IEEE P802.11  
Wireless LANs

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| IEEE 802.11 TGax Teleconference Minutes, April 21st, 2016 | | | | |
| Date: 2016-05-01 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
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Abstract

This document contains minutes of TGax teleconference on April 21st, 2016.

# Teleconference on Thursday, April 21st, 2016, 20:00 – 22:00 (ET)

1. Meeting called to order by Osama Aboul-Magd (Huawei Technologies) @ 20:03 (ET).
2. 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.
3. 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. Progress on comments assigned to multiple persons.
      6. Comment Assignment.
      7. AOB
      8. Adjourn
   2. Approval of the agenda
      1. Chair asked if there is any discussion on the agenda.
      2. The agenda was approved.
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. Progress on comments assigned to multiple persons
   1. Trying to assign comments to each person.
   2. PHY

* PHY Intro (26.1.1, 26.1.4, 26.3.1, 26.3.3 and 26.3.5): Sameer Vermani, Bo Sun
* TXVECTOR (26.2.2): Bo Sun
* PHY PPDU formats (26.3.2): Rui Cao
* PHY Mathematical Description (26.3.5): Rui Cao
* Timing-related parameters (26.3.6): Bin Tian
* OFDMA tone plan (26.3.7, 26.3.7.1, 26.3.7.3, and 26.3.12): Jinsoo Choi
* PHY Mathematical Description (26.3.8, 26.3.9.3 - 6, 26.3.9.7.4): Rui Cao
* HE-SIG-A (26.3.9.7 - 26.3.9.7.3): Ross Jian Yu
* HE-SIG-B (26.3.9.8 - 26.3.9.8.5): Kaushik Josiam, Ross Jian Yu
* HE-STF and HE-LTF (26.3.9.9 and 26.3.9.10): Eunsung Park, Ming Gan
* PHY Data field other (26.3.10.1, 26.3.10.3, 26.3.10.5 - 7, 26.3.10.9 - 11): Daewin Lee, Tianyu Wu
* PHY Mathematical Description (Re: 26.3.10.2): Rui Cao
* Coding (26.3.10.4 - 26.3.10.4.5): Sriram Venkateswaran
* Constellation map (26.3.10.8): Sriram Venkateswaran, Tianyu Wu
* Pilot subcarriers (26.3.10.12): Bin Tian
* PHY Mathiematical Description (26.3.10.13): Rui Cao
* Packet extension (26.3.10.15): Yun Liu, Meilu Lin
* PHY MU-MIMO (26.3.12.3.2 - 4 & 26.3.12.4.2 - 4, 26.3.12.4.6): Sriram Venkateswaran, Kome Oteri, Sameer Vermani
* PHY Transmit spec (26.3.13): Daewon Lee
* PHY Transmit spec (26.3.14 - 15): Qinghua Li, Xiaogang Chen
* PHY Mathematical Description (26.4.3): Rui Cao
* PHY MCS parameters (26.5.1): Yujin Noh, Jianhan Liu
  1. MAC and Others
* Definitions (3.2): Alfred Asterjadhi, Matt Fischer, Ming Gan, Jason Lee, Jayh Park, Kaiying Lv, Jarkko Kneckt, Jeongki Kim
* MU-RTS/CTS and NAV (3.2): Po-Kai Huang, Young Hoon Kwon, Yunbo Li, Kiseon Ryu, Yuichi Morioka, Weimin Xing, Xiaofei Wang, Jing Ma, Yasu Inoue
* Receiver Operation Mode (Re: 3.4): Jarkko Kneckt, Jayh Park, Weiming Xing, Alfred Asterjadhi, Reza Hedayat
* MAC General (4.2.12a and 4.3.12a): Osama Aboul-Magd
* MAC General (5.1.5.1): Yanchun Li
* Clause 6: Yasuhiko Inoue
* MU-RTS/CTS and NAV (8.3): Po-Kai Huang, Young Hoon Kwon, Yunbo Li, Kiseon Ryu, Yuichi Morioka, Weimin Xing, Xiaofei Wang, Jing Ma, Yasu Inoue
* Clause 8 (8.3.5.3.2): Yongho Seok
* HE Capabilities/Operation (9.2): Matt Fischer
* MU Operation (9.2.4): Simone Merlin, Rakesh Taori, Reza Hedayat, Kiseon Ryu, Lei Wang, Tomo Adachi, John Son, Anton Kiryanov, Yasu Inoue, Junichi Iwatani, David Xun Yang
* Trigger Frame Format (9.2.4.1.3): Liwen Chu, Reza Hedayat, Yunbo Li, Simone Merlin, Evgeny Khorov, Po-Kai Huang, Kaiying Lv, Kiseon Ryu, Rossi Jian Yu, Zhou Lan
* HT Control (9.2.4.1.10): Alfred Asterjadhi, Liwen Chu, Jeongki Kim
* Block ACK (9.2.4.5.4): George Cherian, Tomo Adachi, Kaiying Lv, Dengyu Qiao, Xiaofei Wang.
* HT Control (9.2.4.6.1, 9.2.4.6.3, 9.2.4.6.4 – 9.2.4.6.4.2, and 9.2.4.6.4.4): Alfred Asterjadhi, Liwen Chu, Jeongki Kim
* Receiver Operation Mode (9.2.4.6.4.3): Jarkko Kneckt, Jayh Park, Weiming Xing, Alfred Asterjadhi, Reza Hedayat
* MAC General (9.2.4.7.1): Daewon Lee
* MU-RTS/CTS and NAV (9.2.5.1 – 2 and 9.2.5.7): Ko-Kai Huang
* Trigger Frame Format (9.3.1.23 – 9.3.1.23.2): Liwen Chu, Reza Hedayat, Yunbo Li, Simone Merlin, Evgeny Khorov, Po-Kai Huang, Kaiying Lv, Kiseon Ryu, Rossi Jian Yu, Zhou Lan
* MU-RTS/CTS and NAV (9.3.2.8a.2): Po-Kai Huang, Young Hoon Kwon, Yunbo Li, Kiseon Ryu, Yuichi Morioka, Weimin Xing, Xiaofei Wang, Jing Ma, Yasu Inoue
* TWT (Re: 9.3.3.1, 9.3.3.6, 9.3.3.8 and 9.3.3.10): Zhou Lan, Yasu Inoue, Jayh
* HE Capabilities/Operation (9.3.3.5 – 7, 9.3.3.9): Matt Fischer
* Management Frame Format & Elements (9.3.3.7 – 10): Yasuhiko Inoue
* Block ACK (9.3.1.9, 9.3.1.9.3, 9.3.1.9.7): George Cherian, Tomo Adachi, Kaiying Lv, Dengyu Qiao, Xiaofei Wang.
* Sounding (Re: 9.4.1.62 and 63): Sameer Vermani, Kome Oteri, Kaushik Josiam
* MAC General (9.4.2.1): Editor
* TWT Element (9.4.2.196): Matt Fischer
* HE Capabilities/Operation (9.4.2.213, 214): Matt Fischer
* A-MPDU (9.7, 9.7.1, 9.7.3): Yongho Seok, Liwen Chu, John Son, Tomo Adachi
* MU Operation (9.7): Yongho Seok, Liwen Chu, John Son, Tomo Adachi
* HT Control (10.1): Alfred Asterjadhi, Liwen Chu, Jeongki Kim
* MAC General (10.2.1): <No assignee!>
* MU-RTS/CTS and NAV (10.3.1, 10.3.2): Po-Kai Huang, Young Hoon Kwon, Yunbo Li, Kiseon Ryu, Yuichi Morioka, Weimin Xing, Xiaofei Wang, Jing Ma, Yasu Inoue
* MU Operation (10.3.2.3.3): Lei Wang
* Block ACK (10.3.2.11.1 – 4, 10.3.2.12, 10.7.6.5.2, and 13.3.2.11.2): Jinjing Jiang?, Yongho Seok, Junichi Iwatani, Jeongki Kim
* MU-RTS/CTS and NAV (Re: 10.3.7): Po-Kai Huang, Young Hoon Kwon, Yunbo Li, Kiseon Ryu, Yuichi Morioka, Weimin Xing, Xiaofei Wang, Jing Ma, Yasu Inoue
* MAC General (10.7.6.5.2): Liwen Chu
* MU-RTS/CTS and NAV (Re: 10.7.6.5.2): Po-Kai Huang, Young Hoon Kwon, Yunbo Li, Kiseon Ryu, Yuichi Morioka, Weimin Xing, Xiaofei Wang, Jing Ma, Yasu Inoue
* MU Operation (10.7.6.6): Yongho Seok
* HT Control (10.9): Alfred Asterjadhi, Liwen Chu, Jeongki Kim
* MAC General (10.13.1): Alfred Asterjadhi, Jeongki Kim
* MAC General (10.16): Yongho Seok, Alfred Asterjadhi
* MU Operation (10.22.2, 10.22.2.2, 10.22.2.7, 10.22.2.8): Yongho Seok
* MAC General (10.22.2.4): Yongho Seok
* MU-RTS/CTS and NAV (Re: 10.22.2.9): Po-Kai Huang, Young Hoon Kwon, Yunbo Li, Kiseon Ryu, Yuichi Morioka, Weimin Xing, Xiaofei Wang, Jing Ma, Yasu Inoue
* MU Operation (10.22.4.2.3): Yongho Seok
* Block ACK (10.24, 10.24.10): George Cherian, Tomo Adachi, Kaiying Lv, Dengyu Qiao, Xiaofei Wang, Reza Hedayat, Yusuke Tanaka, Kiseon Ryu.
* TWT (10.44): Alfred Asterjadhi, Matt Fischer, Ming Gan, Jason Lee, Jayh Park, Kaiying Lv, Jarkko Kneckt, Jeongki Kim
* MAC General (11.1.3.9): <No assignee!>
* MAC General (11.2.2.8): Alfred Asterjadhi
* MAC General (11.2.2.17): Alfred Asterjadhi, Jayh Park
* MAC General (11.4): Alfred Asterjadhi
* MU Operation (11.8.6): Yongho Seok
* HT Control (25): Alfred Asterjadhi, Liwen Chu, Jeongki Kim
* MAC General (25.1): Zhou Lan
* MU Operation (25.1): Simone Merlin, Rakesh Taori, Reza Hedayat, Kiseon Ryu, Lei Wang, Tomo Adachi, John Son, Anton Kiryanov, Yasu Inoue, Junichi Iwatani, David Xun Yang
* MU-RS/CTS and NAV (25.2 – 25.2.1): Po-Kai Huang, Young Hoon Kwon, Yunbo Li, Kiseon Ryu, Yuichi Morioka, Weimin Xing, Xiaofei Wang, Jing Ma, Yasu Inoue
* MU Operation (25.2.2.1 and 25.2.2.3): Simone Merlin, Rakesh Taori, Reza Hedayat, Kiseon Ryu, Lei Wang, Tomo Adachi, John Son, Anton Kiryanov, Yasu Inoue, Junichi Iwatani, David Xun Yang
* Fragmentation (25.3 – 25.3.3): Alfred Asterjadhi, Ming Gan, Mark Rison, Laurent Cariou, Woojin Ahn, Narendar Madhavan
* Block ACK (25.4 and 25.4.1): George Cherian, Tomo Adachi, Kaiying Lv, Dengyu Qiao, Xiaofei Wang, Reza Hedayat, Yusuke Tanaka, Kiseon Ryu.
* MU Operation (25.5.1 and 25.5.2): Simone Merlin, Rakesh Taori, Reza Hedayat, Kiseon Ryu, Lei Wang, Tomo Adachi, John Son, Anton Kiryanov, Yasu Inoue, Junichi Iwatani, David Xun Yang
* MU-RTS/CTS and NAV (25.5.2.4): Simone Merlin, Rakesh Taori, Reza Hedayat, Kiseon Ryu, Lei Wang, Tomo Adachi, John Son, Anton Kiryanov
* MU Operation (25.5.2.6): Chittabrata Ghosh, Kiseon Ryu, Yunbo Li, Reza Hedayat, Stephane Baron, Yong Gan, Yuichi Morioka
* MU Operation (25.5.3): Simone Merlin, Rakesh Taori, Reza Hedayat, Kiseon Ryu, Lei Wang, Tomo Adachi, John Son, Anton Kiryanov
* HE Sounding Protocol (25.6): Raja Banerjea, Liwen Chu, Narendar Madhavan, Ross Jian Yu, Zhou Lan, Kaiying Lv
* Receiver Operation Mode (25.8): Jarkko Kneckt, Jayh Park, Weiming Xing, Alfred Asterjadhi, Reza Hedayat
* Spatial Reuse (25.9): Bo Sun, Young Hoon Kwon, Rossi Jian Yu, Junichi Iwatani, Liwen Chu, Xiaofei Wang, Jing Ma, Jeongki Kim, Yasu Inoue, Gwen Barriac, Geonjung Ko, Yusuke Tanaka, Yuichi Morioka, James Wang, Laurent Cariou
* A-MPDU (25.10, and 25.10.2 – 3): Liwen Chu
* MAC General (25.11): Yongho Seok, Alfred Asterjadhi
* MAC General (25.13 and 25.13.1): Alfred Asterjadhi, Jeongki Kim
* MU Operation (25.13.1) Simone Merlin, Rakesh Taori, Reza Hedayat, Kiseon Ryu, Lei Wang, Tomo Adachi, John Son, Anton Kiryanov, Yasu Inoue, Junichi Iwatani, David Xun Yang
* MAC General (25.13.2): Chittabrata Ghosh, Kiseon Ryu, Yunbo Lin, Reza Hedayat, Stephane Baron, Yong Gan, Yuichi Morioka
* TWT (25.13.2): Zhou Lan, Kiseon Ryu, Yanchun Li
* Annex B and Annex G: Osama Aboul-Magd
  1. Need Proposal
* CID 149 🡪 <Not assigned>
* CID 157 🡪 <Not assigned>
* CID 159 🡪 <Not assigned>
* CID 218 🡪 <Not assigned>
* CID 230 🡪 Alfred Asterjadhi
* CID 503 🡪 Yujin Noh
* CID 543 🡪 <Not assigned>
* CID 799 🡪 <Not assigned>
* CID 814 🡪 <Not assigned>
* CID 819 🡪 Jinsoo Ahn
* CID 825 🡪 <not assigned?>
* CID 991 🡪 <Not assigned>
* CID 993 🡪 <Not assigned>
* CID 1008 🡪 <Not assigned>
* CID 1025 🡪 <Not assigned>
* CID 1417 🡪 <Not assigned>
* CID 1634 🡪 Matt Fischer
* CID 1702 🡪 <Not assigned>
* CID 1868 🡪 Shunsaku Shimada
* CID 1870 🡪 Shunsaku Shimada
* CID 1875 🡪 Shunsaku Shimada
* CID 2186 🡪 Tomo Adachi
* CID 2750 🡪 Yujin Noh

1. Comment Assignment
   1. Robert assigned people for the comments currently
2. Next Call
   1. The next call is scheduled on Thursday, April 28th, 2016 from 10:00 (ET).
3. AOB
   1. No other business to conduct.
4. Adjourn
   1. Meeting adjourned at 21:57 (ET).

**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 | Stéphane Baron | Canon |
| 7 | Rui Cao | Marvell |
| 8 | Xiaogang Chen | Intel |
| 9 | Rojan Chitrakar | Panasonic |
| 10 | Jinsoo Choi | LG Electronics |
| 11 | Liwen Chu | Marvell |
| 12 | Sean Coffey | RealTek |
| 13 | Yonggang Fang | ZTE |
| 14 | Matt Fischer | Broadcom |
| 15 | Chittabrata Ghosh | Intel |
| 16 | Brian Hart | Cisco Systems |
| 17 | Reza Hedayat | Newracom |
| 18 | Po-Kai Huang | Intel |
| 19 | Yasuhiko Inoue | NTT |
| 20 | Junichi Iwatani | NTT |
| 21 | Kaushik Josiam | Samsung |
| 22 | Jeongki Kim | LG Electronics |
| 23 | Geonjung Ko | WILUS Institute |
| 24 | Young Hoon Kwon | Newracom |
| 25 | Zhou Lan | Broadcom |
| 26 | Daewon Lee | Newracom |
| 27 | Jae Seung Lee | ETRI |
| 28 | Yanchun Li | Huawei |
| 29 | Meilu Lin | Huawei Technologies |
| 30 | Jing Ma | NICT |
| 31 | Narenda Madhavan | Toshiba |
| 32 | Yuichi Morioka | Sony |
| 33 | Kome Oteri | InterDigital |
| 34 | Jayh Park | LG Electronics |
| 35 | Dengyu Qiao | Huawei Technologies |
| 36 | Kiseon Ryu | LG Electronics |
| 37 |  |  |
| 38 | Sigurd Schelstraete | Quantenna Communications |
| 39 | Yongho Seok | Newracom |
| 40 | Shoko Shinohara | NTT |
| 41 | Robert Stacy | Intel |
| 42 | Bo Sun | ZTE |
| 43 | Yusuke Tanaka | Sony |
| 44 | Sriram Venkateswaran | Broadcom |
| 45 | Lochan Verma | Qualcomm |
| 46 | Sameer Vermani | Qualcomm |
| 47 | Lei Wang | Marvell |
| 48 | Xiaofei Wang | InterDigital |
| 49 | Tianyu Wu | MediaTek |
| 50 | Weimin Xing | ZTE |
| 51 | Ross Jian Yu | Huawei Technologies |
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There are 50+ attendees on the call.