IEEE P802.11  
Wireless LANs

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| 802.11bf  Teleconference Minutes February 2021 | | | | |
| Date: 2021-02-23 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
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| Sang Kim | LG Electronics |  |  | sanggook.kim@lge.com |

Abstract

This document contains minutes for TG 802.11bf teleconferences in February 2021.

Rev 0: Minutes for TG 802.11bf teleconference on 2nd of February.

Rev 1: Minutes for TG 802.11bf teleconference on 23rd of February added.

Rev 2: Minor correction in relation to Motions 10b and 10c.

**Teleconference on Tuesday, February 2, 2021, 9:00am –11:00am (ET)**

**Proposed Agenda:**

* Call the meeting to order
* Patent policy and logistics
* TGbf Timeline
* Call for contribution
* Teleconference Times
* Technical motion (Motion 8-9)
* Presentation of submissions

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| --- | --- | --- | --- |
| **DCN** | **Author** | **Title** | **Time duration** |
| 21/0145 | Sang Kim (LG Electronics) | SP: Collaborative WLAN Sensing – Follow Ups | 15 mins |
| 21/0147 | Rui Du (Huawei) | SP: Definitions and scenarios of the WLAN sensing – follow ups | 15 mins |
| 20/1851 | Cheng Chen (Intel) | SP: Overview of Wi-Fi sensing protocol | 15 mins |

* Any other business
* Adjourn

**Teleconferences are subject to applicable policies and procedures, see below.**  
•       IEEE Code of Ethics  
–       <https://www.ieee.org/about/corporate/governance/p7-8.html>    
•       IEEE Standards Association (IEEE-SA) Affiliation FAQ  
–       <https://standards.ieee.org/faqs/affiliation.html>  
•       Antitrust and Competition Policy  
–       <https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/antitrust.pdf>  
•       IEEE-SA Patent Policy  
–       <http://standards.ieee.org/develop/policies/bylaws/sect6-7.html>    
–       <https://standards.ieee.org/about/sasb/patcom/>  
 •       IEEE 802 Working Group Policies &Procedures (29 Jul 2016)  
–       [http://www.ieee802.org/PNP/approved/IEEE\_802\_WG\_PandP\_v19.pdf](https://protect2.fireeye.com/v1/url?k=5e715d2a-02fb7fe5-5e711db1-0cc47ad93ea4-c0712d99b9889b4a&q=1&e=f61fa0ab-291b-4ac4-a25e-6335a767a660&u=http%3A%2F%2Fwww.ieee802.org%2FPNP%2Fapproved%2FIEEE_802_WG_PandP_v19.pdf)  
•       IEEE 802 LMSC Chair's Guidelines (Approved 13 Jul 2018)  
–       <https://mentor.ieee.org/802-ec/dcn/17/ec-17-0120-27-0PNP-ieee-802-lmsc-chairs-guidelines.pdf>  
•       Participation in IEEE 802 Meetings  
–       <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>  
•       IEEE 802.11 WG OM: (Approved 10 Nov 2017)  
–       https://mentor.ieee.org/802.11/dcn/14/11-14-0629-22-0000-802-11-operations-manual.docx

**Chair Tony Xiao Han (Huawei) calls the meeting to order at 9:00 am (ET). (Around 40 persons on the call)**

The Chair goes through slide 4 in document 11-21/0180r0, covering “Meeting Protocol, Attendance, Voting & Document Status”.

The Chair goes through slides 6 and 7, covering “Participants have a duty to inform the IEEE” and “Ways to inform IEEE”, respectively.

The Chair made a Call for Potentially Essential Patents. No potentially essential patents reported, and no questions asked

The Chair goes through slides 8-15, covering “Other Guideline for IEEE WG meetings”, “Patent related information”, “IEEE SA Copyright Policy”, “Participant behavior in IEEE-SA activities is guided by the IEEE Codes of Ethics & Conduct”, “Participants in the IEEE-SA “individual process” shall act independently of others, including employers”, “IEEE-SA standards activities shall allow the fair & equitable consideration of all viewpoints”, and “Required notices”.

The Chair goes through the proposed agenda, slide 16 and asks if there are any comments or questions. No response from the group.

The Chair asks if there is any objection to approve the agenda by unanimous consent. No response from the group so the agenda is approved by unanimous consent.

The Chair goes through the TGbf Timeline.

The Chair goes through call for contribution.

The Chair goes through the teleconference times.

**Motions:**

**Motion 8: Move to add the following to 11bf SFD:**

A sensing procedure allows a STA to perform WLAN sensing and obtain measurement results. A sensing session is an instance of a sensing procedure with associated operational parameters of that instance.

**Move:** Cheng Chen

**Second:** Solomon Trainin

**Results:** Motion passed by unanimous consent.

**Motion 9: Move to add the following to 11bf SFD:**

* Sensing initiator and sensing responder
  + Sensing initiator: a STA that initiates a WLAN sensing session
  + Sensing responder: a STA that participates in a WLAN sensing session initiated by a sensing initiator
* Sensing transmitter and sensing receiver
  + Sensing transmitter: a STA that transmits PPDUs used for sensing measurements in a sensing session
  + Sensing receiver: a STA that receives PPDUs sent by a sensing transmitter and performs sensing measurements in a sensing session
* A STA can assume multiple roles in one sensing session.

**Move:** Cheng Chen

**Second:** Edward Au

**Results:** Motion passed by unanimous consent.

**Presentations:**

**11-21/0145r3, “Collaborative WLAN Sensing – Follow Ups”, Sang Kim (LGE):**

The contribution as such has been presented in the previous teleconference, where also SP 1 was run. The intention is to present and run SP2 and SP3.

**Straw Poll 2:** Do you support the receiving station reports with the channel information to the initiator?

**Straw Poll 3:** Do you support the receiving station reports with the channel measurement between sensing responders to the initiator?

After a rather lengthy discussion both SP2 and SP3 are deferred.

**11-21/0147r2, “Definitions and scenarios of the WLAN sensing – follow-up”, Rui Du (Huawei):** Revision 0 of this document was presented in the previous teleconference. The difference between r0 and r2 is that some wording has been slightly updated according to the presenter. The intention is to run the SPs.

**Straw Poll 1:**

**Do you agree with the following?**

A sensing initiator might be neither a sensing transmitter nor a sensing receiver.

**Y/N/A: 21/5/7**

**Straw Poll 2:**

**Do you agree with the following?**

Results of measurement performed in a sensing session should be obtained by or reported to its initiator.

**Y/N/A: 17/5/9**

**Straw Poll 3:**

**Do you agree with the following?**

The 11bf amendment define more than one type of sensing measurement results.

**Y/N/A: 27/1/3**

**Straw Poll 4:**

Do you agree with the following?

The type of measurement result obtained in a sensing session shall be decided by its initiator.

**Y/N/A: 18/4/8**

We are running out of time.

Tony asks if there is any other business. No response from the group.

**The meeting is adjourned without objection at 11:05 am (ET).**

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 2/2 | Al Falujah, Iyad | ON Semiconductor |
| TGbf | 2/2 | Au, Kwok Shum | Huawei Technologies Co., Ltd |
| TGbf | 2/2 | Aygul, Mehmet | Istanbul Medipol University; Vestel |
| TGbf | 2/2 | Beg, Chris | Cognitive Systems Corp. |
| TGbf | 2/2 | Bluschke, Andreas | Signify |
| TGbf | 2/2 | Bredewoud, Albert | Broadcom Corporation |
| TGbf | 2/2 | Chayat, Naftali | Vayyar Imaging |
| TGbf | 2/2 | Choi, Jinsoo | LG ELECTRONICS |
| TGbf | 2/2 | da Silva, Claudio | Intel Corporation |
| TGbf | 2/2 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 2/2 | Du, Rui | Huawei Technologies Co., Ltd |
| TGbf | 2/2 | feng, Shuling | MediaTek Inc. |
| TGbf | 2/2 | Grigat, Michael | Deutsche Telekom AG |
| TGbf | 2/2 | HAN, Xiao | Huawei Technologies Co., Ltd |
| TGbf | 2/2 | Haskou, Abdullah | InterDigital, Inc. |
| TGbf | 2/2 | Jang, Insun | LG ELECTRONICS |
| TGbf | 2/2 | Kadampot, Ishaque Ashar | Qualcomm Incorporated |
| TGbf | 2/2 | Kim, Sang Gook | LG ELECTRONICS |
| TGbf | 2/2 | Kwon, Young Hoon | NXP Semiconductors |
| TGbf | 2/2 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 2/2 | McCann, Stephen | Huawei Technologies Co., Ltd |
| TGbf | 2/2 | Merlin, Simone | Qualcomm Incorporated |
| TGbf | 2/2 | Ozbakis, Basak | VESTEL Electronics Corp. |
| TGbf | 2/2 | PESIN, ANTHONY | InterDigital, Inc. |
| TGbf | 2/2 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 2/2 | Sahin, Onur | InterDigital, Inc. |
| TGbf | 2/2 | Solaija, Muhammad Sohaib | Istanbul Medipol University; Vestel |
| TGbf | 2/2 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| TGbf | 2/2 | Sun, Yingxiang | Huawei Technologies Co. Ltd |
| TGbf | 2/2 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 2/2 | Tsai, Tsung-Han | MediaTek Inc. |
| TGbf | 2/2 | Wang, Chao Chun | MediaTek Inc. |
| TGbf | 2/2 | Wilhelmsson, Leif | Ericsson AB |
| TGbf | 2/2 | Xin, Yan | Huawei Technologies Co., Ltd |
| TGbf | 2/2 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 2/2 | Yee, James | MediaTek Inc. |
| TGbf | 2/2 | Zhang, Meihong | Huawei Technologies Co., Ltd |
| TGbf | 2/2 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |

**Teleconference on Tuesday, February 23, 2021, 9:00am –11:00am (ET)**

**Proposed Agenda:**

* Call the meeting to order
* Patent policy and logistics
* TGbf Timeline
* Call for contribution
* Teleconference Times
* Technical motion (Motion 10-13)
* Presentation of submissions

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| --- | --- | --- | --- |
| **DCN** | **Author** | **Title** | **Time duration** |
| 20/1851 | Cheng Chen (Intel) | SP: Overview of Wi-Fi sensing protocol | 15 mins |
| 21/0145 | Sang Kim (LG Electronics) | SP: Collaborative WLAN Sensing – Follow Ups | 15 mins |
|  |  |  |  |

* Any other business
* Adjourn

**Teleconferences are subject to applicable policies and procedures, see below.**  
•       IEEE Code of Ethics  
–       <https://www.ieee.org/about/corporate/governance/p7-8.html>    
•       IEEE Standards Association (IEEE-SA) Affiliation FAQ  
–       <https://standards.ieee.org/faqs/affiliation.html>  
•       Antitrust and Competition Policy  
–       <https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/antitrust.pdf>  
•       IEEE-SA Patent Policy  
–       <http://standards.ieee.org/develop/policies/bylaws/sect6-7.html>    
–       <https://standards.ieee.org/about/sasb/patcom/>  
 •       IEEE 802 Working Group Policies &Procedures (29 Jul 2016)  
–       [http://www.ieee802.org/PNP/approved/IEEE\_802\_WG\_PandP\_v19.pdf](https://protect2.fireeye.com/v1/url?k=5e715d2a-02fb7fe5-5e711db1-0cc47ad93ea4-c0712d99b9889b4a&q=1&e=f61fa0ab-291b-4ac4-a25e-6335a767a660&u=http%3A%2F%2Fwww.ieee802.org%2FPNP%2Fapproved%2FIEEE_802_WG_PandP_v19.pdf)  
•       IEEE 802 LMSC Chair's Guidelines (Approved 13 Jul 2018)  
–       <https://mentor.ieee.org/802-ec/dcn/17/ec-17-0120-27-0PNP-ieee-802-lmsc-chairs-guidelines.pdf>  
•       Participation in IEEE 802 Meetings  
–       <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>  
•       IEEE 802.11 WG OM: (Approved 10 Nov 2017)  
–       https://mentor.ieee.org/802.11/dcn/14/11-14-0629-22-0000-802-11-operations-manual.docx

**Chair Tony Xiao Han (Huawei) calls the meeting to order at 9:00 am (ET). (Around 50 persons on the call)**

The Chair goes through slide 4 in document 11-21/0180r1, covering “Meeting Protocol, Attendance, Voting & Document Status”.

The Chair goes through slides 6 and 7, covering “Participants have a duty to inform the IEEE” and “Ways to inform IEEE”, respectively.

The Chair made a Call for Potentially Essential Patents. No potentially essential patents reported, and no questions asked

The Chair goes through slides 8-15, covering “Other Guideline for IEEE WG meetings”, “Patent related information”, “IEEE SA Copyright Policy”, “Participant behavior in IEEE-SA activities is guided by the IEEE Codes of Ethics & Conduct”, “Participants in the IEEE-SA “individual process” shall act independently of others, including employers”, “IEEE-SA standards activities shall allow the fair & equitable consideration of all viewpoints”, and “Required notices”.

The Chair goes through the proposed agenda, slide 22 and asks if there are any comments or questions. No response from the group.

The Chair asks if there is any objection to approve the agenda by unanimous consent. No response from the group so the agenda is approved by unanimous consent.

The Chair goes through the TGbf Timeline.

The Chair goes through call for contribution.

The Chair goes through the teleconference times. May 4th call is rescheduled to April 27th. It is noted that daylight saving in US will start from March 14th, 2021 and thus it is better to go back to normal time starting from 10:00 AM ET. The calls on March 23rd, April 6th, April 20th, and April 27th will start from 10:00 AM ET until 12:00 PM ET.

**Motions:**

**Motion 10:** Move to add the following to 11bf SFD:

- A sensing initiator might be neither a sensing transmitter nor a sensing receiver.

**Move**: Rui Dui

**Second**: Claudio da Silva

Numerous questions, comments, and responses are discussed:

**Q**: Is this wording correct?

**A**: It considers sensing initiator’s role just to emphasize to initiate a sensing session. This is the final choice based on the discussions in the previous calls.

**Q**: A sensing initiator is not a transmitter and receiver. Is then the sensing initiator a STA?

**A**: Yes, it is.

**C**: Only 4 roles are defined in SFD without context. In this case, the sensing initiator does not participate a sensing procedure.

**Q**: The sensing initiator is a transmitter or a receiver. “Neither” cannot be either of them.

**A**: This is what we agreed and want to maintain the original sentence.

**C**: Since we have a motion on the table, in order to change it is required either to be postponed or tabled. We need to amend the motion first. Chair stated that it will be decided by Rui.

Modified motion text was proposed in the chat box as “A sensing initiator might be a sensing transmitter, a sensing receiver, both or neither.” Supporting comment is raised, but cannot move due to the lack of voting right.

**C**: Suggestion is made to add “During a sensing session” in the original motion text to make it general, but is responded that it does not resolve the current logic problem situation.

**Q**: Should “both” be included?

**A**: “Both” should be allowed to include all cases. This answer receives a supporting remark. It is stated that “both” must be there to include “monostatic” case. Without it, it cannot be approved.

**C**: During the last minute, to add different element is not good for the future and procedurally it will hurt. Even though the text is OK, we discussed 2 calls and spent more than a month. At the voting, we open the discussion again and we should avoid it.

**A**: We are acting based on the procedure and this is highly appropriate. Original text is limited.

**C**: Motion mover stated that the modification is exactly what he proposed, but during the discussion it was changed as in Motion 10 and he expressed his confusion and stated that if discussion is needed, then it is better done before the meeting.

Motion is made to amend Motion 10.

**Motion 10b**: Motion to amend

Change the previous motion to:

Move to add the following to 11bf SFD:

- In a sensing session, a sensing initiator might be a sensing transmitter, a sensing receiver, both or neither.

**Move**: Edward Au on behalf of Naftali Chayat

**Second**: Assaf Kasher.

**Results**: **24Y, 4N, 1A. Motion passed.**

**Motion 10c**:

Move to add the following to 11bf SFD

- In a sensing session, a sensing initiator might be a sensing transmitter, a sensing receiver, both or neither.

**Move**: Edward on behalf of Naftali Chayat

**Second**: Assaf Kasher

**Results**: **22Y, 0N, 4A. Motion passed.**

**Motion 11:** Move to add the following to 11bf SFD:

- Results of measurement performed in a sensing session should be obtained by or reported to its initiator.

**Move**: Rui Dui

**Second**: Cheng Chen

**Q**: What is the difference between “obtained by” and “reported by”? If the TX and RX in the initiator, then TX & RX communications is “obtained by”?

**A**: Yes.

**C**: Confusion is caused by using both “obtain” and “report”. Obtain is more general and report means direct report.

**C**: “Obtain” does not define communications and “report” does. Keep current text as it is.

**C**: Need to change “initiator” to “sensing initiator”. Replied that “session” is there, we don’t need it.

**C**: Current text excludes one scenario in which receiver receives and process, but not report. Replied that we use “should” and it does not preclude the case mentioned.

**Results**: **21Y 0N 3A. Motion Passed.**

**Motion 12:** Move to add the following to 11bf SFD:

- The 11bf amendment may define more than one type of sensing measurement results.

**Move**: Rui Dui

**Second**: Oscar Au

No question and comment noted.

**Results**: **Motion passed by unanimous consent.**

**Motion 13:** Move to add the following to 11bf SFD:

- The type of measurement result obtained in a sensing session shall be decided by its initiator.

**Move**: Rui Dui

**Second**: Assaf Kasher

**Q**: It needs to change “decide by” to “announced by”. By default, initiator can accept or reject. Not clear to use “decide by”. In addition, in the previous motion, “obtained” or “reported” is used. In this case, is “reported: excluded? It should be consistent.

**A**: Got point.

**C**: To make it clearer, suggestion is to use “obtained by or reported to sensing initiator”. Comment is that “obtained and reported” is not perfect and “obtained or reported” is ambiguous and suggestion is to use “reported”. The same opinion is noted.

**C**: We need to amend the motion first.

**A**: Chair replied that there are two kinds of amendment: Friendly amendment and Official amendment.

**C**: To amend the motion mover and seconder have to agree the amendment.

Motion is taken as it is in original text.

Results: **20Y 1N 3A. Motion is passed.**

Chair highly suggests that we need to use the reflector to discuss the technical parts in order to save the time.

**11-20/1851r1, “Overview of Wi-Fi sensing protocol”, Cheng Chen (Intel):** Revision 0 of this document was presented. Summary of the contribution is given. Straw Poll #1 is presented:

* **Do you agree with the following?**
  + A sensing session is composed of one or more of the following phases: negotiation phase, measurement phase, and termination phase.
    - In the negotiation phase, operational parameters associated with the sensing session are exchanged between STAs.
    - In the measurement phase, sensing measurements are performed and sensing results are reported.
    - In the termination phase, STAs stop performing measurements and terminate the sensing session.

**Q**: Negotiation phase should include the setup operation parameters. When is a sensing session established? Initiation of sensing session is not mentioned in the 3 phases. Is it another phase?

**A**: It is predetermined>

**Q**: Is predetermination another phase?

**A**: After initiation, 3 phases are defined.

**C**: Since “establishment” or “setup” is not mentioned, separate phase should be defined.

**Q**: Are multiple measurements allowed in a single measurement phase? Is it including reports?

**A**: Measurement somehow includes report. Multiple measurements and one reporting is also possible.

Chair asked if there is any concern extending the call 5 min. There is concern so the call is no extended.

**The call is adjourned at 11:01 AM ET.**

**List of Attendees:**

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| TGbf | 2/23/2021 9:03 | Al Falujah, Iyad | ON Semiconductor |
| TGbf | 2/23/2021 9:03 | Au, Kwok Shum | Huawei Technologies Co.,  Ltd |
| TGbf | 2/23/2021 9:02 | Au, Oscar | Origin Wireless |
| TGbf | 2/23/2021 10:51 | Aygul, Mehmet | Vestel |
| TGbf | 2/23/2021 10:07 | Carney, William | Sony Corporation |
| TGbf | 2/23/2021 9:03 | Chayat, Naftali | Vayyar Imaging |
| TGbf | 2/23/2021 9:42 | Cheng, Gang | Nokia |
| TGbf | 2/23/2021 9:09 | Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 2/23/2021 9:04 | Choi, Jinsoo | LG ELECTRONICS |
| TGbf | 2/23/2021 9:37 | Costa, D.Nelson | Peraso Technologies Incorporated |
| TGbf | 2/23/2021 10:48 | da Silva, Claudio | Intel Corporation |
| TGbf | 2/23/2021 9:01 | Dong, Xiandong | Xiaomi Inc. |
| TGbf | 2/23/2021 10:51 | Du, Rui | Huawei Technologies Co. Ltd |
| TGbf | 2/23/2021 9:08 | Erell, Assaf | Vayyar ltd. |
| TGbf | 2/23/2021 9:32 | feng, Shuling | MediaTek Inc. |
| TGbf | 2/23/2021 10:44 | Fridman, Roi | Vayyar Imaging |
| TGbf | 2/23/2021 9:06 | Grigat, Michael | Deutsche Telekom AG |
| TGbf | 2/23/2021 10:50 | Jang, Insun | LG ELECTRONICS |
| TGbf | 2/23/2021 10:01 | jiang, yiming | Nokia |
| TGbf | 2/23/2021 9:05 | Kadampot, Ishaque Ashar | Qualcomm Incorporated |
| TGbf | 2/23/2021 9:02 | Kasher, Assaf | Qualcomm Incorporated |
| TGbf | 2/23/2021 9:01 | Kwon, Young Hoon | NXP Semiconductors |
| TGbf | 2/23/2021 9:06 | Lim, Dong Guk | LG ELECTRONICS |
| TGbf | 2/23/2021 9:03 | Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| TGbf | 2/23/2021 9:06 | Raissinia, Alireza | Qualcomm Incorporated |
| TGbf | 2/23/2021 9:21 | Rantala, Enrico-Henrik | Nokia |
| TGbf | 2/23/2021 9:13 | Sahin, Onur | InterDigital, Inc. |
| TGbf | 2/23/2021 9:15 | Sosack, Robert | Molex Incorporated |
| TGbf | 2/23/2021 9:05 | SUH, JUNG HOON | Huawei Technologies Co. Ltd |
| TGbf | 2/23/2021 9:02 | Sun, Yingxiang | Huawei Technologies Co. Ltd |
| TGbf | 2/23/2021 9:01 | Trainin, Solomon | Qualcomm Incorporated |
| TGbf | 2/23/2021 9:29 | Tsai, Tsung-Han | MediaTek Inc. |
| TGbf | 2/23/2021 9:33 | Wang, Chao Chun | MediaTek Inc. |
| TGbf | 2/23/2021 9:10 | Wizenberg, Reut | Vayyar Imaging |
| TGbf | 2/23/2021 10:48 | Xin, Yan | Huawei Technologies Co., Ltd |
| TGbf | 2/23/2021 9:02 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| TGbf | 2/23/2021 9:04 | Yee, James | MediaTek Inc. |
| TGbf | 2/23/2021 9:34 | Zeng, Ruochen | NXP Semiconductors |
| TGbf | 2/23/2021 9:02 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |