IEEE P802.11  
Wireless LANs

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| TGax Teleconference Minutes from August to September, 2016 | | | | |
| Date: 2016-08-18 | | | | |
| Author(s): | | | | |
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|  |  |  |  |  |

Abstract

This document contains minutes of TGax teleconference from August to September, 2016.

Rev 0: Minutes from TGax teleconference on August 4th , 11th and 18th, 2016 included.

# Teleconference on Thursday, August 4th, 2016, 20:00 – 22:00 (ET)

1. Meeting called to order by Osama Aboul-Magd (Huawei Technologies) @ 20:03 (ET).
2. Agenda Setting
   1. Proposed Agenda
      1. Call the meeting to order
      2. IEEE 802 and 802.11 IPR Policy and Procedure
      3. Annoucement
      4. Attendance (Please send an e.mail to Yasuhiko Inoue (inoue.yasuhiko@lab.ntt.co.jp) and/or Osama Aboul-Magd (osama.aboulmagd@huawei.com))
      5. Presentation
         1. [11-16-0962-04](https://mentor.ieee.org/802.11/dcn/16/11-16-0962-04-00ax-edca-rules-8211-follow-up-1.pptx), “EDCA rules – follow up 1,” Jing Ma (NICT)
         2. [11-16-0963-03](https://mentor.ieee.org/802.11/dcn/16/11-16-0963-03-00ax-edca-rules-8211-follow-up-2.pptx), “EDCA rules – follow up 2,” Jing Ma (NICT)
         3. [11-16-0964-01](https://mentor.ieee.org/802.11/dcn/16/11-16-0964-01-00ax-considerations-on-mac-phy-interactions-during-sr-operations.pptx), “Considerations on MAC-PHY interactions during SR operations,” Jing Ma (NICT)
         4. [11-16-0960-01](https://mentor.ieee.org/802.11/dcn/16/11-16-0960-01-00ax-ap-access-procedure-for-ul-mu-operation.pptx), “AP access procedure for UL MU operation,” Jinsoo Ahn (Yonsei Univ.)
         5. [11-16-0890-01](https://mentor.ieee.org/802.11/dcn/16/11-16-0890-01-00ax-comment-resolution-on-nav-setting-of-single-and-multiple-protection-and-control-response.docx), “11ax D0.1 Comment Resolution for NAV Setting of Single and Multiple Protection and Control Response,” Po-Kai Huang (Intel)
      6. AOB
      7. Adjourn
   2. Approval of the agenda
      1. Chair asked if there is any discussion on the agenda.
      2. The agenda was approved.
3. IEEE 802 and 802.11 IPR Policy and Procedure
   1. Chair mentioned that we are operating under the IEEE 802 and 802.11 Policy and Procedure.
   2. Relevant documents
      1. IEEE Patent Policy - <http://standards.ieee.org/board/pat/pat-slideset.ppt>
      2. Patent FAQ - <http://standards.ieee.org/board/pat/faq.pdf>
      3. LoA Form - <http://standards.ieee.org/board/pat/loa.pdf>
      4. Affiliation FAQ - <http://standards.ieee.org/faqs/affiliationFAQ.html>
      5. Anti-Trust FAQ - <http://standards.ieee.org/resources/antitrust-guidelines.pdf>
      6. Ethics - <http://www.ieee.org/portal/cms_docs/about/CoE_poster.pdf>
      7. IEEE 802.11 Working Group Operartions Manual - <https://mentor.ieee.org/802.11/dcn/14/11-14-0629-14-0000-802-11-operations-manual.docx>
   3. Chair asked if there is any potentially essential patent that people are aware of.
      1. No potentially essential patent reported.
4. Announcement
   1. Chair asked the attendees to state name and affiliation when speaking for the first tme.
5. Attendance
   1. Chair asked the attendees to send an email to Yasu ([inoue.yasuhiko@lab.ntt.co.jp](mailto:inoue.yasuhiko@lab.ntt.co.jp)) and/or Osama ([osama.aboulmagd@huawei.com](mailto:osama.aboulmagd@huawei.com)) to record attendance.
6. Presentations
   1. **Jing Ma (NICT) presented “EDCA rules – follow up 1,” based on the submission 11-16-0962-04.**
      1. Summary:
         1. The access category for the Trigger frame is discussed.
            1. Option 1: The same AC as the data solicited by the Trigger frame.
            2. Option 2: The highest AC is used for the Trigger frame.
      2. Discussion:
         1. C: This is internal process and the point is how to enforce this rule.
         2. C: According to current base standard, the AP can use own EDCA parameters.
         3. C: Need simulation result to choose one option.
      3. Next Step:
         1. The presenter will prepare for additional material for discussion during the September F2F.
   2. **Jing Ma (NICT) presented “EDCA rules – follow up 2,” based on the submission 11-16-963-03.**
      1. Summary:
         1. Discussed how to use different set of EDCA parameters at the AP.
            1. Option 1: AP is allowed to choose EDCA parameters to raise its priority to access channel.
            2. Option 2: AP broadcasts EDCA parameters to constrain associated STAs from accessing channel for a certain period.
            3. Option 3: both option 1 and option 2.
      2. Discussion:
         1. C: All options are already allowed in the base standard.
         2. C: There is related submission to use two sets of EDCA parameters (16/998r1). Not sure whether it has been already presented or not.
         3. C: The WMM spec recommends the AP to use the same set of EDCA parameters. 🡪 It is specification of the Wi-Fi Alliance, not the IEEE spec.
      3. Next Step:
         1. The presenter to check the 16/998r1.
   3. **Jing Ma (NICT) presented “Considerations on MAC-PHY interactions   
      during SR operations,” based on the submission 11-16-0964-01.**
      1. Summary:
         1. Adjustment of the backoff counter during the spatial reuse operation discussed.
         2. Interaction between MAC and PHY layer is proposed for spatial reuse.
         3. Proposed spec text contained in 16/1025r1.
      2. Discussion:
         1. C: The backoff procedure in this document is exactly the same as specified in the base standard.
         2. C: Offline work suggested for the clarification text in page 7.
         3. C: Overlap with 16/920 which was adopted during the July F2F. Suggested changes should be based on the new text. Offline work suggested.
         4. C: Correspond
         5. C: TBD is not the resolution.
         6. C: BSS COLOR was introduced by the 802.11ah. Need to check if there is related spec in the service primitives.
      3. Next Step:
         1. The presenter will work offline with the authors of the related submissions.
   4. **Jinsoo Ahn (Yonsei Univ.) presented “AP access procedure for UL MU operation,” based on the submission 11-16-0960-01.**
      1. Summary:
         1. Priority control for the Trigger frame is discussed. Five options are presented.
         2. Winning AC based method is not so hard to implement but UL MU cannot be performed if there are no DL data in AP.
         3. Last option provides a opportunistic scheduling between DL and UL MU but it requires additional virtual EDCAF for UL MU
      2. Discussion:
         1. C: This is already covered by the motion by Jing Ma that passed during the May meeting.
      3. Next Step:
         1. The presenter to work offline with Jing Ma.
   5. **Po-Kai Huang (Intel) presented “11ax D0.1 Comment Resolution for NAV Setting of Single and Multiple Protection and Control Response,” based on the submission 11-16-0890-01.**
      1. Summary:
         1. Resolutions for comments in clause 9.2.5.2 and 9.2.5.7 of TGax Draft 0.1 with the following CIDs:
            1. CIDs: 2579, 1203, 795, 610, 2408, 2375, 2184, 1263, 1264, 2409, 2410, and 2411.
      2. Discussion:
         1. C: There was a discussion about applicable IFS within the frame sequence.
         2. C: There was a suggestion for the resolution of CID #2409.
         3. C: There was a request to double check the resolution for CID #2411.
      3. Next Step:
         1. Po-Kai to update the document.
7. AOB
   1. We are out of time.
8. Adjourn
   1. Meeting adjourned at 22:02 (ET).
9. List of Attendees

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| --- | --- | --- |
|  | **Name** | **Affiliation** |
| 1 | Osama Aboul-Magd | Huawei Technologies |
| 2 | Tomo Adachi | Toshiba |
| 3 | Jinsoo Ahn | Yonsei Univ. |
| 4 | Alfred Asterjadhi | Qualcomm |
| 5 | David Bagby | Calypso Ventures |
| 6 | Rui Cao | Marvell |
| 7 | Hanseul Hong | Yonsei Univ. |
| 8 | Po-Kai Huang | Intel |
| 9 | Yasu Inoue | NTT |
| 10 | Jarkko Kineckt | Apple |
| 11 | Geonjun Ko | Wilus Institute |
| 12 | Sang Eun Lee | Cypress |
| 13 | Jing Ma | NICT |
| 14 | Narendar Madhavan | Toshiba |
| 15 | Kome Oteri | InterDigital |
| 16 | Graham Smith | SR Technologies |
| 17 | John Son | Wilus Insititute |
| 18 | Huizao Wang | Quantenna |
| 19 | Xiaofei Wang | InterDigital |
| 20 | Ross Jian Yu | Huawei Technologiees |
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# Teleconference on Thursday, August 11th, 2016, 10:00 – 12:00 (ET)

1. Meeting called to order by Osama Aboul-Magd (Huawei Technologies) @ 10:03 (ET).
2. Agenda
   1. Proposed Agenda
      1. Call the meeting to order
      2. IEEE 802 and 802.11 IPR Policy and Procedure
      3. Annoucement
      4. Attendance (Please send an e.mail to Yasuhiko Inoue (inoue.yasuhiko@lab.ntt.co.jp) and/or Osama Aboul-Magd (osama.aboulmagd@huawei.com))
      5. Presentation
         1. [11-16-0885-02](https://mentor.ieee.org/802.11/dcn/16/11-16-0885-02-00ax-comment-resolution-on-ul-mu-cs-nav-considerstion.docx), “11ax D0.1 Comment Resolution for UL MU CS NAV,” Po-Kai Huang (Intel)
         2. [11-16-0886-02](https://mentor.ieee.org/802.11/dcn/16/11-16-0886-02-00ax-comment-resolution-for-some-ul-mu-cs-tbd.docx), “11ax D0.1 Comment Resolution for Some UL MU CS TBD,” Po-Kai Huang (Intel)
         3. [11-16-0887-00](https://mentor.ieee.org/802.11/dcn/16/11-16-0887-00-00ax-spec-text-for-mu-rts-restriction-on-he-mu-ppdu.docx), “11ax D0.1 Spec Texts for MU-RTS HE MU PPDU Restriction,” Po-Kai Huang (Intel)
         4. [11-16-0864-03](https://mentor.ieee.org/802.11/dcn/16/11-16-0864-03-00ax-d0-1-comment-resolution-on-clause-6.docx), “Comment Resolutions on Clause 6 & 8 comments,” Yasuhiko Inoue (NTT)
         5. [11-16-1028-00](https://mentor.ieee.org/802.11/dcn/16/11-16-1028-00-00ax-cids-for-section-25-4-ba-variants.docx), “CIDs for Section 25.4/25.4.1 Selection of BlockAck and BlockAckReq variants,” George Cherian (Qualcomm)
      6. AOB
      7. Adjourn
   2. Approval of the agenda
      1. Chair asked if there is any discussion on the agenda.
      2. The agenda was approved.
3. IEEE 802 and 802.11 IPR Policy and Procedure
   1. Chair mentioned that we are operating under the IEEE 802 and 802.11 Policy and Procedure.
   2. Relevant documents
      1. IEEE Patent Policy - <http://standards.ieee.org/board/pat/pat-slideset.ppt>
      2. Patent FAQ - <http://standards.ieee.org/board/pat/faq.pdf>
      3. LoA Form - <http://standards.ieee.org/board/pat/loa.pdf>
      4. Affiliation FAQ - <http://standards.ieee.org/faqs/affiliationFAQ.html>
      5. Anti-Trust FAQ - <http://standards.ieee.org/resources/antitrust-guidelines.pdf>
      6. Ethics - <http://www.ieee.org/portal/cms_docs/about/CoE_poster.pdf>
      7. IEEE 802.11 Working Group Operartions Manual - <https://mentor.ieee.org/802.11/dcn/14/11-14-0629-14-0000-802-11-operations-manual.docx>
   3. Chair asked if there is any potentially essential patent that people are aware of.
      1. No potentially essential patent reported.
4. Announcement
   1. Chair asked the attendees to state name and affiliation when speaking for the first tme.
5. Attendance
   1. Chair asked the attendees to send an email to Yasu ([inoue.yasuhiko@lab.ntt.co.jp](mailto:inoue.yasuhiko@lab.ntt.co.jp)) and/or Osama ([osama.aboulmagd@huawei.com](mailto:osama.aboulmagd@huawei.com)) to record attendance.
6. Presentations
   1. **Po-Kai Huang (Intel) presented “11ax D0.1 Comment Resolution for UL MU CS NAV,” based on the submission 11-16-0885-02.**
      1. Summary
         1. Resolutions for comments in clause 25.5.2.4 of TGax Draft 0.1 with the following CIDs are proposed:
            1. CIDs #: 1467, 635, 2648, 2708, 1544, 1545, 2649, 437, 1542, 990, 2256, 1543, and 599.
      2. Discussion
         1. C: There was a comment that the resolution for the CID #437 should be “ACCEPT.”
         2. C: CID #1542 – After discussions, the resolution was changed to REVISED from ACCEPT. The sentence “The medium indication of virtual CS” is not clear enough.
      3. Next Step
         1. Po-Kai to update the document based on the discussions.
   2. **Po-Kai Huang (Intel) presented “11ax D0.1 Comment Resolution for Some UL MU CS TBD,” based on the submission 11-16-0886-02.**
      1. Summary
         1. The resolutions for comments in clause 25.5.2.4 of TGax Draft 0.1 with the following CIDs are proposed:
            1. CIDs: #177, 2188, 1220, 206, and 700.
      2. Discussion
         1. Q: A member asked for the background of the proposed text for the CIDs 177, 2188 and 206, “Length subfield in the Common Info field of the Trigger frame is less than or equal to 418.” Where from this number comes?
      3. Next Step
         1. Po-Kai to update the document.
   3. **Po-Kai Huang (Intel) presented “11ax D0.1 Spec Texts for MU-RTS HE MU PPDU Restriction,” based on the submission 11-16-0887-00.**
      1. Summary
         1. Following motion contained in 16/648 has passed: “*MU-RTS shall not be carried in an HE MU PPDU.”*
         2. Relevant text is proposed.
      2. Discussion
         1. Q: A member asked for interpretation of the motion if this means MU-RTS is sent in a separate PPSU. 🡪 This answer is yes. It can be carried in a legacy PPDU.
   4. **Yasu Inoue (NTT) presented “Comment Resolutions on Clause 6 & 8 comments,” based on the submission 11-16-0864-03.**
      1. Summary
         1. The resolutions for the Clause 6 and Clause 8 comments are proposed.
            1. CIDs: 83, 1227, 1228, 1229, 1238, 1239, 1240, 2292, 2293, 2294, 2304, 2305, and 2306 (13 comments) – MLME primitives 1,
            2. CIDs: 1125, 1230, 1241, 1596 (4 comments) – MLME primitives 2,
            3. CIDs: 1869, 2420 (two comments) – PHY SAP primitives,
            4. CID: 1123 (one comment) – MIBs,
            5. CIDs: 2043, 2044, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054. 2055, 2056, 2058, 2059, 2062 (15 comments) – clause 26 comments.
      2. Discussion
         1. C: A member asked for clarification why HE Operation element is included in MLME-SCAN.request. 🡪 It is for the consistency with the motion that we passed during the July 2016 session.
         2. C: The baisc idea of which frame includes which elements should be described in the resolution. 🡪 The presenter agreed to modify the resolutions.
         3. C: PHY-DATA primitives: HE PHY uses STA\_ID instead of user\_id. 🡪 This part will be modified in the next revision.
         4. C: Chair mentioned that “transferred” is not the resolution. Need to check whether the editor who maintains the comment sheet is aware of that.
      3. Next Step
         1. Yasu to have offline discussion and update the document.
   5. **Alfred Asterjadhi (Qualcomm) presented “CIDs for Section 25.4/25.4.1 Selection of BlockAck and BlockAckReq variants,” based on the submission 11-16-1028-00 (on behalf of George Cherian).**
      1. Summary
         1. The resolutions for multiple comments on Clause 25.4 with the following 13 CIDs proposed:
            1. CIDs: #1218, 31, 168, 752, 1495, 1498, 1499, 1500, 1664, 1795, 1900, 2319, and 813.
      2. Discussion
         1. C: The term of “Block ACK Session” is not defined. 🡪 “Block Ack Agreement” will be the right term.
         2. Time is up.
7. AOB
   1. Next teleconference: August 18th, 2016, 20:00 – 22:00 (ET)
8. Adjournment
   1. TGax teleconference has adjourned at 11:58 AM (ET).
9. Attendees

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|  | **Name** | **Affiliation** |
| 1 | Osama Aboul-Magd | Huawei Technologies |
| 2 | Woojin Ahn | Wilus Institute |
| 3 | David Bagby | Calypso Ventures |
| 4 | Hanseul Hong | Yonsei Univ. |
| 5 | Po-Kai Huang | Intel |
| 6 | Junichi Iwatani | NTT |
| 7 | Yasu Inoue | NTT |
| 8 | Jinjing Jiang | Marvell |
| 9 | Jeongki Kim | LG Electronics |
| 10 | Suhwook Kim | LG Electronics |
| 11 | Geonjung Ko | Wilus Institute |
| 12 | Sung Eun Lee | Cypress |
| 13 | Patrice Nezou | Canon |
| 14 | Kome Oteri | InterDigital |
| 15 | Jayh Park | LG Electronics |
| 16 | Mark Rison | Samsung |
| 17 | Jung Hoon Suh | Huawei Technologies |
| 18 | Yusuke Tanaka | SONY |
| 19 | Lei Wang | Marvell |
| 20 | Xiaofei Wang | InterDigital |
| 21 | Lisa Ward | Rohde & Schwartz |
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# Teleconference on Thursday, August 18th, 2016, 20:00 – 22:00 (ET)

1. Meeting called to order by Osama Aboul-Magd (Huawei Technologies) @ 20:00 (ET).

The delay was due to the audio trouble of web conferencing system.

1. Agenda
   1. Proposed Agenda
      1. Call the meeting to order
      2. IEEE 802 and 802.11 IPR Policy and Procedure
      3. Annoucement
      4. Attendance (Please send an e.mail to Yasuhiko Inoue (inoue.yasuhiko@lab.ntt.co.jp) and/or Osama Aboul-Magd (osama.aboulmagd@huawei.com))
      5. Presentations
         1. [11-16-1028-01](https://mentor.ieee.org/802.11/dcn/16/11-16-1028-01-00ax-cids-for-section-25-4-ba-variants.docx), “CIDs for: Section 25.4/25.4.1 Selection of BlockAck and BlockAckReq variants,” by Alfred Asterjadhi (Qualcomm)
         2. [11-16-0929-02](https://mentor.ieee.org/802.11/dcn/16/11-16-0929-02-00ax-cr-ul-mu-operation.docx), “Comment Resolutions on UL MU Operation,” by Simone Merlin (Qualcomm)
         3. [11-16-0930-02](https://mentor.ieee.org/802.11/dcn/16/11-16-0930-02-00ax-cd-dl-mu-operation.rtf), “Comment Resolutions on DL MU Operation,” by Simone Merlin (Qualcomm)
         4. [11-16-1097-00](https://mentor.ieee.org/802.11/dcn/16/11-16-1097-00-00ax-he-phy-mumimo-beamforming-part-2.docx), “Comment Resolutions on Clause 9.4.1 Part 2,” by Lochan Verma (Qualcomm)
      6. AOB
      7. Adjourn
   2. Chair asked if any objection to proceed with this agenda. 🡪 No objection. The meeting will be conducted following this agenda.
2. Reminder - IEEE 802 and 802.11 IPR Policy and Procedure
   1. Chair mentioned that we are operating under the IEEE 802 and 802.11 Policy and Procedure.
   2. Relevant documents
      1. IEEE Patent Policy - <http://standards.ieee.org/board/pat/pat-slideset.ppt>
      2. Patent FAQ - <http://standards.ieee.org/board/pat/faq.pdf>
      3. LoA Form - <http://standards.ieee.org/board/pat/loa.pdf>
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      5. Anti-Trust FAQ - <http://standards.ieee.org/resources/antitrust-guidelines.pdf>
      6. Ethics - <http://www.ieee.org/portal/cms_docs/about/CoE_poster.pdf>
      7. IEEE 802.11 Working Group Operartions Manual - <https://mentor.ieee.org/802.11/dcn/14/11-14-0629-14-0000-802-11-operations-manual.docx>
   3. Chair asked if there is any potentially essential patent that people are aware of.
      1. No potentially essential patent reported.
3. Announcement
   1. Chair asked the attendees to state name and affiliation when speaking for the first tme.
4. Attendance
   1. Chair asked the attendees to send an email to Yasu ([inoue.yasuhiko@lab.ntt.co.jp](mailto:inoue.yasuhiko@lab.ntt.co.jp)) and/or Osama ([osama.aboulmagd@huawei.com](mailto:osama.aboulmagd@huawei.com)) to record attendance.
5. Presentations
   1. **George Cherian (Qualcomm) presented “CIDs for: Section 25.4/25.4.1 Selection of BlockAck and BlockAckReq variants,” based on the submission 11-16-1028-01.**
      1. Summary
         1. This is continuation of Alfred’s presentation from the previous conference call.
      2. Discussion
      3. Next step
         1. .
   2. **Simone Merlin (Qualcomm) presented “Comment Resolutions on DL MU Operation,” based on the submission 11-16-0930-02.**
      1. Summary
         1. The resolutions for the following CIDs are proposed:
            1. CIDs #: 32, 33, 169, 221, 250, 427, 429, 753, 754, 755, 756, 950, 1502, 1503, 1504, 1505, 1506, 1508, 1801, 1901, 1902, 1903, 2320, 2467, 2632, 2633, 2634, and 2635
      2. Discussion
         1. C: Chair asked Simone to include some explanation for the resolutions. Simone agreed.
         2. C: There was a discussion on the meaning of B1 in HE Capabilities element.
         3. Q: There are two comments waiting for the submission. Chair asked whether those comments are still owned by Simone. 🡪 The answer is yes. The commenters asked for offline discussion on the resolution and handling of those comments.
      3. Next step
         1. Simone to update the document based on the results of discussions.
   3. **Simone Merlin (Qualcomm) presented “Comment Resolutions on UL MU Operation,” based on the submission 11-16-0929-02.**
      1. Summary
         1. This submission contains the resolutions for more than 100 comments on UL MU Operation.
      2. Discussion
         1. Q: There was a question on the usage scenario of aggregating more than one Trigger frames if this is for the cascaded sequence. 🡪 This is one of the general aggregation scenarios.
         2. Q: A member asked for the relevant CID for the multiple Trigger. 🡪 CID #591 is one of the related comments.
         3. C: There was a discussion on multiple Trigger frame and reliability of the transmission.
         4. C: A member asked for a clarification whether the Trigger frame is the broadcast frame. 🡪 It is not limited to broadcast frame. The Trigger frame can be a unicast frame.
         5. C: The proposed text does not assume MU in peer-to-peer communications. 🡪 That is the intention.
         6. C: The term “Basic SSID” shall be “Reference SSID”. 🡪 Need to check to be consistent with the base standard.
      3. Next step
         1. Presentation to be continued in a following conference call (next week or the week after).
6. AOB
   1. The next conference call will be on August 25th, 10:00 – 12:00 (ET).
7. Adjournment
   1. TGax conference call adjourned @ 22:00 (ET).
8. Attendees

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| --- | --- | --- |
|  | **Name** | **Affiliation** |
| 1 | Osama Aboul-Magd | Huawei Technologies |
| 2 | Tomoko Adachi | Toshiba |
| 3 | Woojin Ahn | WILUS Institute |
| 4 | Alfred Asterjadhi | Qualcomm |
| 5 | David Bagby | Calypso Ventures |
| 6 | George Cherian | Qualcomm |
| 7 | Rojan Chitrakar | Panasonic |
| 8 | Jinsoo Choi | LG Electronics |
| 9 | Sean Coffey | RealTek |
| 10 | Yonggang Fang | ZTE |
| 11 | Po-Kai Huang | Intel |
| 12 | Junichi Iwatani | NTT |
| 13 | Yasu Inoue | NTT |
| 14 | Allan Jones | Activision |
| 15 | Suhwook Kim | LG Electronics |
| 16 | Geonjung Ko | WILUS Institute |
| 17 | Zhou Lan | Broadcom |
| 18 | Jing Ma | NICT |
| 19 | Simone Merlin | Qualcomm |
| 20 | L. Sun | IDCC |
| 21 | Lochan Verma | Qualcomm |
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