, 12232, 12606, 12655, 14226, 14227, 12429
10. **Recess @ 15:00 until 15:30.**
11. **Meeting reconvened @ 15:30.**
12. **Comment Resolutions**
    1. **Laurent Cariou (Intel) continued his presentation of “CR for OBSS\_PD SR,” based on the submission 11-17-1852-02.**
       1. Discussion
          1. . CIDs marked red need more discussion.
          2. Some CIDs need discussion with PHY experts.
       2. Next Step
          1. Chair suggested offline discussion for the CIDs marked red.
    2. **Yongho Seok (MediaTek) revisited his presentation of “LB230 CR of Multi-TID Capability Indication,” based on the submission 11-18-0105-00.**
       1. Summary
          1. Yongho proposed some soltions.
             1. Option #1: a non-AP STA does not provide the number of TIDs minus 1 of QoS Data frames that the non-AP STA can aggregate in a multi-TID A-MPDU.
             2. Option #2: to define two Multi-TID Aggregation Support fields. First Multi-TID Aggregation Support field (3 bits) indicates the number of TIDs of QoS Data frames that a STA can receives in a multi-TID A-MPDU. Second Multi-TID Aggregation Support field indicates (3 bits) the number of TIDs of QoS Data frames that a STA can transmit in a multi-TID A-MPDU.
       2. Discussion
          1. . Chair suggested a straw poll.
       3. **Straw Poll: Which option in doc 11-18-0105 do you prefer?**
          1. **Result: Option #1/Option #2/Abstan = 6/8/3.**
       4. Next Step
          1. This document will be revisited later.
    3. **Abhishek Patil (Qualcomm) presented “CIDs related to Multiple BSSID topic – Part 3,” based on the submission 11-17-1861-01.**
       1. Summary
          1. The document 11-17-1861-01 is revisited after modification by Abhi.
             1. Revised resolution for 13143 to cover AID12=0 (random access for associated STA) case.
             2. Added resolution for CID 12175
       2. Discussion
          1. No discussion.
       3. **Straw Poll: Do you agree with the resolutions to CIDs 13261, 11753, 13143, 12222, 11339, 11036, 13780, 13794, 12175, 13012 in doc 11-17/1861r1?**
          1. **Result: Accepted with no objection**
       4. Next Step
          1. The document 17/1861r1 is ready for motion.
    4. **Abhishek Patil (Qualcomm) presented “Resolution for CID 11374,” based on the submission 11-18-0068-00.**
       1. Summary
          1. . Resolution to the CID 11374 on BSS Color Information subfield in HE Operation element and related text are proposed.
          2. Proposed to make BSS Color information element.
       2. Discussion
          1. People discussed the proposed new information element.
          2. The proposal was agreed.
       3. **Straw Poll: Do you agree with the resolutions to CIDs 11374 in doc 11-18/0068r0?**
          1. **Result: Accepted with no objection**
       4. Next Step
          1. The document 18/0086r0 is ready for motion.
    5. **Oghenekome Oteri (InterDigital) presented “Comment Resolutions on Clause 28.3.15 (SU-MIMO and DL MU-MIMO beamforming),” based on the submission 11-18-0079-01.**
       1. Summary
          1. Resolutions for the following CIDs on clause 28.3.15 and proposed changes to the spec text are proposed.
             1. Relevant CIDs: 13379, 13413, 13414 .
       2. Discussion
       3. There was a comment to the resolution for CID 13379 to consider TDLS case and the CID was deferred.
       4. No commnets for the resolutions to the other two CIDs.
       5. **Straw Poll: Do you agree with the resolutions to CIDs 13413, and 13414 in doc 11-17/0079r1?**
          1. **Result: Accepted with no objection**
       6. Next Step
          1. The document will be revisited after offline discussion on the CID 13379..
    6. **Oghenekome Oteri (InterDigital) presented “Comment Resolutions on Clause 9.4.1.63 D2.0 (HE Compressed Beamforming Report field),” based on the submission 11-18-0080-01.**
       1. Summary
          1. . Resolutions for the following CIDs on clause 9.4.1.63 (HE Compressed Beamforming Report field) and proposed changes to the spec text are proposed.
             1. Relevant CIDs: 11121, 12683, 12684, 12690, 12701, 12702, 12746, 12769, 12771, 12772, 13696, and 13697.
       2. Discussion
          1. There was a discussion about the resolution to CID #13697 and the resolution was changed from ACCEPTED to REJECTED.
          2. People discussed CID 12702.
       3. Next Step
          1. CIDs written in black are agreed.
          2. There will be further discussion on the CID 12702 and 13697 (marked red).
13. **AOB**
    1. None.
14. **Recess**
    1. TGax ad hoc meeting is in recess at 17:50 until 9:00 AM tomorrow (Local Time).
15. **List of Attendees of day 1**

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|  | **Name** | **Affiliation** |
| 1 | Osama Aboul-Magd | Huawei Technologies |
| 2 | Alfred Asterjadhi | Qualcomm |
| 3 | Stephane Baron | Canon |
| 4 | Laurent Cariou | Intel |
| 5 | William Carney | Sony |
| 6 | George Cherian | Qualcomm |
| 7 | Liwen Chu | Marvell Semiconductors |
| 8 | Matthew Fischer | Broadcom |
| 9 | Ming Gan | Huawei |
| 10 | Chittabrata Ghosh | Intel |
| 11 | Po-Kai Huang | Intel |
| 12 | Frank Hsu | MediaTek |
| 13 | Chunyu Hu | Broadcom |
| 14 | Yasuhiko Inoue | NTT |
| 15 | Jeongki Kim | LG Electronics |
| 16 | Jarkko Knect | Apple |
| 17 | Zhou Lan | Broadcom |
| 18 | Guoqing Li | Apple |
| 19 | Yunbo Li | Huawei Technologies |
| 20 | Kaying Lv | ZTE |
| 21 | Sai Shankar Nandagparan | Cypress |
| 22 | Patrice Nezou | Canon |
| 23 | Oghenekome Oteri | InterDigital Communications |
| 24 | Minyoung Park | Samsung |
| 25 | Abhishek Patil | Qualcomm |
| 26 | Al Petrick | InterDigital Communications |
| 27 | Kiseon Ryu | LG Electronics |
| 28 | Yongho Seok | MediaTek |
| 29 | Robert Stacy | Intel |
| 30 | Bo Sun | ZTE |
| 31 | Lochan Verma | Qualcomm |
| 32 | Chao-Chun Wang | MediaTek |
| 33 | Huizhao Wang | Quantenna Communications |

# Thursday, January 11th, 2018, 9:00 – 18:00 TGax ad hoc – Day 2

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 09:00 (Local Time).**
   1. Introduction of the chairperson Osama Aboul-Magd (Huawei Technologies) and the secretary Yasuhiko Inoue (NTT).
2. **Reminder**
   1. Chair reminded that we are still operating under IEEE 802 and IEEE 802.11 Policy and Procedure.
   2. Chair asked people to state name and affiliation when addressing for the first time in the session.
   3. Chair also asked people to signed up the attendace sheet. It is just for the minutes and is not affecting the voting right.
3. **Agenda Setting**
   1. Proposed Agenda
      1. Call meeting to order
      2. Patent policy, etc.
      3. Announcements
      4. Call for submissions
      5. Set agenda
      6. Presentations and Comment Resolution
      7. Recess
   2. Schedule for the day
      1. 9:00 Call the meeting to order
      2. 9:00 – 9:05 Administrative Itemss (IEEE 802 and 802.11 IPR Policy and Procedure, Agenda Setting, etc.)
      3. 9:05 – 10:30 Comment Resolution
      4. 10:30 – 10:45 Break
      5. 10:45 – 12:00 Comment Resolution
      6. 12:00 – 13:00 Lunch
      7. 13:00 – 15:00 Comment Resolution
      8. 15:00 – 15:30 Break
      9. 15:30 – 18:00 Comment Resolution
      10. 18:00 Recess
   3. Approval of the agenda
      1. Chair asked if there is any objection to approve the agenda. 🡪 No objection.
      2. The agenda was approved.
4. **Comment Resolutions**
   1. **Jarkko Knect (Apple) presented “OMI Comment Resolutions,” based on the submission 11-18-0035-02.**
      1. Summary
         1. Resolutions for comments of TGax Draft 2.0 with the following CIDs are proposed.
            1. CIDs: 11378, 11683, 11685, 11686, 11997, 11999, 12028, 12185, 12186, 12220, 12417, 12807, 12808, 12838, 12839, 12840, 12842, 12981, 13038, 13039, 13170, 13757, 13812, 13928, 14135, 14136, 14137, 14331, 14332, 14347 (30 CIDs).
      2. Discussion
         1. CID #14331, 14332, 14347: Some people requested additional discussion for these CIDs.
         2. There were some edits on the proposed text reflecting the results of discussions.
      3. **Straw Poll: Do you agree with the resolutions to CIDs 11378, 11683, 11685, 11686, 11997, 11999, 12028, 12185, 12186, 12220, 12417, 12807, 12808, 12838, 12839, 12840, 12842, 12981, 13038, 13039, 13170, 13757, 13812, 13928, 14135, 14136, 14137, 14331, 14332, 14347 in doc 11-18/0035r3?**
         1. **Result: No objection to the CIDs written in black**
      4. Next Step
         1. CIDs 14331, 14332 and 14347 related to UL MU Disable bit in OM Control field need more discussion and re-assigned to another member.
   2. **Ming Gan (Huawei Technologies) presented “LB230 CR on CIDs 12575, 11149 and 13675,” based on the submission 11-18-0098-01.**
      1. Summary
         1. Resolutions for comments of TGax Draft 2.0 with the following CIDs are proposed.
            1. CIDs: 12757, 11149, and 13675 (3 CIDs).
      2. Discussion
         1. No discussion except minor editorial comment.
      3. **Straw Poll: Do you accept the resolutions to CIDs 12757, 11149, and 13675 in doc 11-18/0098r2?**
         1. **Result: Accepted with no objection.**
      4. Next Step
         1. The document 11-18-0098-02 is ready for motion.
   3. **Ming Gan (Huawei Technologies) presented “LB230 CR on Fragmentation – Part 1,” based on the submission 11-18-0099-00.**
      1. Summary
         1. Resolutions for comments of TGax Draft 2.0 with the following CIDs are proposed.
            1. CIDs: 12463 11078 12012 13160 11079 12007 11800 11080 11803 12819 13242 11804 12467 13163 13243 12464 13101 11082 13890 13891 11805 12013 12465 13244 13245 13246 13247 13248 11083 13049 11678 (31 CIDs).
      2. Discussion
         1. CID #12463: Use of terms “MPDU”, “A-MPDU” and “S-MPDU” was discussed. Need more discussion to reach consensus.
         2. CID #11078: There was an objection to accept the comment.
         3. CIDs #13160, 12007, 11800, 12819: These comments relate to the text which other members are working on. Need discussion with those people.
      3. Next Step
         1. This document will be revisited later.
5. **Recess @ 10:30 for 15 minutes.**
6. **Meeting recovened @ 10:45**
7. **Comment Resolutions**
   1. **George Cherian (Qualcomm) presented “CRs from subclause 27.4.4,” based on the submission 11-18-0027-00.**
      1. Summary
         1. Resolutions for comments of TGax Draft 2.0 with the following CIDs are proposed.
            1. CIDs: 11092, 11740, 11757, 11758, 11759, 11760, 11761, 11762, 11763, 11810,

12143, 12486, 12487, 12488, 12489, 12490, 12630, 12631, 12826, 12827, 12828, 12829, 12831, 12832, 12887, 12888, 12889, 12891, 12892, 12893, 12894, 12895, 12896, 12897, 12898, 12899, 12900, 12902, 12903, 12904, 12905, 12906, 12907, 12908, 12909, 12910, 12911, 13517, 13518, 13519, 13520 (51 CIDs).

* + 1. Discussion
       1. There were many comments definition of such as EoF-MPDU.
       2. The presenter agreed to have more offline discussions.
    2. Next Step
       1. The document will be revisited during next week.

1. **Recess for Lunch**

**Lunch Break**

1. **Meeting reconvened @ 13:00.**
2. **Comment Resolutions**
   1. **Po-Kai Huang (Intel) presented “11ax D2.0 MAC Comment Resolution for NAV Part II,” based on the submission 11-17-1878-00.**
      1. Summary
         1. Resolutions for comments of TGax Draft 2.0 with the following CIDs are proposed.
            1. CIDs: 11076, 11077, 11260, 11949, 12079, 12165, 11916, 13333, 12229, 12284, 12461, 13060, 13061, 13657, 13658, 13720, 13825, 14105, 14106, 14107, 14108, 13076 (22 CIDs).
      2. Discussion
         1. CID #1107: The resolution for this CID was changed from “ACCEPT” to “REJECT” after discussion.
         2. CID #14107: A member asked for additional discussion on this CID, however, some other members are not happy to do that since we have rejected this comment three times.
         3. CID #12079 and 12461: These CIDs relate to PowerManagement bit setting and need more discussion to get to consensus..
      3. **Straw Poll: Do you accept the resolutions to CIDs 11076, 11077, 11260, 11949, 12079, 12165, 11916, 13333, 12229, 12284, 12461, 13060, 13061, 13657, 13658, 13720, 13825, 14105, 14106, 14107, 14108, 13076 in doc 11-17/1878r0?**
         1. **Result: CIDs written in black are accepted with no objection.**
      4. Next Step
         1. CIDs written in black are ready for motion.
   2. **Frank Hsu (MediaTek) presented “11ax D2.0 MAC Comment Resolution for HE Link Adapation,” based on the submission 11-18-0081-00.**
      1. Summary
         1. Resolutions for comments of TGax Draft 2.0 with the following CIDs on HE Link Adaptation are proposed.
            1. CIDs: 11457, 11544, 11743, 12436, 12550, 12551, 13172, 13173, 13174, 13175, 13759, 13813, 13860, 14144, 14145, 14146, 14147, 14148, 14149 (19 CIDs).
      2. Discussion
         1. CID #13174: (BW setting in HLA Control subfield): Applicability od this coding to STAs other than HE was discussed.
         2. CID #13860: People discussed validity of requirement on less than 10% FER. Some people assume that there will be some estimated value, however, there is no consensus.
      3. Next Step
         1. The document 11-18-0081 to be revisited.
   3. **Oghenekome Oteri (InterDigital) presented “Comment Resolutions on Clause 28.3.15 (SU-MIMO and DL MU-MIMO beamforming),” based on the submission 11-18-0079-01.**
      1. Summary
         1. The document 11-18-0079-01 was revisited.
         2. Kome explained the document highlighting the changes.
            1. Relevant CID: 13379.
      2. Discussion
         1. The proposed text for the TDLS case was updated.
      3. **Straw Poll: Do you agree with the resolutions to CIDs 13379 in doc 11-17/0079r1?**
         1. **Result: Accepted with no objection**
      4. Next Step
         1. The document 11-18-0079 is ready for motion..
   4. **Oghenekome Oteri (InterDigital) presented “Comment Resolutions on Clause 9.4.1.63 D2.0 (HE Compressed Beamforming Report field),” based on the submission 11-18-0080-01.**
      1. Summary
         1. The document 11-18-0079-01 was revisited.
         2. Kome explained the document highlighting the changes.
            1. Relevant CIDs: 12683, 12702, and 13697.
      2. Discussion
         1. The resolutions for the above CIDs are REJECTED.
         2. No discussion.
      3. **Straw Poll: Do you agree with the resolutions to CIDs 12702, 13697 in doc 11-17/0080r1?**
         1. **Result: Accepted with no objection**
      4. Next Step
         1. The document 11-18-0080 is ready for motion..
   5. **Abhishek Patil (Qualcomm) presented “CIDs related to Random Access – Part 1,” based on the submission 11-17-1849-01.**
      1. Summary
         1. Resolutions for the following CIDs on OFDMA Random Access and changes to the spec text are proposed.
            1. Relevant CIDs: 11033, 13196, 11992, 14208, 12224, 14210, 13198, 11001, 11364, 12178, 11731, 11732, 12179, 11045, 13796, 11379 (16 CIDs).
      2. Discussion
         1. CID #11001: People discussed about the Trigger Dependent User Info field which did not get to a consensus.
         2. The proposed text in 27.5.5.2 was updated based on the comment from a member.
         3. People also discussed about the CID 12179..
3. **Recess @ 15:00**

**Break**

1. **Meeting reconvened @ 15:30.**
2. **Comment Resolutions**
   1. **Abhishek Patil (Qualcomm) continued presentation of “CIDs related to Random Access – Part 1,” based on the submission 11-17-1849-01.**
      1. Discussion
         1. CID #12179: Reached consensus by the offline discussion during the break.
      2. **Straw Poll: Do you agree with the resolutions to CIDs 11033, 13196, 11992, 14208, 12224, 14210, 13198, 11001, 11364, 12178, 11731, 11732, 12179, 11045, 13796, 11379 in doc 11-17/1849r2?**
         1. **Result: No objection to the resolution of the CIDs written in black**
      3. Next Step
         1. CID 11001 generated much discussion related to RU indexing.
         2. To be recisited later.
   2. **Abhishek Patil (Qualcomm) presented “CID 11002,” based on the submission 11-17-1860-00.**
      1. Summary
         1. Resolution for the CID #11002 on random access procedure and changes to the spec text are proposed.
      2. Discussion
         1. There was counter proposal to the proposed text.
         2. Chair suggested offline discussion.
      3. Next Step
         1. This submission will be revisited later.
   3. **Abhishek Patil (Qualcomm) presented “CIDs related to Multiple BSSID topic – Part 1,” based on the submission 11-17-1847-00.**
      1. Summary
         1. Resolutions for the following CIDs on Multiple BSSID topic and changes to the spec text are proposed.
            1. Relevant CIDs: 11023, 11876, 13141, 11355, 11028, 11877, 11029, 13140, and 11878.
      2. Discussion
         1. A member asked for offline discussion on CIDs 11023, 11876 and 13141. Those CIDs are deferred..
      3. **Straw Poll: Do you agree with the resolutions to CIDs 11023, 11876, 13141, 11355, 11028, 11877, 11029, 13140, 11878 in doc 11-17/1847r0?**
         1. **Result: No objection to the resolution of the CIDs written in black**
      4. Next Step
         1. CID 11023, 11876 and 13141 will be revisited later.
         2. Other CIDs are ready for motion.
   4. **Abhishek Patil (Qualcomm) presented “Resolution for CID 11742,” based on the submission 11-17-1859-01.**
      1. Summary
         1. Resolution for the CID #11742 on Multiple BSSID feature and changes to the spec text are proposed.
      2. Discussion
         1. People discussed the relation between Multiple BSSID and Co-Located BSSIDs.
         2. A member provided some background of Multiple BSSID and Co-Located BSSIDs.
         3. A member believes that Co-Located BSSID should be contiguous while some other members do not agree with this idea.
         4. This submission generated lots of discussion and the chair suggested to take it offline..
      3. Next Step
         1. This submission will be revisited later.
   5. **Po-Kai Huang (Intel) presented “Resolution for CID 11742,” based on the submission 11-18-0153-00.**
      1. Summary
         1. Po-Kai provides counter proposal for the resolution to CID 11742.
         2. Proposed to change Max BSSID Indicator in HE Operation element to Intra-BSS Set Indicator.
         3. The HE Operation Paramerter field is also changed to contain Existence of Intra-BSS Set Indicator bit.
      2. Discussion
         1. A member commented that this is not Multiple BSSID feature. 🡪 The intension is to reuse the element.
         2. .This proposal generated lots of discussion and the chair suggested offline discussion..
      3. Next Step
         1. This submission will be revisited later.
         2. The anticipation is that Po-Kai and Abhi to come up with a merged proposal.
   6. **Liwen Chu (Marvell Semiconductors) presented “11ax D2.0 Comment Resolution 27.5.3.5,” based on the submission 11-17-1837-01.**
      1. Summary
         1. Resolutions for the following CIDs on clause 27.5.3.5 (UL MU CS mechanism) and changes to the spec text are proposed.
            1. Relevant CIDs: 11327, 13725, 14261, 14263, 14264.
         2. Liwen updated the spec text based on the comment received during the conference call.
      2. Discussion
         1. A member asked for clarification of the circumstance that a STA does not do carrier sense.
         2. People discussed setting of CS Required subfield in various situations.
         3. CID #11327: Two options are proposed by the author as a potential solution (page 3 and 4 of the 11-17-1837-01) and a straw poll was taken with one more option which is the author’s original proposal.
         4. **Straw Poll: Which option do you prefer for CS Required seeting in NDP Feedback Report Poll Trigger?**
            1. **Result: Option #1/Option #2/Option #3 = 2/11/11.**
         5. CID #13725: The author proposed a change in the spec text which potentially has a issue. Some members support this change.
3. **AOB**
   1. None.
4. **Recess**
   1. Meeting is in recess @ 18:00 until 9:00 AM tomorrow morning.
5. **List of Attendees – following people were on the call.**

|  |  |  |
| --- | --- | --- |
|  | **Name** | **Affiliation** |
| 1 | Osama Aboul-Magd | Huawei Technologies |
| 2 | Alfred Asterjadhi | Qualcomm |
| 3 | Stephane Baron | Canon |
| 4 | Laurent Cariou | Intel |
| 5 | William Carney | Sony |
| 6 | George Cherian | Qualcomm |
| 7 | Liwen Chu | Marvell Semiconductors |
| 8 | Matthew Fischer | Broadcom Ltd. |
| 9 | Ming Gan | Huawei |
| 10 | Chittabrata Ghosh | Intel |
| 11 | Po-Kai Huang | Intel |
| 12 | Frank Hsu | MediaTek |
| 13 | Chunyu Hu | Broadcom Ltd. |
| 14 | Yasuhiko Inoue | NTT |
| 15 | Jeongki Kim | LG Electronics |
| 16 | Jarkko Knect | Apple |
| 17 | Zhou Lan | Broadcom Ltd. |
| 18 | Guoqing Li | Apple |
| 19 | Yunbo Li | Huawei Technologies |
| 20 | Kaying Lv | ZTE |
| 21 | Yuichi Morioka | Sony |
| 22 | Sai Shankar Nandagparan | Cypress |
| 23 | Patrice Nezou | Canon |
| 24 | Oghenekome Oteri | InterDigital Communications |
| 25 | Minyoung Park | Samsung |
| 26 | Abhishek Patil | Qualcomm |
| 27 | Al Petrick | InterDigital Communications |
| 28 | Kiseon Ryu | LG Electronics |
| 29 | Yongho Seok | MediaTek |
| 30 | Robert Stacy | Intel |
| 31 | Dorothy Stanley | HP Enterprise |
| 32 | Bo Sun | ZTE |
| 33 | Lochan Verma | Qualcomm |
| 34 | Chao-Chun Wang | MediaTek |
| 35 | Huizhao Wang | Quantenna Communications |
| 36 | James Wang | MediaTek |
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# Friday, January 12th, 2018, 9:00 – 17:00

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 09:00 (Local Time).**
2. **Reminder**
   1. Chair reminded that we are still operating under IEEE 802 and IEEE 802.11 Policy and Procedure.
3. **Agenda Setting**
   1. Proposed Agenda
      1. Call meeting to order
      2. Patent policy, etc.
      3. Announcements
      4. Call for submissions
      5. Set agenda
      6. Presentations and Comment Resolution
      7. Adjourn
   2. Meeting schedule
      1. 09:00 – 09:05 Call meeting to order and IPR reminder
      2. 09:05 – 10:30 Comment resolution
      3. 10-30 – 10:45 Break
      4. 10:45 – 12:00 Comment Resolution
      5. 12:00 – 1:00 Lunch
      6. 13:00 – 15:00 comment resolution
      7. 15:00 – 15:30 Break
      8. 15:30 – 17:00 comment resolution
   3. Approval of the agenda
      1. Chair asked if there is any objection to approve the agenda. 🡪 No objection.
      2. The agenda was approved.
4. **Progress Review**
   1. 11-18-0035 (by Jarkko Kneckt): three out of 30 comments (14331, 14332 and 14347 ) have been transferred to Zhou Lan. No objection for the resolutions to the other CIDs.
   2. 11-18-0098 (by Ming Gan): No objection for the resolutions to three CIDs (12757, 11149, and 13675).
   3. 11-18-0090 (by Ming Gan): Need more time for discussions on some CIDs. To be revisited next week.
   4. 11-18-0027 (by George Cherian): Need more time for discussions on some CIDs. To be revisited next week.
   5. 11-17-1878 (by Po-Kai Huang): Two out of 22 CIDs need more discussion. No objection for the resolutions to the other CIDs.
   6. 11-18-0081 (by Frank Hsu): Need more time for discussions on some CIDs. To be revisited next week.
   7. 11-17-1849 (by Abhishek Patil): One out of 16 CIDs needs more discussion. No objection to the other 15 CIDs.
   8. 11-17-1860 (by Abhishek Patil): Need more time for discussions on some CIDs. To be revisited next week.
   9. 11-17-1847 (by Abhishek Patil): three out of nine CIDs need more discussion. No objection to the other 6 CIDs.
   10. 11-17-1859 (Abhishek Patil): A resolution for the CID 11742 was proposed. There was a counter proposal by Po-Kai Huang (18/0153). No agreement to the resolutions.
   11. 11-17-1837 (by Liwen Chu): 3 options were discussed as possible resolution to CID 11327. For the CID 13725, Zhou Lan to come back to the group.
5. **Call for submissions**
   1. Chair showed the spreadsheet attached to the agenda file (18/0007r4)..
6. **Attendance**
   1. Chair asked the attendees to sign up the attendance sheet just for the purpose of minutes.
7. **Comment Resolutions**
   1. **Presentation by Liwen Chu (Marvell Semiconductors): “11ax D2.0 Comment Resolution 27.5.3.2.4 10.22.2.7,” based on the submission 11-18-0074-01.**
      1. Summary
         1. Resolutions to the following CIDs on clause 27.5.3.2.4 (AP access procedures for UL MU operation) and clause 10.22.2.7 (Multiple frame transmission in an EDCA TXOP), and modifications to related spec text are proposed.
            1. Relevant CIDs: 11049, 11050, 12446, 12447, 13916.
      2. Discussion
         1. People discussed an issue with baseline 10.22.2.2 (Back-off procedure) point #c. 🡪 need to raise it with Revmd project.
         2. The group prefers to discuss it in March allowing people to check if there are any implications.
      3. **Straw Poll: Do you agree to resolutions to CIDs; 11049, 11050, 12446, 12447, 13916. in doc 11-18/0074r1?**
         1. **Result: No objection to the proposed resolution.**
      4. Next Step
         1. The issue with baseline 10.22.2.2 (Back-off procedure) point #c will be discussed during the March 2018 meeting.
   2. **Presentation by Laurent Cariou (Intel): “CR for OBSS\_PD SR,” based on the submission 11-17-1852-02.**
      1. Summary
         1. Laurent presented updates from the previous version discussed on Wednesday.
      2. Discussion
         1. A member has minor comment. The document will be updated before the motion.
      3. **Straw Poll: Do you agree to resolutions to CIDs; 12081, 11769, 11770, 12017, 11239, 11771, 13151, 13831, 14091, 14276, 13062, 11240, 12609, 12018, 13929, 11556, 14114, 12188, 14213, 13152, 11257, 11773, 11811, 13153, 14277, 13154, 13931, 13930, 12541, 11937, 12189, 14115, 14214, 12080, 11741, 12019, 14116, 14117, 14278, 11238, 11736, 11775, 14279, 11774, 12021, 13063, 14281, 11776, 11777, 11772, 14282, 11778, 11939, 13932, 11779, 13064, 13933, 12022, 11938, 14283, 11557, 12247, 11828, 11831, 13855, 11829, 11832, 14284, 11558, 11559, 14118, 11780, 14285, 11942, 11940, 11781, 13934, 14286, 13702, 13935, 14287, 12249, 12540, 13155, 11812, 13156, 12070, 13065, 14216, 11941, 13420, 11813, 12250, 14288, 14289, 12069, 14119, 12542, 14280, 11256, 11470, 11548, 11549, 11550, 12232, 12429, 12606, 12655, 14226, 14227, 12429 in doc 11-17/1852r4?**
         1. **Result: No objection to the CIDs written in black.**
      4. Next Step
         1. CIDs #14289 and #14119 need more discussion with PHY experts.
   3. **Presentation by Laurent Cariou (Intel): “CR for MU EDCA parameters,” based on the submission 11-17-1828-01.**
      1. Summary
         1. Laurent presented updates from the previous version.
      2. Discussion
         1. Some people are concerned using the same EDCA Update Count for EDCA Parameter Set and MU EDCA Parameter Set.
8. **Break @ 10:30**

Break

1. **Meeting reconvened 10:45**
2. **Comment Resolutions**
   1. **Presentation of the submission 11-17-1828-01 by Laurent Cariou (Intel) on “CR for MU EDCA parameters,” continued.**
      1. Discussion
         1. Laurent had offline discussion with people concerned by his proposal and come to an agreement.
         2. CID #13090: Spec text was updated based on the discussion during the presentation. The resolution for this CID was changed from REJECTED to REVISED.
         3. CID #12393: This CID generated lots of discussion and the chair suggested offline discussion.
      2. **Straw Poll: Do you agree to resolutions to CIDs; 11153, 11798, 12041, 12085, 12089, 12303, 12428, 12462, 13037, 13075, 13090, 13887 in doc 11-17/1828r1?**
         1. **Result: No objection to the CIDs written in black.**
      3. Next Step
         1. CIDs #12303 was deferred since it needs more offline discussion.
   2. **Presentation by Alfred Asterjadhi (Qualcomm): “Comment resolutions for 10.22.2.4,” based on the submission 11-18-0009-00.**
      1. Summary
         1. Resolutions for two CIDs (#11154 and #12445) are proposed.
      2. Discussion
         1. Some questions for clarifications are discussed which do not affect the contents of this document.
         2. Chair asked if there is any objection to approve this document. 🡪 No objection.
      3. **Straw Poll: Do you agree to resolutions to CIDs 11154, 12445 in doc 11-18/0009r0?**
         1. **Result: No objection.**
      4. Next Step
         1. Document 11-18/0009r0 is ready for motion.
   3. **Presentation by Alfred Asterjadhi (Qualcomm): “Comment resolutions for 26.8.36,” based on the submission 11-18-0010-00.**
      1. Summary
         1. Resolution for one CID (#12046) on TWT element is proposed.
      2. Discussion
         1. Some discussions for clarification which do not affect the contents of the document.
         2. Chair asked if there is any objection to approve this document. 🡪 No objection.
      3. **Straw Poll: Do you agree to resolutions to CIDs 12046 in doc 11-18/0010r0?**
         1. **Result: No objection.**
      4. Next Step
         1. The document is ready for motion.
   4. **Presentation by Alfred Asterjadhi (Qualcomm): “Comment resolutions for 27.5.3.4,” based on the submission 11-18-0011-00.**
      1. Summary
         1. Resolutions for CIDs on clause 27.5.3.4 (A-MPDU contents in an HE TB PPDU) are proposed.
            1. Relevant CIDs: 11159, 11160, 11321, 11322, 12144, 13283, 13744, 13918, 13919 (9 CIDs)
      2. Discussion
         1. CID #11160: People discussed the definition of TID Aggregation Limit. 🡪 Need more discussin to define it and the CID was deferred.
         2. CID #11322: Clarification for resolution and proposed spec text was discussed.
         3. CID # 13744: A member asked for discussion on TID Aggregation Limit of Trigger frame.
3. **Lunch Break @ 12:00**

Lunch Break

1. **Meeting reconvened @ 13:00**
2. **Comment Resolutions**
   1. **Presentation of the submission 11-18-0011-00 by Alfred Asterjadhi (Qualcomm) continued.**
      1. Discussion
         1. CID # 13744: Another member mentioned there is similar restriction in the sounding procedure.
         2. CID #13918: The commenter is not happy with the resolution and asked for offline discussion.
      2. **Straw Poll: Do you agree to resolutions to CIDs; 11159, 11160, 11321, 11322, 12144, 13283, 13744, 13918, 13919 (9 CIDs) in doc 11-18/0011r1?**
         1. **Result: No objection to resolutions to CIDs written in black.**
      3. Next Step
         1. Two deferred CIDs to be revisited later.
   2. **Presentation by Ming Gan (Huawei Technologies): “LB230 CR on Fragmentation-Part 1,” based on the submission 11-18-0099-02.**
      1. Summary
         1. The document 11-18-0099 was revisited.
         2. Ming went through the document highlighting the changes.
      2. Discussion
         1. CID #13049: Some people are concerned by the proposed text. Modification to the spec text was suggested.
      3. Next Step
   3. **Presentation by Larent Cariou (Intel): “CR for Opportunistic power save,” based on the submission 11-18-0090-00.**
      1. Summary
         1. Resolutions for the following CIDs on clause 27.14.3 (Opportunistic Power Save) and modifications to the spec text are proposed.
            1. Relevant CIDs: 11046, 11047, 12034, 13513, 13724, 13186, 13187.
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you agree to resolutions to CIDs; 11046, 11047, 12034, 13513, 13724, 13186, 13187 in doc 11-17/0090r0?**
         1. **Result: No objection.**
      4. Next Step
         1. The document 11-18-0090-00 is ready for motion.
   4. **Presentation by Jeongki Kim (LG Electronics): “CR on UORA Power Saving,” based on the submission 11-18-0063-00.**
      1. Summary
         1. Resolutions for the following CIDs on UORA Power Saving and modifications to the spec text are proposed.
            1. Relevant CIDs: 12000, 12050, 12176, 13071, 13524, 13852.
      2. Discussion
         1. CID #12000: A member mentioned that current text is not clear enough. CID #12000 is deferred.
         2. No comment for the rest of the resolutions.
      3. **Straw Poll: Do you agree to resolutions to CIDs 12000, 12050, 12176, 13071, 13524, 13852 in doc 11-18/0063r1?**
         1. **Result: Accepted with no objection for the CIDs written in black.**
      4. Next Step
         1. CID 12000 to be revisited.
         2. The resolution to CID 12000 is changed to “Revised” with deletion of the sentence identified by the commenter.
   5. **Presentation by Yongho Seok (MediaTek): “LB230 CR of Multi-TID Capability Indication,” based on the submission 11-18-0105-02.**
      1. Summary
         1. Yongho has made modifications to the spec text based on the result of straw poll and offline discussion.
      2. Discussion
         1. A member asked for further update to the text in the tabe.
      3. Next Step
      4. Yongho to upload rev 3 of the document.
   6. **Presentation by Abhishek Patil (Qualcomm): “Resolution for CIDs in 9.3.1.23,” based on the submission 11-18-0065-02.**
      1. Summary
         1. Resolutions for the following CIDs on clause 9.3.1.23 (Trigger frame format) and changes to the spec text are proposed.
            1. Relevant CIDs: 11118, 14206, 11003, 11371, 13694, 13861, 12374, 12719, 11004, 13330, 13695, 11978, 12375, 13331, 12164, 12227, 13862, 11917.
      2. Discussion
         1. Some minor edits to the proposed spec text were suggested.
      3. **Straw Poll: Do you agree to resolutions to CIDs 11118, 14206, 11003, 11371, 13694, 13861, 12374, 12719, 11004, 13330, 13695, 11978, 12375, 13331, 12164, 12227, 13862, 11917 in doc 11-18/0065r1?**
         1. **Result: Accepted with no objection.**
      4. Next Step
         1. The document 11-18-0065-02 is ready for motion.
   7. **Presentation by Jeongki Kim (LG Electronics): “CR on UORA Power Saving,” based on the submission 11-18-0063-01.**
      1. Summary
         1. The document 11-18-0063 CR on UORA Power Save was revisited.
            1. Relevant CID: 12000.
         2. Joengki has updated the document based on the comment received during the last presentation.
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you agree to resolutions to CID 12000 in doc 11-18/0063r1?**
         1. **Result: Accepted with no objection.**
      4. Next Step
         1. The document 11-18-0063-01 is ready for motion.
   8. **Presentation by Alfred Asterjadhi (Qualcomm): “Comment resolutions for 27.5.3.4,” based on the submission 11-18-0011-01.**
      1. Summary
         1. Alfed updated the resolution and related spec text on CIDs 11160 and 13911.
      2. Discussion
         1. CID 11160 is okay.
         2. A member asked for further discussion on CID 13911.
      3. Next Step
   9. **Presentation by Alfred Asterjadhi (Qualcomm): “Comment resolutions for 27.15.3,” based on the submission 11-18-0013-00.**
      1. Summary
         1. Resolutions for the following CIDs on clause 27.15.3 (MCS, NSS, BW and DCM selection) and changes to the related spec text are proposed.
            1. Relevant CIDs: 12534, 12535, 12536, 12537, 12653, 12657, 13949 (7 CIDs).
      2. Discussion
         1. No discussion.
      3. **Straw Poll: Do you agree to resolutions to CID 12534, 12535, 12536, 12537, 12653, 12657, 13949 (7 CIDs) in doc 11-18/0013r0?**
         1. **Result: Accepted with no objection.**
      4. Next Step
         1. The document 11-18-0013-00 is ready for motion.
   10. **Presentation by Alfred Asterjadhi (Qualcomm): “Comment resolutions for 27.15.4,” based on the submission 11-18-0014-00.**
       1. Summary
          1. Resolutions for the following CIDs on clause 27.15.4 (Rate selection constraints for HE STAs) and changes to the related spec text are proposed.
          2. Relevant CIDs: 11262, 11693 (2 CIDs).
       2. Discussion
          1. CID #11693: A member asked for the rationale for the resolution.
          2. A member commented that the last part of this document is about the specification of the 802.11ac and he is not sure if we should change it. 🡪 The group agreed to make changes on that part as well.
       3. **Straw Poll: Do you agree to resolutions to CID 11262 and 11693 in doc 11-18/0014r0?**
          1. **Result: Accepted with no objection.**
       4. Next Step
          1. The document 11-18-0014-00 is ready for motion.
3. **AoB**
   1. 4 minutes left. No business to conduct in 4 minutes.
4. **Adjourn**
   1. **TGax ad hoc January 2018 adjourned @ 17:00 (Local Time)**
5. **List of attendees**

|  |  |  |
| --- | --- | --- |
|  | **Name** | **Affiliation** |
| 1 | Osama Aboul-Magd | Huawei Technologies |
| 2 | Alfred Asterjadhi | Qualcomm |
| 3 | Stephane Baron | Canon |
| 4 | Laurent Cariou | Intel |
| 5 | George Cherian | Qualcomm |
| 6 | Liwen Chu | Marvell Semiconductors |
| 7 | Vinko Erceg | Broadcom |
| 8 | Matthew Fischer | Broadcom |
| 9 | Ming Gan | Huawei |
| 10 | Chittabrata Ghosh | Intel |
| 11 | Po-Kai Huang | Intel |
| 12 | Frank Hsu | MediaTek |
| 14 | Yasuhiko Inoue | NTT |
| 15 | Jeongki Kim | LG Electronics |
| 16 | Jarkko Knect | Apple |
| 17 | Zhou Lan | Broadcom |
| 18 | Wookbong Lee | Samsung |
| 19 | Guoqing Li | Apple |
| 20 | Yunbo Li | Huawei Technologies |
| 21 | Kaying Lv | ZTE |
| 22 | Patrice Nezou | Canon |
| 23 | Oghenekome Oteri | InterDigital Communications |
| 24 | Abhishek Patil | Qualcomm |
| 25 | Al Petrick | InterDigital Communications |
| 26 | Kiseon Ryu | LG Electronics |
| 27 | Yongho Seok | MediaTek |
| 28 | Chao-Chun Wang | MediaTek |
| 29 | Huizhao Wang | Quantenna Communications |
| 30 | James Wang | MediaTek |