IEEE P802.11
Wireless LANs

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| TGax Teleconferences Minutes from March to April 2017 |
| Date: 2017-4-25 |
| Author(s): |
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Abstract

This document contains minutes of TGax teleconference from March to April 2017.

Rev. 0: Minutes from TGax teleconference on March 30th, 2017.

Rev. 1: Included the minutes from TGax teleconference on April 6th, 2017.

Rev. 2: Included the minutes from TGax teleconference on April 21st, 2017.

Rev. 3: Bug fixes to R2 and inclusion of the minutes from TGax teleconference on April 27th, 2017.

#  Teleconference on Thursday, March 30th, 2017, 10:00 – 12:00 (ET)

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 10:00 (ET).**
	1. Introduction of the chairperson and secretary.
2. **Agenda Setting**
	1. Proposed Agenda
		1. Call the meeting to order
		2. IEEE 802 and 802.11 IPR Policy and Procedure
		3. Attendance (Please send an e.mail to Yasuhiko Inoue (inoue.yasuhiko@lab.ntt.co.jp) and/or Osama Aboul-Magd (osama.aboulmagd@huawei.com))
		4. Reminder of TGax ad hoc meeting May 2017 in Seoul, Korea
		5. Presentation
			1. 11-17-0340 “Comment resolution for CIDs on 11-1-3-10 dual beacon operation,” Yonggang Fang (ZTE)
		6. AOB
		7. Adjourn
	2. 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. 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/14/11-14-0629-18-0000-802-11-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. **Attendance**
	1. Chair asked the attendees to send an email to Yasu (inoue.yasuhiko@lab.ntt.co.jp) and/or Osama (osama.aboulmagd@huawei.com) to record attendance.
5. **TGax ad hoc meeting in May 2017**
	1. Chair asked people who are planning to attend TGax ad hoc meeting May 2017 in Seoul, Korea to send notification.
6. **Presentations**
	* 1. Yongganf Fang (ZTE) is not on the call. His presentation will be scheduled for the next teleconference.
		2. Called for other submissions – people are not ready to present material at this point of time.
		3. An attendee suggested adjournment.
7. **AOB**
	1. The next conference call will be on April 6th, 2017. Chair will send out the meeting announcement.
8. **Adjournment**
	1. Meeting adjourned at 10:13 AM (ET).
9. **List of Attendees – following people were on the call.**

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|  | **Name** | **Affiliation** |
| 1 | Osama Aboul-Magd | Huawei Technologies |
| 2 | Tomoko Adachi | Toshiba |
| 3 | Woojin Ahn | WILUS Institute |
| 4 | Edward Au | Huawei Technologies |
| 5 | Stephane Baron | Canon Research |
| 6 | Frank Hsu | MediaTek |
| 7 | Po-Kai Huang | Intel |
| 8 | Yasuhiko Inoue | NTT |
| 9 | Junichi Iwatani | NTT |
| 10 | Geonjung Ko | Wilus Institute |
| 11 | Patrice Nezou | Canon Research |
| 12 | Kome Oteri | InterDigital |
| 13 | Abhishek Patil | Qualcomm |
| 14 | Albert Petrick | InterDigital |
| 15 | Mark Rison | Samsung |
| 16 | Sigurd Schelstraete | Quantenna |
| 17 | Yongho Seok | Newracom |
| 18 | Xiaofei Wang | InterDigital |
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# Teleconference on Thursday, April 6th, 2017, 20:00 – 22:00 (ET)

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 20:03 (ET).**
	1. Introduction of the chairperson and secretary.
2. **Agenda Setting**
	1. Proposed Agenda
		1. Call the meeting to order (done)
		2. Agenda Setting
		3. IEEE 802 and 802.11 IPR Policy and Procedure
		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. Announcement
		6. TGax ad hoc meeting in May 2017
		7. Presentations
			1. 11-17-0340 “Comment resolution for CIDs on 11-1-3-10 dual beacon operation,” Yonggang Fang (ZTE)
			2. 11-17-0576 “Resolutions for comments related to Extended Range Beacon,” Tomoko Adachi (Toshiba)
		8. AoB
		9. Adjourn
	2. Chair asked for comments and/or suggestions on the agenda. 🡪 No response.
	3. 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/14/11-14-0629-18-0000-802-11-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. **Attendance reminder**
	1. Chair asked the attendees to send an email to Yasu (inoue.yasuhiko@lab.ntt.co.jp) and/or Osama (osama.aboulmagd@huawei.com) to record attendance.
5. **Announcement**
	1. Chair asked to state name and affiliation when speaking for the first time.
	2. Chair also asked the attendees to put cellphone mute.
6. **TGax ad hoc meeting in May 2017**
	1. Chair asked people who are planning to attend TGax ad hoc meeting May 2017 in Seoul, Korea to send notification.
	2. Discount rate for the hotel is available until April 7th which is today in Korea time.
		1. Chair suggested hotel reservation for the attendees.
	3. One of the participants requested a list of attendees of TGax ad hoc meeting. Chair will send it later.
7. **Presentations**
	1. **Tomoko Adachi (Toshiba) presented “Resolutions for Comments related to Extended Range Beacon,” based on the submission 11-17-0576-01.**
		1. Summary
			1. Resolutions for the 24 CIDs related to TGax extended range Beacon are proposed.
				1. Relevant CIDs: 6228, 6556, 9696, 4708, 6223, 6917, 6918, 7997, 9562, 9563, 5393, 5391, 3055, 5797, 5905, 7961, 7978, 7979, 9334, 5392, 9415, 6179, 7042, 5390
			2. Basically, the proposal is to ban the HE ER SU Beacon.
		2. Discussion
			1. C (CID #6228): Current resolution (Aprove) has to be changed since the resolution shall be Accepted, Revised or Rejected.
			2. C: A member discussed the relation ship between HE dual Beacon operation and OFDMA. He also referred to the protection mechanism within the area of legacy Beacons will be broken. He disagrees with the idea of banning HE dual Beacon operation. That is an issue we need to adderss.
			3. Another member mentioned that the dual Beacon makes the situation even worse.
			4. There was a comment that HE dual Beacon has flexibility of changing the range by adjusting the transmission power and is very useful for some special cases.
	2. **Yonggang Fang (ZTE) presented “Comment resolution for CIDs on 11-1-3-10 dual beacon operation,” based on 11-17-0340-01.**
		1. Summary
			1. Resolutions for multiple comments related to TGax D1.0 with the following CIDs (15) are proposed.
				1. Relevant CIDs: 3054, 3055, 5165, 5797, 5905, 6554, 6556, 6560, 7961, 7977, 7978, 9334, 9561, 9696, 9868
			2. The point is to modify the definition of HE dual Beacon to separate from the legacy Beacon.
		2. Discussion
			1. C (CID #5165): Current reolution (Rejected) should be changed to Revised since it comes with a new proposal.
			2. Q: Why not considering the Beacon transmission using 1Mbps mode? Any results of comaring those two schemes? 🡪 The presenter does not have results of comparison.
			3. The presenter emphasized that one of the benefits of HE dual Beacon is improved reliability in an outdoor environment due to the extended cyclic prefix.
			4. Q: Another member asked propsed HE dual Beacon scheme – Does an AP send two Beacons? 🡪 That is one of possible implementations.
			5. Q: A member asked a question whether the proposed change from HE extended range Beacon to HE Beacon is a technical change? – Another member commented that it shall be a technical change since the behaviour is changed.
			6. C: A member mentioned that removal of timing related spec from the HE dual Beacon operation creates other issues such as channel switch announcement and BSS color change. 🡪 Someone (Qualcomm) is preparing another submission for that.
			7. A member mentioned he/she would like to see the direction of this discussion before submitting timing related proposal for HE dual Beacon operation.

Offline discussion is encouraged for the today’s topics.

1. **AoB**
	1. The next TGax teleconference is on Thursday, April 13th, 2017
2. **Adjournment**
	1. TGax teleconference adjourned @ 11:59 AM (ET).
3. **List of 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 | Stephane Baron | Canon Research |
| 6 | Jiamin Chen | Huawei Technologies |
| 7 | Yonggang Fang | ZTE |
| 8 | Po-Kai Huang | Intel |
| 9 | Yasuhiko Inoue | NTT |
| 10 | Junichi Iwatani | NTT |
| 11 | Jeongki Kim | LG Electronics |
| 12 | Suhwook Kim | LG Electronics |
| 13 | Geonjung Ko | Wilus Institute |
| 14 | Sungeun Lee | Cypress |
| 15 | Kaiying Lv | ZTE |
| 16 | Jing Ma | NICT |
| 17 | Narendar Madhavan | Toshiba |
| 18 | Abhishek Patil | Qualcomm |
| 19 | Albert Petrick | InterDigital |
| 20 | Sigurd Schelstraete | Quantenna |
| 21 | Yongho Seok | Newracom |
| 22 | Shoko Shinohara | NTT |
| 23 | John Son | Wilus |
| 24 | Lochan Verma | Qualcomm |
| 25 | James Wang | MediaTek |
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# Teleconference on Thursday, April 20th, 2017, 20:00 – 22:00 (ET)

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 20:03 (ET).**
	1. Introduction of the chairperson and secretary.
2. **Agenda Setting**
	1. Proposed Agenda
		1. Call the meeting to order (done)
		2. Agenda Setting
		3. IEEE 802 and 802.11 IPR Policy and Procedure
		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. Announcement
		6. TGax ad hoc meeting in May 2017
		7. Presentations
			1. [11- 17-0582-00](https://mentor.ieee.org/802.11/dcn/17/11-17-0582-00-00ax-obss-pd-tpc-examined.pptx), “TG ax – Spatial Reuse OBSS\_PD/TPC Examined,” Graham Smith (SR Technologies)
		8. AoB
		9. Adjourn
	2. Chair asked for comments and/or suggestions on the agenda. 🡪 No response.
	3. 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/14/11-14-0629-18-0000-802-11-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. **Attendance reminder**
	1. Chair asked the attendees to send an email to Yasu (inoue.yasuhiko@lab.ntt.co.jp) and/or Osama (osama.aboulmagd@huawei.com) to record attendance.
5. **Announcement**
	1. Chair asked to state name and affiliation when speaking for the first time.
	2. Chair also asked the attendees to put cellphone mute.
6. **TGax ad hoc meeting in May 2017**
	1. Chair asked people who are planning to attend TGax ad hoc meeting May 2017 in Seoul, Korea to send notification.
	2. Chair had sent out the attendees list.
7. **Presentations**
	1. **Graham Smith (SR Technologies) presented “TGax – Spatial Reuse OBSS\_PD/TPC Examined,” based on the submission 11-17-0582-00.**
		1. Summary
			1. Major issues in current OBSS\_PD based SR are;
				1. Assumed TPC scheme is not acceptable.
				2. Need a better method for decision to transmit.
			2. Case studies based on a simplified indoor small BSS and indoor enterprize scenarios have been presented.
		2. Discussion
			1. A member mentioned he understood the TPC might reduce the effective SINR. However it would be difficult for people to understand the graphs of evaluation. 🡪 Graham replied that it would be good to present it in advance.
			2. Another member mentioned that it would be good to stick to the OBSS\_PD-based SR and try to accommodate a mechanism to adjust the OBSS\_PD level. 🡪 Graham replied that a decision process is also necessary.
8. **AoB**
	1. Chair asked people planning to attend TGax ad hoc to send an email to him and Jinsoo.
	2. The next TGax teleconference is on Thursday, April 27th, 2017, from 10:00 (ET).
9. **Adjournment**
	1. TGax teleconference adjourned @ 21:20 (ET).
10. **List of Attendees**

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|  | **Name** | **Affiliation** |
| 1 | Osama Aboul-Magd | Huawei Technologies |
| 2 | Tomoko Adachi | Toshiba |
| 3 | Woojin Ahn | WILUS Institute |
| 4 | Yusuke Asai | NTT |
| 5 | Alfred Asterjadhi | Qualcomm |
| 6 | Laurent Cariou | Intel |
| 7 | Rojan Chitrakar | Panasonic |
| 8 | George Cherian | Qualcomm |
| 9 | Sean Coffey | RealTek |
| 10 | Yasuhiko Inoue | NTT |
| 11 | Junichi Iwatani | NTT |
| 12 | Geonjung Ko | Wilus Institute |
| 13 | Sungeun Lee | Cypress |
| 14 | Peter Loc | Huawei technologies |
| 15 | Jing Ma | NICT |
| 16 | Narendar Madhavan | Toshiba |
| 17 | Yuichi Morioka | Sony |
| 18 | Oghenekome Oteri | InterDigial |
| 19 | Abhishek Patil | Qualcomm |
| 20 | Albert Petrick | InterDigital |
| 21 | Jonathan Sagev | Intel |
| 22 | Yongho Seok | Newracom |
| 23 | Shoko Shinohara | NTT |
| 24 | Graham Smith | SR Technologies |
| 25 | John Son | Wilus |
| 26 | Yusuke Tanaka | Sony |
| 27 | Chao-Chun Wang | MediaTek |
| 28 | James Wang | MediaTek |
| 29 | David Xun Yang | Huawei technologies |
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# Teleconference on Thursday, April 27th, 2017, 10:00 – 12:00 (ET)

1. **Meeting called to order by Osama Aboul-Magd (Huawei Technologies), the chairperson of TGax @ 10:03 (ET).**
	1. Introduction of the chairperson and secretary.
2. **Agenda Setting**
	1. Proposed Agenda
		1. Call the meeting to order (done)
		2. Agenda Setting
		3. IEEE 802 and 802.11 IPR Policy and Procedure
		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. Announcement
		6. Reminder of TGax ad hoc meeting in Seoul, Korea.
		7. Presentations
			1. [11- 17-0553-01](https://mentor.ieee.org/802.11/dcn/17/11-17-0533-01-00ax-lb225-cr-27-16-1.docx), “LB225 CR Sub-clause 27.16.1,” Liwen Chu (Marvell)
			2. [11-17-0617-00](https://mentor.ieee.org/802.11/dcn/17/11-17-0617-00-00ax-bsr.docx), “Proposed Text Changes for BSR,” Eldad Perahia (HPE-Aruba)
			3. [11-17-0618-00](https://mentor.ieee.org/802.11/dcn/17/11-17-0618-00-00ax-bsr-preso.pptx), “BSR,” Eldad Perahia (HPE-Aruba)
			4. [11-17-0619-00](https://mentor.ieee.org/802.11/dcn/17/11-17-0619-00-00ax-client-management.docx), “Proposed Text Changes for Client Management,” Eldad Perahia (HPE-Aruba)
			5. [11-17-0620-00](https://mentor.ieee.org/802.11/dcn/17/11-17-0620-00-00ax-client-management-preso.pptx), “Client Management,” Eldad Perahia (HPE-Aruba)
		8. AoB
		9. Adjourn
	2. Chair asked for comments and/or suggestions on the agenda. 🡪 No response.
	3. 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/14/11-14-0629-18-0000-802-11-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. **Attendance reminder**
	1. Chair asked the attendees to send an email to Yasu (inoue.yasuhiko@lab.ntt.co.jp) and/or Osama (osama.aboulmagd@huawei.com) to record attendance.
5. **Announcement**
	1. Chair asked to state name and affiliation when speaking for the first time.
	2. Chair also asked the attendees to put cellphone mute.
6. **TGax ad hoc meetings**
	1. **May 2017**
		1. Chair asked people who are planning to attend TGax ad hoc meeting May 2017 in Seoul, Korea to send notification.
		2. Chair had sent out the attendees list.
	2. **6.2 July 2017**
		1. Need a host for the TGax July 2017 ad hoc meeting.
		2. There will be some options
			1. To have a meeting in somewhere such as SF bay area before the wek of the IEEE 802 Plenary.
			2. To have the meeting in Berlin before the week of the IEEE 802 Plenary. If we do not have a host, there will be additional fee.
		3. Details will be discussed and decided during the IEEE 802 May 2017 session.
7. **Presentations**
	1. **Eldad Perahia (HP Enteprize) presented “BSR,” based on the submission 11-17-0617-00 (text) and 11-17-0618-00 (preso).**
		1. Summary
			1. There are some information other than the queue size for the AP to schedule UL MU.
			2. The proposal is to include the Jitter/Latency and Bettery Level in the BSR.
			3. Proposed text contained in the 11-17-0617-00.
		2. Discussion
			1. A member asked for a question on the proposed text for the BSR – What is the reason for choosing the values of 20 ms for the latency and 5 ms for the jitter? 🡪 It is from the experience in the field. Simple values will be good for implementation. Those values can be negotiated.
			2. Another member asked a question how all those parameters actually helps AP to schedule the UL MU transmissions.
				1. Latency and jitter are good to consider for the UL MU scheduling.
				2. Battery level can be considered to give prority to the STAs operating in low battery level.
	2. **Eldad Perahia (HP Enteprize) presented “Client Management,” based on the submission 11-17-0619-00 (text) and 11-17-0620-00 (preso).**
		1. Summary
			1. As a resolution for the CID 5163, a capability of client management from the network is proposed for the purposes of better BSS transition (roaming) management and interference management for the spatial reuse technique.
			2. Proposed text contained in the 11-17-0619-00.
		2. Discussion
			1. A member suggested double check of reason code of the Association Response frame. It will be the status code.
			2. Another member commented that some of the information can be carried by the Beacons.
			3. Some members commented that additional elements need to be defined.
			4. A member discussed about the 802.11r feature in the dense environment.
		3. Next Step
			1. Eldad to give updated version of the document after Korea meeting.
8. **AoB**
	1. Chair asked people planning to attend TGax ad hoc to send an email to him and Jinsoo.
	2. The next TGax meeting is the Seoul ad hoc on May 3rd to 5th, 2017.
9. **Adjournment**
	1. TGax teleconference adjourned @ 11:33 AM (ET).
10. **List of Attendees (Need to Update!)**

|  |  |  |
| --- | --- | --- |
|  | **Name** | **Affiliation** |
| 1 | Osama Aboul-Magd | Huawei Technologies |
| 2 | Tomoko Adachi | Toshiba |
| 3 | Woojin Ahn | WILUS Institute |
| 4 | Yusuke Asai | NTT |
| 5 | Alfred Asterjadhi | Qualcomm |
| 6 | Sean Coffey | RealTek |
| 7 | Yasuhiko Inoue | NTT |
| 8 | Geonjung Ko | Wilus Institute |
| 9 | Sungeun Lee | Cypress |
| 10 | Peter Loc | Huawei technologies |
| 11 | Jing Ma | NICT |
| 12 | Abhishek Patil | Qualcomm |
| 13 | Albert Petrick | InterDigital |
| 14 | Eldad Perahia | HPE-Aruba |
| 15 | Mark Rison | Samsung |
| 16 | Sigurd Schelstraete | Quantenna |
| 17 | Yongho Seok | Newracom |
| 18 | Hung Hoon Suh | Huawei Technologies |
| 19 | Xiaofei Wang | InterDigital |
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