IEEE P802.11  
Wireless LANs

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| UHR SG January Feburary 2023 teleconference minutes | | | | |
| Date: 2023-02-06 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Ross Jian Yu | Huawei | Building F3, Huawei Industrial Base, Shenzhen, Guangdong, China |  | ross.yujian@huawei.com |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This document contains the minutes for UHR SG Jan Feb 2023 teleconference.

Revision history:

* Rev0: initial version.
* Rev1: add minutes for the 2nd call

Abbreviations:

* A: Answer
* C: Comment

# 1st Conf. Call: Feb 6th Monday (10:00–12:00 ET)

* The Chair, Laurent Cariou (Intel), calls the meeting to order.
* IEEE 802 and 802.11 IPR policy and procedure
  + Patent Policy: Ways to inform IEEE:
    - Cause an LOA to be submitted to the IEEE-SA ([patcom@ieee.org](mailto:patcom@ieee.org)); or
    - Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
    - Speak up now and respond to this Call for Potentially Essential Patents

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair. **Nobody speaks/writes up**.

* + Copyright Policy: Participants are advised that
    - IEEE SA’s copyright policy is described in [Clause 7](https://standards.ieee.org/about/policies/bylaws/sect6-7.html#7) of the IEEE SA Standards Board Bylaws and [Clause 6.1](https://standards.ieee.org/about/policies/opman/sect6.html) of the IEEE SA Standards Board Operations Manual;
    - Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE SA Copyright Policy

**Copyright Policy was presented.**

* + **Patent, Participation, Copyright and policy related subclause:** Please refer to Patent And Procedures
* Attendance reminder.
  + Participation slide: <https://mentor.ieee.org/802-ec/dcn/16/ec-16-0180-05-00EC-ieee-802-participation-slide.pptx>
  + Please record your attendance during the conference call by using the IMAT system:
    - 1) login to [imat](https://imat.ieee.org/attendance), 2) select “802.11 Telecons (<Month>)” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click “<UHR SG > conference call that you are attending.
  + If you are unable to record your attendance contact Laurent Cariou ([laurent.cariou@intel.com](mailto:laurent.cariou@intel.com)) and Ross Jian Yu ([ross.yujian@huawei.com](mailto:ross.yujian@huawei.com)) for assistance
  + Please ensure that the following information is listed correctly when joining the call:
    - "[voter status] First Name Last Name (Affiliation)"
* Agenda
  + Chair reviews proposed agenda found in [11-22-0169r](https://mentor.ieee.org/802.11/dcn/23/11-23-0169-01-0uhr-uhr-sg-jan-feb-2023-teleconference-agendas.docx)1
  + Discussion:
    - 11-23/0016r0 is requested by the author to be removed from the agenda.
  + Agenda approved with unanimous consent.
* Announcements:
  + None
* Submissions
  + [11-22/2204r0](https://mentor.ieee.org/802.11/dcn/22/11-22-2204-00-0uhr-dynamic-subband-operation.pptx) Dynamic Subband Operation Sindhu Verma (Broadcom)
    - C: The assumption is that AP is 320MHz, STA is 160MHz. Your SP is more general.
    - A: 320 and 160 MHz are used as an example of illustration.
    - C: one of the motivations is that if the AP and STA are engaged in primary channel. If the primary channel is busy, how do we use secondary channel? Do you have any thought?
    - A: there is another feature, we have a presentation even in 11be, non-primary channel utilization.
    - C: We should see how we overall use the whole spectrum with some STA being able to engage in subband.
    - C: The first and second control such as MU-RTS, responds with CTS in S160. According to the current rule, CTS is only transmitted in P20/40… Are you considering the CTS frames in secondary channels only?
    - A: yes. It is more general than that. And the primary channel will be used by those STAs that remain in primary channels.
    - C: there should be a short switch delay.
    - A: it has to have some optimal latency. The swith will not be more than 100us.
    - C: many implementations, the delay is larger than that. Will double check.
    - C: The intiation of the TXOP, if there is no response in S160, it does not follow the current CTS response rule.
    - A: The AP suppose to have wider channel. The AP could occupy the large bandwidth using the intial control frame. The AP will make sure the entire channel is occupied and channel sensing is in any part of the channels.C
  + [11-23/0010r0](https://mentor.ieee.org/802.11/dcn/23/11-23-0010-00-0uhr-considerations-for-enabling-ap-power-save.pptx) Considerations for enabling AP power save Alfred Asterjadhi (Qualcomm Inc.)
    - C: Have you considered for legacy compatible?
    - A: Yes
  + [11-23/0015r0](https://mentor.ieee.org/802.11/dcn/23/11-23-0015-00-0uhr-ap-mld-power-management.pptx) AP MLD power management Liwen Chu (NXP)
    - C: Slide 10, for the 3rd bullet, slide 6, legacy STA will assume the AP will be always available. Do you have any thought regarding the 3rd bullet?
    - A: In the previous slide, the AP can announce which kinds of STA can associate to it based on basic rate set element. No legacy STAs will associate with this AP. The AP can enable this AP power management mode if the AP doesn’t want to associate more STAs.
    - C: You mention one AP should be in active mode. Do we still need short AP announcement.
    - A: No. We assume we have single link AP device. Cannot assume always one link will be available.
    - C: Support this direction. Slide 12, the requirement for the active on one link.
    - A: STA need to buffer data if all APs are in power save mode.
    - C: if the STAs are also in active mode, the STAs will transmit in active link anyway.
    - A: if you think .11ax and .11ac AP, similar AP has bandwidth and switched to narrow band, the STA does not need to buffer its data.
  + [11-23/0018r0](https://mentor.ieee.org/802.11/dcn/23/11-23-0018-00-0uhr-low-latency-support-in-uhr.pptx) Low latency support in UHR Kiseon Ryu (NXP)
    - C: Slide 7, case 1, what is the xIFS between BA and LL data?
    - A: We can consider two types of cases to support this oepratoin. AP can indicate some preemption to the STA1. STA1 doesn’t’ transmit the following PPDU to the AP. The second one is that we can consider different xIFS. Larger xIFS for non-Low latency frame.
    - C: Case 3, how AP knows whether there is LL data from STA2?
    - A: It is challenging, an issue to solve. If the TXOP length is larger than a threshold, the AP can schedule a period within the TXOP.
    - C: there could be multiple low latency STAs? The AP doesn’t know which STAs have LL data.
    - A: TF-R, trigger for random access.
    - C: Case 2, the STA2 may go to power save mode. How does STA2 know there will be LL traffic for him?
    - A: TXOP power save mode is not supported in 11ax and 11be. If STA 2 is in TWT operation, then the AP may not transmit to STA 2 outside of TWT SP. AP can transmit to STA 2 if STA 2 is not in power save mode.
    - C: Case 4, aggressive spatial reuse, do you mean it can interrupts current transmission?
    - A: we already have some spatial reuse operation, like SRG PSR based or OBSS-PD based.We can discuss some different rules for low latency transmission. Usually low latency transmissions are short packets. Can define OBSS PD levels, can define some other rules. Can discuss further.

Back to agenda discussion

11-23/0037r0 is added to the agenda.

* + [11-23/0037r0](https://mentor.ieee.org/802.11/dcn/23/11-23-0037-00-0uhr-uhr-feature-to-overcome-psd-limitations-distributed-tone-resource-units.pptx) UHR Feature to Overcome PSD Limitations Distributed-Tone Resource Units Jianhan Liu (Mediatek Inc.)
    - C: How do you handle the control frame?
    - A: In wider bandwidth, no power limitation. 80MHz trigger, using non-HT duplicate. For MU-RTS, you can transmit in wider bandwidth. CTS, you can also transmit on wider bandwidth.
    - C: Need more examination if the whole mechanism can work.
    - A: I have one user, 80MHz, transmitting on red tones. Another user transmits on all the tones. It has the coding gain, same rate, same range. Whilst the data rate will not be comparable for the UL case.
    - C: I have asked you questions on spectrum mask in Jan meeting.
    - A: can define using the same mask for unused tone EVM.
    - C: typically, Wi-Fi device has its own crystal., when doing distributed RU, will increase ICI for UL packets? How the SNR boost vs the increased ICI?
    - A: very good question. Will indeed introduce more ICI. Our simulation results show, if there is no synchronization error, ICI will not be a problem. According to current TB transmission accuracy for regular RU, you could loose 1.5dB for the worst case. If we tighten the synchronization a little bit, the loss could be reduced. If we could increase the power by 8dB and loose 1-1.5dB back. You could also get it back by using ICI equalization.
    - C: Would be good if you show the results.
    - A: will share it in the TG.
    - C: compare with Regular RU, this DRU, for Rx fitler design, any difference?
    - A: I didn’t see any anlog filter need to be changed here.
* Recessed at 11:59 ET

# 2nd Conf. Call: Feb 27th Monday (10:00–12:00 ET)

* The Chair, Laurent Cariou (Intel), calls the meeting to order.
* IEEE 802 and 802.11 IPR policy and procedure
  + Patent Policy: Ways to inform IEEE:
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**Copyright Policy was presented.**

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* Agenda
  + Chair reviews proposed agenda found in [11-22-0169r](https://mentor.ieee.org/802.11/dcn/23/11-23-0169-02-0uhr-uhr-sg-jan-feb-2023-teleconference-agendas.docx)2
  + Discussion:
    - C: Put 1910r1 to the end of the queue.
  + Agenda approved with unanimous consent.
* Announcements:
  + None
* Techinical Submissions
* Technical Submissions**:** 
  + [11-23/0016r0](https://mentor.ieee.org/802.11/dcn/23/11-23-0016-00-0uhr-single-radio-mld.pptx) single radio MLD Liwen Chu
    - No one asks any questions.
  + [11-23/0034r0](https://mentor.ieee.org/802.11/dcn/23/11-23-0034-00-0uhr-non-primary-channel-utilization.pptx) Non-primary Channel Utilization Sindhu Verma
    - C: How do you deal with legacy smaller bandwidth devices?
    - A: The non-primary channel usage depends on the primary channel is occupied.
    - C: What if the non-AP STA is the hidden node?
    - A: There needs to be some synchronization between the Tx and Rx. If the Rx sees it, the Tx does not, the Rx can reject the request to send.
    - C: for the anchor channels, need to under the preamble.
    - A: the preamble needs to be decoded.
    - C: Did you have some research on the below issue, there is BSS1 and BSS2. Also have BSS 3. BSS 3 is only the OBSS of BSS2. If AP1 gets P80, AP2 jumps to S80, AP3 cannot hear AP1, AP2 is actively operating on secondary channel of AP3. It may interrupt BSS3’s transmission. If AP3 wants to contend the channel, he may think the whole 160MHz is available, if they don’t do packet detection on S80.
    - A: You may have the same concern as the previous commenter.
    - C: Not necesarrily hidden node. It is recommend to align the primary channel. Now the proposal is like to not align the primary channel.
  + [11-23/0041r0](https://mentor.ieee.org/802.11/dcn/23/11-23-0041-00-0uhr-considerations-on-coordinated-tdma.pptx) Considerations on Coordinated TDMA Yanjun Sun
    - C：What is the benefits of C-TDMA?
    - A: The main benefit is low latency. When the AP shares the TXOP more often, they can help each node get more access to the medium. For device is suffering interference, TDMA can help those devices as well.
    - C: Slide 7, I agree the problem at slide 7, but the sharing the AP may set the NAV value to cover the whole TXOP. CS required may need to be ignored for UL traffics. We can solve this kind of problem.
    - A: When the shared AP transmits, it already gets a TXOP, it may set it to a longer duration. We cannot provide TXOP protection at the beginning.
    - C: Has similar thought as the prevouis commenter.
    - A: for UHR STA, the NAV rule may be more flexible. If the group is not willing to change the NAV rule too much, following the way the previous commenter says, we don’t need to change anything.
    - C: you prefer to limit to one shared AP. If we leverage the length of the TXOP, if the shared AP assigns the TXOP to one shared AP, can the sharing AP assigned the TXOP to another shared AP?
    - A: here, we want to say we want to ensure at least the one AP case works.
  + [11/23-0045r1](https://mentor.ieee.org/802.11/dcn/23/11-23-0045-01-0uhr-urgency-based-delivery-of-latency-sensitive-traffic.pptx) Urgency-based Delivery of Latency Sensitive Traffic Liuming Lu
    - C: This is an important direction. For your current latency metric, does it easy for the client to compute?
    - A: It depends on implementation. Two method are evaluated on latency are shown. The second may be low on overhead. I think it may be the method should be further researched to lower overhead for evaluatoin. More detailed proposal needs to be made.

Discussion on the agenda:

C: request to defer 1910r2 to F2F.

Discussion on the plan of Atlanta meeting.

C: There is email calling for contribution. We need to finalize things in the Atlanta meeting. What is your plan?

A: I am going to send an email to clarify the plan. Still try to have PAR and CSD approved in March. Go to EC at the end of July meeting. Mmwave will have strong impact. May have vote on this. Have to resolve the pending issues. The fast way is to start the task group in Nov. Will use the remaining of the time for more depth discussion.

C: besides mmwave, do you expect there will be discussion on specific numbers?

A: Obviosuly there are still some questions. Pending for the Nescom rules. Explain the reason why we did that.

C: do you expect there will be numbers for robustness?

A: still need discussion.

Adjourned at 11:49 ET.

# Appendix

* + Attendee List for 1st Conf. Call:

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| UHR | 2/6 | Aboulmagd, Osama | Huawei Technologies Co., Ltd |
| UHR | 2/6 | Aio, Kosuke | Sony Corporation |
| UHR | 2/6 | Ajami, Abdel Karim | Qualcomm Technologies, Inc |
| UHR | 2/6 | Andersdotter, Amelia | Sky Group/Comcast |
| UHR | 2/6 | Asai, Yusuke | NTT |
| UHR | 2/6 | Asterjadhi, Alfred | Qualcomm Technologies, Inc |
| UHR | 2/6 | Baek, SunHee | LG ELECTRONICS |
| UHR | 2/6 | Baykas, Tuncer | Ofinno |
| UHR | 2/6 | Bluschke, Andreas | Representing myself |
| UHR | 2/6 | Bredewoud, Albert | Broadcom Corporation |
| UHR | 2/6 | Carney, William | Sony Group Corporation |
| UHR | 2/6 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| UHR | 2/6 | Chitrakar, Rojan | Huawei International Pte Ltd |
| UHR | 2/6 | Chng, Shi Baw | BAWMAN LLC |
| UHR | 2/6 | Choi, Jinsoo | LG ELECTRONICS |
| UHR | 2/6 | Chu, Liwen | NXP Semiconductors |
| UHR | 2/6 | CHUN, JINYOUNG | LG ELECTRONICS |
| UHR | 2/6 | Chung, Chulho | SAMSUNG |
| UHR | 2/6 | Dong, Xiandong | Xiaomi Communications Co., Ltd. |
| UHR | 2/6 | Erkucuk, Serhat | Ofinno |
| UHR | 2/6 | Fan, Shuang | Sanechips Technology Co., Ltd. |
| UHR | 2/6 | Fujimori, Yuki | Canon Research Centre France |
| UHR | 2/6 | Gorthi, Hemamali | Infineon Technologies |
| UHR | 2/6 | GUIGNARD, Romain | Canon Research Centre France |
| UHR | 2/6 | Guo, Ziyang | Huawei Technologies Co., Ltd |
| UHR | 2/6 | Gupta, Binita | Meta Platforms, Inc. |
| UHR | 2/6 | Haider, Muhammad Kumail | Meta Platforms Inc. |
| UHR | 2/6 | Handte, Thomas | Sony Group Corporation |
| UHR | 2/6 | Hervieu, Lili | Cable Television Laboratories Inc. (CableLabs) |
| UHR | 2/6 | Hsu, Ostrovsky | Xiaomi Communications Co., Ltd. |
| UHR | 2/6 | Huang, Lei | Huawei International Pte Ltd |
| UHR | 2/6 | Huang, Po-Kai | Intel |
| UHR | 2/6 | Huq, Kazi Mohammed Saidul | Ofinno |
| UHR | 2/6 | Ik, Jang | Gachon University |
| UHR | 2/6 | Inohiza, Hirohiko | Canon |
| UHR | 2/6 | Jeon, Eunsung | SAMSUNG ELECTRONICS |
| UHR | 2/6 | kamath, Manoj | Broadcom Corporation |
| UHR | 2/6 | Kamel, Mahmoud | InterDigital, Inc. |
| UHR | 2/6 | Kasher, Assaf | Qualcomm Incorporated |
| UHR | 2/6 | Kim, Geon Hwan | LG ELECTRONICS |
| UHR | 2/6 | Kim, Hyungjin | Broadcom Corporation |
| UHR | 2/6 | Kim, Jeongki | Ofinno |
| UHR | 2/6 | Kim, Sang Gook | LG ELECTRONICS |
| UHR | 2/6 | Kim, Sanghyun | WILUS Inc. |
| UHR | 2/6 | Kim, Youhan | Qualcomm Technologies, Inc. |
| UHR | 2/6 | Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) |
| UHR | 2/6 | Klein, Arik | Huawei Technologies Co., Ltd |
| UHR | 2/6 | Kneckt, Jarkko | Apple, Inc. |
| UHR | 2/6 | Ko, Geonjung | WILUS Inc. |
| UHR | 2/6 | Lim, Dong Guk | LG ELECTRONICS |
| UHR | 2/6 | Liu, Jianhan | MediaTek Inc. |
| UHR | 2/6 | Lorgeoux, Mikael | Canon Research Centre France |
| UHR | 2/6 | Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| UHR | 2/6 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| UHR | 2/6 | Ma, Yunsi | HiSilicon (Shanghai) Technologies Co., LTD. |
| UHR | 2/6 | Madpuwar, Girish | Synaptics |
| UHR | 2/6 | Mantha, Abhishek | Broadcom Corporation |
| UHR | 2/6 | MAO, ZHI | Huawei Technologies Co., Ltd |
| UHR | 2/6 | Martinez Vazquez, Marcos | MaxLinear Corp |
| UHR | 2/6 | Max, Sebastian | Ericsson AB |
| UHR | 2/6 | Miwa, Shinya | Canon Research Centre France |
| UHR | 2/6 | Moelker, Dignus-Jan | Broadcom Corporation |
| UHR | 2/6 | Mukkapati, Lakshmi Narayana | Wi-Fi Alliance |
| UHR | 2/6 | Mutgan, Okan | Nokia |
| UHR | 2/6 | Nayak, Peshal | Samsung Research America |
| UHR | 2/6 | Nezou, Patrice | Canon Research Centre France |
| UHR | 2/6 | Ng, Boon Loong | Samsung Research America |
| UHR | 2/6 | Ouchi, Masatomo | Canon |
| UHR | 2/6 | Palayur, Saju | Maxlinear Inc. |
| UHR | 2/6 | Patil, Abhishek | Qualcomm Incorporated |
| UHR | 2/6 | Patwardhan, Gaurav | Hewlett Packard Enterprise |
| UHR | 2/6 | Pettersson, Charlie | Ericsson AB |
| UHR | 2/6 | Quan, Yingqiao | Unisoc |
| UHR | 2/6 | Ratnam, Vishnu | Samsung Research America |
| UHR | 2/6 | Ryu, Kiseon | NXP Semiconductors |
| UHR | 2/6 | Sahoo, Anirudha | National Institute of Standards and Technology |
| UHR | 2/6 | Schelstraete, Sigurd | MaxLinear |
| UHR | 2/6 | Serizawa, Kazunobu | Advanced Telecommunications Research Institute International (ATR) |
| UHR | 2/6 | Sevin, Julien | Canon Research Centre France |
| UHR | 2/6 | Shen, Andy | Futurewei Technologies |
| UHR | 2/6 | Shu, Tongxin | Huawei Technologies Co., Ltd |
| UHR | 2/6 | Smith, Luther | Cable Television Laboratories Inc. (CableLabs) |
| UHR | 2/6 | Strobel, Rainer | MaxLinear |
| UHR | 2/6 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| UHR | 2/6 | Sun, Bo | Sanechips |
| UHR | 2/6 | Tanaka, Yusuke | Sony Group Corporation |
| UHR | 2/6 | Taori, Rakesh | Infineon Technologies |
| UHR | 2/6 | Trainin, Solomon | Qualcomm Incorporated |
| UHR | 2/6 | Tsodik, Genadiy | Huawei Technologies Co., Ltd |
| UHR | 2/6 | Tsujimaru, Yuki | Canon Inc. |
| UHR | 2/6 | Val, Inaki | MaxLinear, Inc. |
| UHR | 2/6 | Verma, Sindhu | Broadcom Corporation |
| UHR | 2/6 | Wang, Hao | Tencent |
| UHR | 2/6 | Wang, Lei | Futurewei Technologies |
| UHR | 2/6 | Wei, Dong | NXP Semiconductors |
| UHR | 2/6 | Wendt, Matthias | Signify |
| UHR | 2/6 | Wilhelmsson, Leif | Ericsson AB |
| UHR | 2/6 | Wullert, John | Peraton Labs |
| UHR | 2/6 | Yamada, Ryota | SHARP CORPORATION |
| UHR | 2/6 | Yan, Aiguo | Zeku |
| UHR | 2/6 | YANG, RUI | InterDigital, Inc. |
| UHR | 2/6 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| UHR | 2/6 | Yee, James | MediaTek Inc. |
| UHR | 2/6 | Yee, Peter | NSA-CSD |
| UHR | 2/6 | Yi, Yongjiang | Spreadtrum Communication USA, Inc |
| UHR | 2/6 | Yoon, Yelin | LG ELECTRONICS |
| UHR | 2/6 | Yu, Jian | Huawei Technologies Co., Ltd |
| UHR | 2/6 | Zhang, Yan | NXP Semiconductors |
| UHR | 2/6 | Zhou, Lei | H3C Technologies Co., Limited |
| UHR | 2/6 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| UHR | 2/6 | Zuniga, Juan Carlos | Cisco Systems, Inc. |

* + Attendee List for 2nd Conf. Call:

|  |  |  |  |
| --- | --- | --- | --- |
| Breakout | Timestamp | Name | Affiliation |
| UHR | 2/27/2023 10:06 | Aio, Kosuke | Sony Corporation |
| UHR | 2/27/2023 10:05 | Ajami, Abdel Karim | Qualcomm Technologies, Inc |
| UHR | 2/27/2023 11:49 | Andersdotter, Amelia | Sky Group/Comcast |
| UHR | 2/27/2023 10:26 | Ansley, Carol | Cox Communications Inc. |
| UHR | 2/27/2023 10:03 | Anwyl, Gary | MediaTek Inc. |
| UHR | 2/27/2023 10:00 | Asai, Yusuke | NTT |
| UHR | 2/27/2023 10:07 | Baek, SunHee | LG ELECTRONICS |
| UHR | 2/27/2023 11:02 | baron, stephane | Canon Research Centre France |
| UHR | 2/27/2023 10:05 | Baykas, Tuncer | Ofinno |
| UHR | 2/27/2023 10:02 | Bluschke, Andreas | Representing myself |
| UHR | 2/27/2023 11:19 | Bredewoud, Albert | Broadcom Corporation |
| UHR | 2/27/2023 10:02 | Carney, William | Sony Group Corporation |
| UHR | 2/27/2023 10:07 | Chen, You-Wei | MediaTek Inc. |
| UHR | 2/27/2023 10:02 | CHENG, yajun | Xiaomi Communications Co., Ltd. |
| UHR | 2/27/2023 10:56 | CHERIAN, GEORGE | Qualcomm Incorporated |
| UHR | 2/27/2023 11:50 | Choi, Jinsoo | LG ELECTRONICS |
| UHR | 2/27/2023 10:03 | Chu, Liwen | NXP Semiconductors |
| UHR | 2/27/2023 10:04 | CHUN, JINYOUNG | LG ELECTRONICS |
| UHR | 2/27/2023 10:06 | Chung, Chulho | SAMSUNG |
| UHR | 2/27/2023 11:16 | Coffey, John | Realtek Semiconductor Corp. |
| UHR | 2/27/2023 10:04 | DeLaOlivaDelgado, Antonio | InterDigital, Inc. |
| UHR | 2/27/2023 10:02 | Dong, Xiandong | Xiaomi Communications Co., Ltd. |
| UHR | 2/27/2023 10:49 | Erceg, Vinko | Broadcom Corporation |
| UHR | 2/27/2023 10:02 | Eren, Tuncay | Istanbul Medipol University, Vestel |
| UHR | 2/27/2023 10:02 | Erkucuk, Serhat | Ofinno |
| UHR | 2/27/2023 10:02 | Fan, Shuang | Sanechips Technology Co., Ltd. |
| UHR | 2/27/2023 10:05 | Fang, Yonggang | MediaTek Inc. |
| UHR | 2/27/2023 10:00 | Fischer, Matthew | Broadcom Corporation |
| UHR | 2/27/2023 10:02 | Gao, Ning | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| UHR | 2/27/2023 10:47 | Garg, Lalit | Broadcom Corporation |
| UHR | 2/27/2023 10:02 | GUIGNARD, Romain | Canon Research Centre France |
| UHR | 2/27/2023 10:06 | Gupta, Binita | Meta Platforms, Inc. |
| UHR | 2/27/2023 10:22 | Gupta, Raghvendra | Broadcom Corporation |
| UHR | 2/27/2023 10:54 | Haider, Muhammad Kumail | Meta Platforms Inc. |
| UHR | 2/27/2023 10:01 | Henry, Jerome | Cisco Systems, Inc. |
| UHR | 2/27/2023 10:00 | Hervieu, Lili | Cable Television Laboratories Inc. (CableLabs) |
| UHR | 2/27/2023 10:06 | Hu, Chunyu | Facebook |
| UHR | 2/27/2023 10:29 | Hu, Shengquan | MediaTek Inc. |
| UHR | 2/27/2023 10:00 | Huang, Po-Kai | Intel |
| UHR | 2/27/2023 10:04 | Huq, Kazi Mohammed Saidul | Ofinno |
| UHR | 2/27/2023 10:07 | Ik, Jang | Gachon University |
| UHR | 2/27/2023 10:04 | Inohiza, Hirohiko | Canon |
| UHR | 2/27/2023 10:04 | Jang, Insun | LG ELECTRONICS |
| UHR | 2/27/2023 10:06 | Jung, Insik | LG ELECTRONICS |
| UHR | 2/27/2023 10:09 | kamath, Manoj | Broadcom Corporation |
| UHR | 2/27/2023 10:05 | Kamel, Mahmoud | InterDigital, Inc. |
| UHR | 2/27/2023 10:01 | Kim, Geon Hwan | LG ELECTRONICS |
| UHR | 2/27/2023 10:06 | Kim, Hyungjin | Broadcom Corporation |
| UHR | 2/27/2023 10:40 | Kim, Jeongki | Ofinno |
| UHR | 2/27/2023 10:00 | Kim, Myeong-Jin | SAMSUNG |
| UHR | 2/27/2023 10:53 | Kim, Sang Gook | LG ELECTRONICS |
| UHR | 2/27/2023 10:53 | Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) |
| UHR | 2/27/2023 10:15 | Klein, Arik | Huawei Technologies Co., Ltd |
| UHR | 2/27/2023 10:22 | Ko, Geonjung | WILUS Inc. |
| UHR | 2/27/2023 10:26 | Lee, Wookbong | Apple Inc. |
| UHR | 2/27/2023 10:02 | Li, Yapu | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| UHR | 2/27/2023 10:03 | Li, Yunbo | Huawei Technologies Co., Ltd |
| UHR | 2/27/2023 10:00 | Lim, Dong Guk | LG ELECTRONICS |
| UHR | 2/27/2023 11:50 | Lu, kaiying | MediaTek Inc. |
| UHR | 2/27/2023 10:22 | Lu, Liuming | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| UHR | 2/27/2023 10:01 | Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| UHR | 2/27/2023 10:07 | Ma, Yongsen | SAMSUNG ELECTRONICS |
| UHR | 2/27/2023 10:03 | Ma, Yunsi | HiSilicon (Shanghai) Technologies Co., LTD. |
| UHR | 2/27/2023 10:11 | Mantha, Abhishek | Broadcom Corporation |
| UHR | 2/27/2023 11:09 | MAO, ZHI | Huawei Technologies Co., Ltd |
| UHR | 2/27/2023 10:07 | Mehta, Mehul | Pharrowtech BV |
| UHR | 2/27/2023 10:07 | Montreuil, Leo | Broadcom Corporation |
| UHR | 2/27/2023 10:12 | Motozuka, Hiroyuki | Panasonic Holdings Corporation |
| UHR | 2/27/2023 10:07 | Mutgan, Okan | Nokia |
| UHR | 2/27/2023 10:05 | Nayak, Peshal | Samsung Research America |
| UHR | 2/27/2023 10:04 | Noh, Si-Chan | Newracom Inc. |
| UHR | 2/27/2023 10:04 | Ouchi, Masatomo | Canon |
| UHR | 2/27/2023 10:08 | Palm, Stephen | Broadcom Corporation |
| UHR | 2/27/2023 10:12 | Patil, Abhishek | Qualcomm Incorporated |
| UHR | 2/27/2023 10:08 | Patwardhan, Gaurav | Hewlett Packard Enterprise |
| UHR | 2/27/2023 10:00 | Pettersson, Charlie | Ericsson AB |
| UHR | 2/27/2023 10:07 | Ptasinski, Henry | Element78 Communications LLC |
| UHR | 2/27/2023 10:02 | Qi, Yue | Samsung Research America |
| UHR | 2/27/2023 10:02 | Quan, Yingqiao | Unisoc |
| UHR | 2/27/2023 10:03 | Rajashekar, Rakshith | Broadcom Corporation |
| UHR | 2/27/2023 10:24 | Ratnam, Vishnu | Samsung Research America |
| UHR | 2/27/2023 10:06 | Redlich, Oded | Huawei Technologies Co., Ltd |
| UHR | 2/27/2023 10:03 | Ryu, Kiseon | NXP Semiconductors |
| UHR | 2/27/2023 10:11 | Schelstraete, Sigurd | MaxLinear |
| UHR | 2/27/2023 10:24 | Sevin, Julien | Canon Research Centre France |
| UHR | 2/27/2023 10:06 | Shafin, Rubayet | Samsung Research America |
| UHR | 2/27/2023 10:11 | Shilo, Shimi | Huawei Technologies Co., Ltd |
| UHR | 2/27/2023 10:03 | Shirakawa, Atsushi | SHARP CORPORATION |
| UHR | 2/27/2023 10:17 | Strobel, Rainer | MaxLinear |
| UHR | 2/27/2023 10:17 | SUH, JUNG HOON | Huawei Technologies Co., Ltd |
| UHR | 2/27/2023 10:06 | Sun, Bo | Sanechips |
| UHR | 2/27/2023 10:06 | Sun, Li-Hsiang | MediaTek Inc. |
| UHR | 2/27/2023 10:15 | Tadahal, Shivkumar | Broadcom Corporation |
| UHR | 2/27/2023 10:26 | Taori, Rakesh | Infineon Technologies |
| UHR | 2/27/2023 10:45 | Tsodik, Genadiy | Huawei Technologies Co., Ltd |
| UHR | 2/27/2023 10:01 | Tsujimaru, Yuki | Canon Inc. |
| UHR | 2/27/2023 10:00 | Val, Inaki | MaxLinear, Inc. |
| UHR | 2/27/2023 10:20 | Verma, Sindhu | Broadcom Corporation |
| UHR | 2/27/2023 10:06 | VIGER, Pascal | Canon Research Centre France |
| UHR | 2/27/2023 11:28 | Wang, Hao | Tencent |
| UHR | 2/27/2023 10:02 | Wang, Lei | Futurewei Technologies |
| UHR | 2/27/2023 10:02 | Wei, Dong | NXP Semiconductors |
| UHR | 2/27/2023 10:02 | Wilhelmsson, Leif | Ericsson AB |
| UHR | 2/27/2023 11:01 | Xin, Yan | Huawei Technologies Co., Ltd |
| UHR | 2/27/2023 10:21 | Xu, Fangxin | Longsailing Semiconductor |
| UHR | 2/27/2023 10:48 | Yan, Aiguo | Zeku |
| UHR | 2/27/2023 10:06 | YANG, RUI | InterDigital, Inc. |
| UHR | 2/27/2023 10:02 | Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| UHR | 2/27/2023 11:09 | Yee, James | MediaTek Inc. |
| UHR | 2/27/2023 10:01 | Yi, Yongjiang | Spreadtrum Communication USA, Inc |
| UHR | 2/27/2023 10:19 | Yoon, Kangjin | Meta Platforms Inc. |
| UHR | 2/27/2023 11:19 | Yoon, Yelin | LG ELECTRONICS |
| UHR | 2/27/2023 10:02 | Yu, Jian | Huawei Technologies Co., Ltd |
| UHR | 2/27/2023 10:01 | Zhang, Jiayi | Ofinno |
| UHR | 2/27/2023 10:39 | Zhang, Yan | NXP Semiconductors |
| UHR | 2/27/2023 10:02 | Zhou, Pei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| UHR | 2/27/2023 10:11 | Zhu, Minchen | XGIMI |