IEEE P802.11  
Wireless LANs

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| TGbn March 2025 Meeting Minutes | | | | |
| Date: 2025-05-02 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
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Abstract

This document contains the minutes for TGbn March 2025 sessions.

Revision history:

* Rev0: Initial version of the document. (The result of counting motions and the recording vote/straw poll will be added on Rev1.)
* Rev1: The validation result of the motions and the records of the straw polls and the motions were added. Some editorial corrections were applied.

Abbreviations:

* C: Comment.
* A: Answer.

# March 10th, Monday (8:00-10:00 EDT)

* Split MAC and PHY sessions.
  + MAC: <https://mentor.ieee.org/802.11/dcn/25/11-25-0145-01-00bn-tgbn-mac-ad-hoc-jan-2025-kobe-minutes.docx>
  + PHY: <https://mentor.ieee.org/802.11/dcn/25/11-25-0158-00-00bn-minutes-for-tgbn-phy-ad-hoc-in-january-2025-interim.docx>

# March 10th, Monday (16:00-18:00 EDT) - Joint

* The Chair, Alfred Asterjadhi (Qualcomm), calls the meeting to order.
* Yusuke Asai (NTT) is serving as the Secretary.
* Registration information
  + The chair announced that registration is needed to attend this meeting.
* Meeting protocol
  + The chair announced that everyone is required to log in WebEx to vote.
  + Please ensure that the following information is listed correctly when joining the call:
    - "[voter status] First Name Last Name (Affiliation)"
* 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 Wireless Interim/Plenary Session” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click “TGbn conference call that you are attending.
  + If you are unable to record the attendance via [IMAT,](https://imat.ieee.org/attendance) then please send an e-mail to:
    - Joint: Yusuke Asai ([yusuke.asai@ntt.com](mailto:yusuke.asai@ntt.com)) & Alfred Asterjadhi ([aasterja@qti.qualcomm.com](mailto:aasterja@qti.qualcomm.com))
    - PHY: Sigurd Schelstraete ([sschelstraete@maxlinear.com](mailto:sschelstraete@maxlinear.com)), Tianyu Wu ([tianyu@apple.com](mailto:tianyu@apple.com)), and Dongguk Lim ([dongguk.lim@lge.com](mailto:dongguk.lim@lge.com))
    - MAC: Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.com)), and Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com)), Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com))
* 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 spoke/wrote up.**

* + **Patent, Participation, Copyright and policy related subclause:** Please refer to the agenda document ([11-25/0221r1](https://mentor.ieee.org/802.11/dcn/25/11-25-0221-01-00bn-tgbn-mar-2025-meeting-agenda.pptx).)
  + 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.**

* Agenda
  + Chair reviewed proposed agenda found in [11-25/0221r1](https://mentor.ieee.org/802.11/dcn/25/11-25-0221-01-00bn-tgbn-mar-2025-meeting-agenda.pptx).
  + Discussion:

C: The document [11-25/0087r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0087-00-00bn-co-triggering-frame-design-for-cobf.pptx) was withdrawn.

* + The modified agenda was approved with unanimous consent.
* Announcement
  + Chair announced the 2025 IEEE-SA award nomination.
  + The nomination period is July 31st and the ceremony will be held on December 17th.
* Summary from January 2025 F2F meeting
  + Held 6 teleconferences between January 2025 and March 2025 ([11-25/0207r11](https://mentor.ieee.org/802.11/dcn/25/11-25-0207-11-00bn-jan-mar-tgbn-teleconference-agenda.docx)).
    - Discussed ~40 submissions, ~3 PDTs and ran ~ 5 straw polls covering a variety of topics

CSR, NPCA, MAP, DRUs, C-RTWT, C-TDMA, roaming, sounding, CBF,

Interference mitigation, SCS, security, TXOP sharing, coexistence,

Dynamic subchannel operation (DSO), low latency, etc.

* + - Started/closed comment collection (CC50) on TGbn D0.1

Received ~4000 comments, see [11-25/0296r1](https://mentor.ieee.org/802.11/dcn/25/11-25-0296-01-00bn-ieee-802-11bn-cc50-comments-on-d0-1.xlsx)

* + Targets for the March Plenary
    - Presentation of PDTs, technical submissions and run SPs

Complete comment assignment of comments and initiate comment resolution phase

Presentation of PDTs, CRD, and technical submissions

~150 pending submissions and ~25 pending SPs on presented submissions,

Continue populating the TGbn SFD with approved concepts

Work towards delivering TGbn D1.0.

* Editor’s Report & Assignments & Guidelines
  + [11-25/0301r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0301-00-00bn-tgbn-editor-s-report.ppt): Editor’s Report Ross J. Yu (Huawei Technologies)
    - The editor introduced the status of the comment collection 50 on D0.1.
    - 181 members contribute at least one comment.
    - Total number of comments is 3970.
    - TGbn will complete the assignment during the 2025 March meeting.
    - We intend to follow the TGbe comment resolution process.
  + [11-25/0296r5](https://mentor.ieee.org/802.11/dcn/25/11-25-0296-05-00bn-ieee-802-11bn-cc50-comments-on-d0-1.xlsx): Assignments for CC50 (TGbn D0.1) Ross J. Yu (Huawei Technologies)
    - Some members offered to take the volunteers for the open CIDs.
    - The assignments were updated as in [11-25/0296r7](https://mentor.ieee.org/802.11/dcn/25/11-25-0296-07-00bn-ieee-802-11bn-cc50-comments-on-d0-1.xlsx).
  + [11-24/1682r4](https://mentor.ieee.org/802.11/dcn/24/11-24-1682-04-00bn-tgbn-guidelines.docx): TGbn guidelines Alfred Asterjadhi (Qualcomm Technologies)
    - The Clauses 5 (Guidelines for Comment Assignments CC50) and 6 (Guideline-Solving TBDs/CRs for TGbn D0.1) were enabled and updated.
    - The assignee and TBD for ad-hoc category (Joint/PHY/MAC) should be done by the end of this F2F meeting.
    - TGbn have not to resolve all of comments during comment resolution because the comment collection is within the TGbn.
* Approval TG Minutes
  + **Motion:**

Move to approve TGbn minutes listed below:

* + - January Interim: <https://mentor.ieee.org/802.11/dcn/25/11-25-0239-00-00bn-tgbn-january-2025-meeting-minutes.docx>
    - Teleconferences Jan’25-Mar’25: <https://mentor.ieee.org/802.11/dcn/25/11-25-0409-00-00bn-tgbn-january-2025-to-march-2025-teleconferences-minutes.docx>

Move: Yusuke Asai Second: Xiaofei Wang

* + - Discussion: None.

**Approved with unanimous consent.**

* PDTs/CR/Submissions
  + [11-25/0414r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0414-00-00bn-pdt-joint-ndp-announcement-frame-format.docx): PDT-Joint-NDP-Announcement frame format Juan Fang (Intel)

C: In the figure nine, does it need to be UHR?

A: Because in the NDP, we are still using the HT format.

(The SP was scheduled in the Joint session on Thursday.)

* + [11-25/0247r1](https://mentor.ieee.org/802.11/dcn/25/11-25-0247-01-00bn-m-ap-cobf-sounding-sequence.pptx): M-AP CoBF Sounding Sequence Arik Klein (Huawei Technologies)

C: In the slide 7, the first bullet of the option 1 says that “Lack of indication in CSI that it is destinated for OBSS AP.” The second NDPA we know that we are going to AP2 will transmit. So, even without the indication to the AP2, it knows that.

A: But the AP1 has two sets of CSI feedback. All of them would look the same, but you have to distinguish them.

C: I think that the CSI feedback should be considered in detail. Because historically this CSI feedback is intended from a station to its associated AP until 11be. Now we are trying to somehow send this CSI from the station to an unassociated AP. In the second bullets for the options 1 and 2, are these your proposed changes? Or do you just open up the discussion?

A: I open up the discussion. In this presentation, I just want to point out that for the first time.

It is open for just showing the challenges.

C: In the slide 9 there is the idea of relaying the CSI between the associated APs. Basically, we should make the sounding sequence as simple as possible. Have you considered the overhead or have you done any simulation to evaluate overall performance?

A: We have not checked het. Because when this presentation was written, even the first spec was not here, only there was the SFD text.

C: The relaying approach adding the extra frame exchanges leads to minimal gain of CoBF. Is it still a promising feature?

A: I think even with the relay will not be a promising feature. Maybe we need to consider other solutions.

* + [11-25/0248r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0247-01-00bn-m-ap-cobf-sounding-sequence.pptx): Partial (Overlapping) Bandwidth Sounding for Coordinated Beamforming

Qisheng Huang (ZTE)

C: For reducing overhead impact, do you think how much impact in term of throughput performance especially in some occasions to add like packet ending to give the station more time to do processing?

A: I have overhead problem and how much we can reduce here. In one example case where one station is 20 MHz and other one is 160 MHz, 20 us of overhead is reduced by using this method. I have to emphasize that the other important problem here to exclude besides the overhead.

* + [11-25/0412r3](https://mentor.ieee.org/802.11/dcn/25/11-25-0412-03-00bn-cobf-frame-sequences-and-signaling-details.pptx): CoBF Frame Sequences and Signaling Details

Sherief Helwa (Qualcomm Technologies)

C: In the slide 6, what is your expected behavior from the shared AP2 does not respond to the ICF STA 1 does not respond to the IDC of the sharing AP1?

A: We do acknowledge that in some cases there is a chance that the sequence might terminate in those cases. We are trying to add so as much robustness as we can, in order to avoid these cases by means to wait and change between the APs, in order to protect the medium and so on. In addition to this, these stations are also included in the sounding sequence, which these APs already know that these statins are included in the sequence. But also talking about, there is also always the chance for having that the AP recovers the medium.

C: If something is going wrong because of interference environment, we are stacking and we don’t know even where it is and who is responsible.

C: How many are the shared APs scheduled?

A: The purpose of the CoBF invite/response is not to check whether the other AP is willing to contribute right now or not. It is basically the idea that at the point I am sending the CoBF invite as a sharing AP, I have already made my decision to include this specific shared AP in that TXOP. Also, we already have agreement during the transmission sequence, only two APs are included. So, the purpose is to share the needed information in order to start CoBF operation.

C: Regarding the BlockAck part, why do the sharing APs send MU-BARs as well as the shared AP? I think the sharing AP can receive an BlockACK immediately after the transmission.

A: That could be an option. This is just an example.

C: Are there any progress in the frame format decision on all these different frames like a CoBF invite/response and sounding invite/response and ICF/ICR and CoBF trigger frame?

A: This is a next level detail.

C In the example, a DL PPDU is to a single STA.

A: This is an example. When we have multiple stations scheduled, we can use MU PPDU.

* + [11-22/2059r1](https://mentor.ieee.org/802.11/dcn/24/11-24-2059-01-00bn-discussion-on-initial-frame-exchange-in-csr-cobf.pptx): Discussion on Initial Frame Exchange in CSR/COBF

Kosuke Aio (Sony Corporation)

C: I support unifying CoBF and CoSR sequences. We already agreed that CooB should be limited to only two APs. Don’t you think it is a good direction to also have the same approach with CSR as well?

A: I agree that the number of AP should be limited to two APs in the transmission phase. But as for the poling phase, there are multiple APs, so I think the sharing AP needs to select one AP before transmission.

* Aoba: None.
* Recessed at 18:00.

# March 11th, Tuesday (13:30-15:30 EDT)

* Split MAC and PHY sessions.
  + MAC: <https://mentor.ieee.org/802.11/dcn/25/11-25-0517-01-00bn-tgbn-mac-ad-hoc-mar-may-2025-minutes.docx>
  + PHY: <https://mentor.ieee.org/802.11/dcn/25/11-25-0501-00-00bn-minutes-for-802-11bn-phy-ad-hoc-in-march-2025-plenary-session.docx>

# March 11th, Tuesday (16:00-18:00 EDT)

* Split MAC and PHY sessions.
  + MAC: <https://mentor.ieee.org/802.11/dcn/25/11-25-0517-01-00bn-tgbn-mac-ad-hoc-mar-may-2025-minutes.docx>
  + PHY: <https://mentor.ieee.org/802.11/dcn/25/11-25-0501-00-00bn-minutes-for-802-11bn-phy-ad-hoc-in-march-2025-plenary-session.docx>

# March 12th, Wednesday (8:00-10:00 EDT)

* Split MAC and PHY sessions.
  + MAC: <https://mentor.ieee.org/802.11/dcn/25/11-25-0517-01-00bn-tgbn-mac-ad-hoc-mar-may-2025-minutes.docx>
  + PHY: <https://mentor.ieee.org/802.11/dcn/25/11-25-0501-00-00bn-minutes-for-802-11bn-phy-ad-hoc-in-march-2025-plenary-session.docx>

# March 12th, Wednesday (16:00-18:00 EDT)

* Split MAC and PHY sessions.
  + MAC: <https://mentor.ieee.org/802.11/dcn/25/11-25-0517-01-00bn-tgbn-mac-ad-hoc-mar-may-2025-minutes.docx>
  + PHY: (cancelled)

# March 13th, Thursday (8:00-10:00 EDT)

* Split MAC and PHY sessions.
  + MAC: <https://mentor.ieee.org/802.11/dcn/25/11-25-0517-01-00bn-tgbn-mac-ad-hoc-mar-may-2025-minutes.docx>
  + PHY: (cancelled)

# March 13th, Thursday (13:30-15:30 ET) - Joint

* The Chair, Alfred Asterjadhi (Qualcomm), calls the meeting to order.
* Yusuke Asai (NTT) is serving as the Secretary.
* Registration information
  + The chair announced that registration is needed to attend this meeting.
* Meeting protocol
  + The chair announced that everyone is required to log in WebEx to vote.
  + Please ensure that the following information is listed correctly when joining the call:
    - "[voter status] First Name Last Name (Affiliation)"
* 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 Wireless Interim/Plenary Session” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click “TGbn conference call that you are attending.
  + If you are unable to record the attendance via [IMAT,](https://imat.ieee.org/attendance) then please send an e-mail to:
    - Joint: Yusuke Asai ([yusuke.asai@ntt.com](mailto:yusuke.asai@ntt.com)) & Alfred Asterjadhi ([aasterja@qti.qualcomm.com](mailto:aasterja@qti.qualcomm.com))
    - PHY: Sigurd Schelstraete ([sschelstraete@maxlinear.com](mailto:sschelstraete@maxlinear.com)), Tianyu Wu ([tianyu@apple.com](mailto:tianyu@apple.com)), and Dongguk Lim ([dongguk.lim@lge.com](mailto:dongguk.lim@lge.com))
    - MAC: Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.com)), and Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com)), Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com))
* 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 spoke/wrote 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 the agenda document ([11-25/0221r7](https://mentor.ieee.org/802.11/dcn/25/11-25-0221-07-00bn-tgbn-mar-2025-meeting-agenda.pptx).)
* Agenda
  + Chair reviewed proposed agenda found in [11-25/0221r7](https://mentor.ieee.org/802.11/dcn/25/11-25-0221-07-00bn-tgbn-mar-2025-meeting-agenda.pptx).
  + Discussion:

C: Are we able to run a motion in the next session?

A: Yes. Once we finish the straw poll is approved, then we can also convert them to the motions.

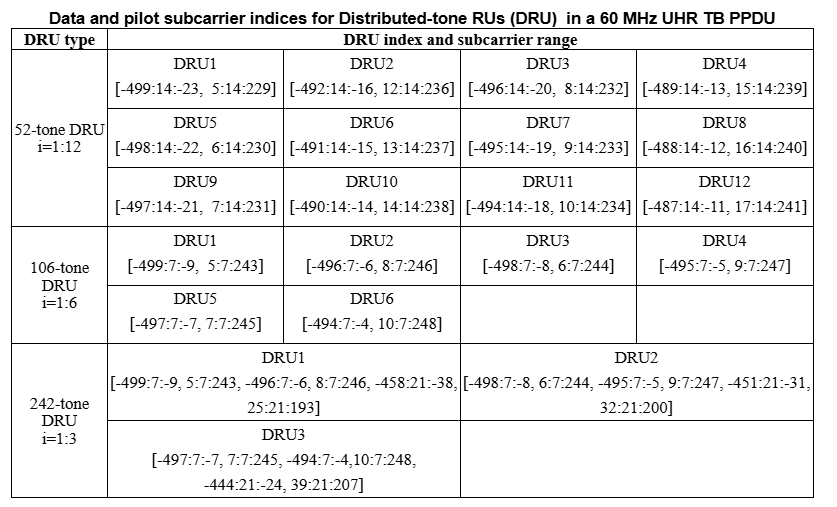
C: I would like to update the SP2 text.

A: Confirmed.

* + The modified agenda was approved with unanimous consent.
* Motions
  + The following motions ([11-25/0014r11](https://mentor.ieee.org/802.11/dcn/25/11-25-0014-11-00bn-tgbn-motions-list-part-2.pptx): TGbn Motion List – Part 2) were conducted.
  + **Motion 296 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The Data and pilot subcarrier indices for DRUs in an 60 MHz DBW are defined in following table:



Move: Ross J. Yu Second: Eunsung Park

* + - Discussion: None.

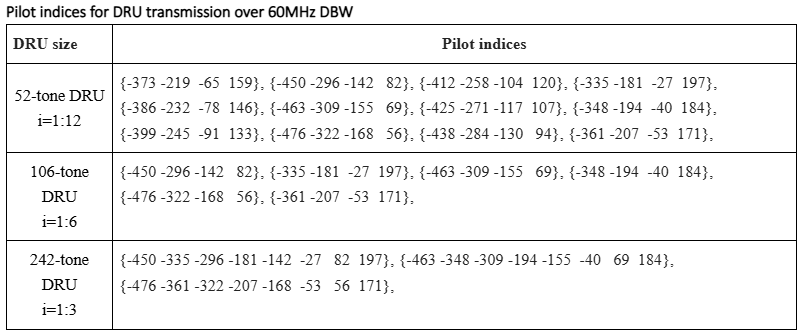
**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/0154r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0154-00-00bn-alternative-dru-tone-plan-design-for-60mhz-dbw.pptx)*]. SP result: No objection*

* + **Motion 297 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The Pilot subcarrier indices for DRUs in an 60 MHz DBW are defined in following table?



Move: Ross J. Yu Second: Yan Xin

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs:[*[*25/0154r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0154-00-00bn-alternative-dru-tone-plan-design-for-60mhz-dbw.pptx)*]. SP result: No objection*

* + **Motion 298 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - 802.11bn defines the concept of a sync-reference AP and a sync-follower AP for CFO correction in COBF

Sync-follower AP pre-corrections needed

For sequential sounding:

* + - All the NDPs sent by it during sounding phase that are sent for the purpose of sounding the STAs in the other BSS (Mandatory)
    - For the NDPs sent by it for sounding the STAs in its own BSS, it is recommended but not mandatory that the sync follower AP pre-correct those NDPs

For joint sounding

* + - All the NDPs sent by it during the sounding phase (Mandatory)
    - The COBF sync and COBF PPDU during transmission phase using the same frequency pre-correction value as the sounding phase, when it is the sharing AP
    - Sync-reference AP does not pre-correct during transmission phase when it is the sharing AP

Move: Sameer Vermani Second: Yusuke Asai

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/0083r1*](https://mentor.ieee.org/802.11/dcn/25/11-25-0083-01-00bn-cfo-correction-and-related-simplifications-for-cobf.pptx)*]. SP result: No objection.*

* + **Motion 299 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The sync-follower AP shall use the NDPA frame sent by the sync-reference AP to pre-correct the NDP frequency to be within a TBD range (e.g., 350Hz) of the sync-reference AP’s frequency

Applies to sequential and joint sounding

The pre-correction of cross-BSS NDP and joint NDP is mandatory

The pre-correction of in-BSS NDPs is recommended but not a mandatory requirement

Move: Sameer Vermani Second: Sherief Helwa

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/0083r1*](https://mentor.ieee.org/802.11/dcn/25/11-25-0083-01-00bn-cfo-correction-and-related-simplifications-for-cobf.pptx)*]. SP result: No objection.*

* + **Motion 300 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The sharing AP is the AP that transmits the final sync frame before the COBF PPDU

Regardless of who is the sync-reference

Note: This ensures a consistent protocol and a consistent behavior at sharing AP

Move: Sameer Vermani Second: Alice Chen

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/0083r1*](https://mentor.ieee.org/802.11/dcn/25/11-25-0083-01-00bn-cfo-correction-and-related-simplifications-for-cobf.pptx)*]. SP result: No objection.*

* + **Motion 301 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The shared AP always pre-corrects COBF PPDU based on the final sync

To bring the two APs within a TBD frequency range of each other (e.g., ~350Hz)

Note: Regardless of which AP is the sync-reference, this ensures consistent behavior at shared AP

Move: Sameer Vermani Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/0083r1*](https://mentor.ieee.org/802.11/dcn/25/11-25-0083-01-00bn-cfo-correction-and-related-simplifications-for-cobf.pptx)*]. SP result: No objection.*

* + **Motion 302 (PDT-PHY)**

Move to incorporate the proposed text changes in [11-25/0250r6](https://mentor.ieee.org/802.11/dcn/25/11-25-0250-06-00bn-pdt-phy-coordinated-spatial-reuse.docx) to the latest TGbn draft

Move: Genadiy Tsodik Second: Ross J. Yu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/0250r6*](https://mentor.ieee.org/802.11/dcn/25/11-25-0250-06-00bn-pdt-phy-coordinated-spatial-reuse.docx)*]. SP result: No objection.*

* + **Motion 303 (PDT-PHY)**

Move to incorporate the proposed text changes in [11-24/2008r2](https://mentor.ieee.org/802.11/dcn/24/11-24-2008-02-00bn-pdt-phy-interference-mitigation.docx) to the latest TGbn draft

Move: Genadiy Tsodik Second: Yan Xin

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-24/2008r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-2008-02-00bn-pdt-phy-interference-mitigation.docx)*]. SP result: No objection.*

* + **Motion 304 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The COBF PPDU’s GI+LTF support and signaling is as follows:

Support of following GI+LTF combinations to be mandatory at both AP and STA

* + - 2x LTF +0.8us, 2xLTF+1.6us, 4xLTF+3.2us

Additionally, 2x LTF+0.8us GI usage for a COBF pair is exchanged at the group formation stage

* + - Each AP conveys if it can use 2x+0.8us GI for this COBF group or not
    - No further last-minute negotiation before COBF transmission

Invite frame from sharing AP dictates the LTF+GI combination keeping the shared AP’s ability to use 2x LTF+0.8us in mind

Move: Sameer Vermani Second: Ron Porat

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/0381r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0381-01-00bn-some-open-issues-on-cobf.pptx)*]. SP result: 41Y/12N/32A*

* + **Motion 305 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - BSS ordering of per-user SIG fields in the preamble of a COBF transmission

In the cases where the user fields of either BSS may go first while preserving the Nss in non-increasing order, the user fields of the sharing BSS go first

Move: Sameer Vermani Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/0381r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0381-01-00bn-some-open-issues-on-cobf.pptx)*]. SP result: No objection.*

* + **Motion 306 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - There shall be a frame-exchange before the COBF sounding between the two APs which will at-least serve the following goals:

Unavailability/decline indication from the responding AP

* + - Used by responding AP to refuse participation in a COBF sounding process

Exchange of sounding Nss capability of the STAs being sounded in the two BSSs

* + - The minimum sounding Nss capability of the participating STAs in each BSS will be exchanged

Note: Design of the frames is TBD by MAC group

Move: Sameer Vermani Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/0381r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0381-01-00bn-some-open-issues-on-cobf.pptx)*]. SP result: No objection.*

* + **Motion 307 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The first BSS color in U-SIG indicates the sharing AP and the second BSS color in U-SIG indicates the shared AP in UHR MU PPDU for Co-BF and Co-SR transmission

Move: You-Wei Chen Second: Juan Fang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/0399r1*](https://mentor.ieee.org/802.11/dcn/25/11-25-0399-01-00bn-cobf-cosr-design-follow-up.pptx)*]. SP result: No objection.*

* + **Motion 308 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - For Co-BF and Co-SR transmissions using UHR MU PPDU, TPE is fixed as 20us.

nominal\_packet\_padding =20us and a factor =4.

Move: You-Wei Chen Second: Juan Fang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/0399r1*](https://mentor.ieee.org/802.11/dcn/25/11-25-0399-01-00bn-cobf-cosr-design-follow-up.pptx)*,* [*11-25/401r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0401-00-00bn-cobf-phy-design-consideration.pptx)*]. SP result: No objection.*

* + **Motion 309 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - Joint/cross-BSS sounding feedback is limited to UL OFDMA if >1 STA is sounded

Move: Ron Porat Second: Sameer Vermani

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/411*](https://mentor.ieee.org/802.11/dcn/25/11-25-0411-00-00bn-misc-cbf-topics.pptx)*]. SP result: No objection.*

* + **Motion 310 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - Remove the requirement, for UHR STAs, to receive the forward-looking EHT ER SU preamble in the UHR RX procedure

Move: Lin Yang Second: Alice Chen

* + - Discussion: None.

**Result: Approved with unanimous consent.**

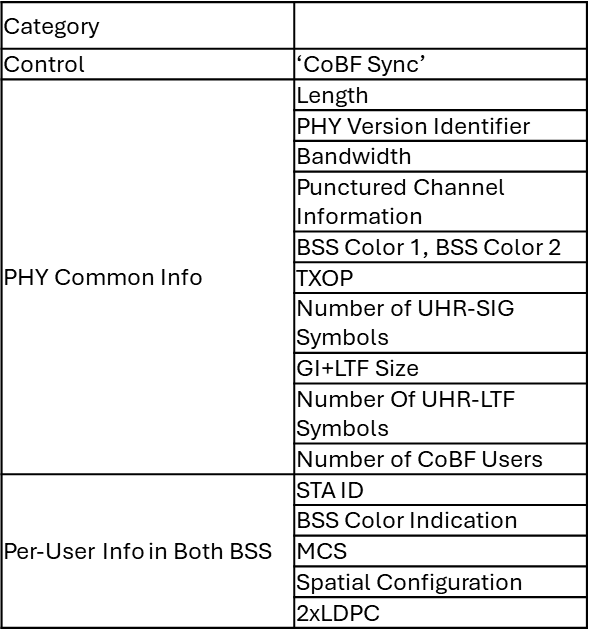
*Reference docs: [*[*11-25/109r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0109-00-00bn-uhr-receive-procedure.pptx)*]. SP result: No objection.*

* + **Motion 311 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The CoBF Sync frame carries the following information

How to indicate the information is TBD



Move: Alice Chen Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/389r2*](https://mentor.ieee.org/802.11/dcn/25/11-25-0389-02-00bn-information-exchange-in-the-cobf-transmission-phase.pptx)*,* [*25/399r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0399-00-00bn-cobf-cosr-design-follow-up.pptx)*,* [*25/401r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0401-00-00bn-cobf-phy-design-consideration.pptx)*,* [*25/0087r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0087-00-00bn-co-triggering-frame-design-for-cobf.pptx)*]. SP result: No objection.*

* + **Motion 312 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - In each of the CoBF Invite, Response and Sync frames, if there is information for more than one users, the users are ordered according to Nss in non-increasing order

The order of users in the sharing BSS in the Sync frame is aligned with that in the Invite frame.

The order of users in the shared BSS in the Sync frame is aligned with that in the Response frame.

Move: Alice Chen Second: Lin Yang

* + - Discussion: None.

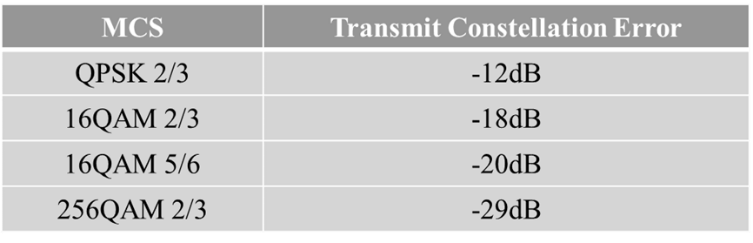
**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/389r2*](https://mentor.ieee.org/802.11/dcn/25/11-25-0389-02-00bn-information-exchange-in-the-cobf-transmission-phase.pptx)*,* [*11-25/381r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0381-01-00bn-some-open-issues-on-cobf.pptx)*,* [*11-25-397r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0397-00-00bn-spatial-streams-indication-for-cobf-tf-and-ppdu.pptx)*]. SP result: No objection.*

* + **Motion 313 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - Transmit Constellation Error required values for the new MCSs 17, 19, 20 and 23 (QPSK 2/3, 16QAM 2/3, 16QAM 5/6 and 256QAM 2/3) for the UHR MU PPDU will be



Move: Genadiy Tsodik Second: Yan Xin

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/354r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0354-00-00bn-transmit-constellation-error-for-additional-mcss.pptx)*,* [*11-25/392r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0392-00-00bn-transmit-and-receive-specifications-for-new-mcs-in-11bn.pptx)*]. SP result: No objection.*

* + **Motion 314 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The testing in the transmit and receive specification in IEEE 802.11bn spec should only use EQM (i.e., not use UEQM)
    - The testing in the transmit and receive specification in IEEE 802.11bn spec should not use 2xLDPC, if LDPC is used

Move: Alice Chen Second: Juan Fang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/392r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0392-00-00bn-transmit-and-receive-specifications-for-new-mcs-in-11bn.pptx)*]. SP result: No objection.*

* + **Motion 315 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - In a COBF transmission, the per-user-UHR-SIG information of the BSS having the largest NSS for a Scheduled STA (largest being across the STAs of both BSSs) is sent first in the UHR-SIG User field followed by the per-user-UHR-SIG information of the other BSS?

Within each BSS, the user information of the larger N\_SS user is sent first

Move: Junghoon Shu Second: Alice Chen

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-24/171r26*](https://mentor.ieee.org/802.11/dcn/24/11-24-0171-26-00bn-tgbn-motions-list-part-1.pptx)*,* [*11-25/0381r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0381-00-00bn-some-open-issues-on-cobf.pptx)*,* [*389r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0389-00-00bn-information-exchange-in-the-cobf-transmission-phase.pptx)*,* [*11-25/397r3*](https://mentor.ieee.org/802.11/dcn/25/11-25-0397-03-00bn-spatial-streams-indication-for-cobf-tf-and-ppdu.pptx)*]. SP result: No objection.*

* + **Motion 316 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The order of user information in the Sync frame is aligned with the order of users in the UHR-SIG User field for CoBF transmission

Move: Junghoon Shu Second: Alice Chen

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/389r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0389-00-00bn-information-exchange-in-the-cobf-transmission-phase.pptx)*,* [*11-25/399r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0399-00-00bn-cobf-cosr-design-follow-up.pptx)*,* [*11-25/397r3*](https://mentor.ieee.org/802.11/dcn/25/11-25-0397-03-00bn-spatial-streams-indication-for-cobf-tf-and-ppdu.pptx)*]. SP result: No objection.*

* + **Motion 317 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The Rx minimum sensitivity and ACR/NACR specifications for the two ELR MCSs use the same value as EHT/UHR MCS0

Move: Juan Fang Second: Alice Chen

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/98r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0098-00-00bn-receiver-specification.pptx)*,* [*11-25/392r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0392-00-00bn-transmit-and-receive-specifications-for-new-mcs-in-11bn.pptx)*]. SP result: No objection.*

* + **Motion 318 (PDT-PHY)**

**Move to incorporate the following changes to the latest TGbn draft**

* + - In Section 38.3.24.2 (Receiver minimum input sensitivity), change the two “TBDs” in Table 38-47 to “-82”
    - In Section 38.3.24.3 (Adjacent channel rejection), change the two “TBDs” in the column of "Adjacent channel rejection (dB)" in Table 38-49 to “16” and change the two “TBDs” in the column of " Nonadjacent channel rejection (dB)" in Table 38-49 to “32”

Move: Juan Fang Second: Alice Chen

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/98r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0098-00-00bn-receiver-specification.pptx)*,* [*11-25/392r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0392-00-00bn-transmit-and-receive-specifications-for-new-mcs-in-11bn.pptx)*]. SP result: No objection.*

* + **Motion 319 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - Mandatory support MCSs of QPSK with code rate 2/3; 16QAM with code rate 2/3; 16QAM with code rate 5/6; 256QAM with code rate 2/3.

Support for 256QAM with code rate 2/3 for 20MHz only devices is ~~TBD~~ optional.

* [Motion #216, [264] and [274, 275]]

Move: Ross Jian Yu Second: Yan Xin

* + - Discussion: None.

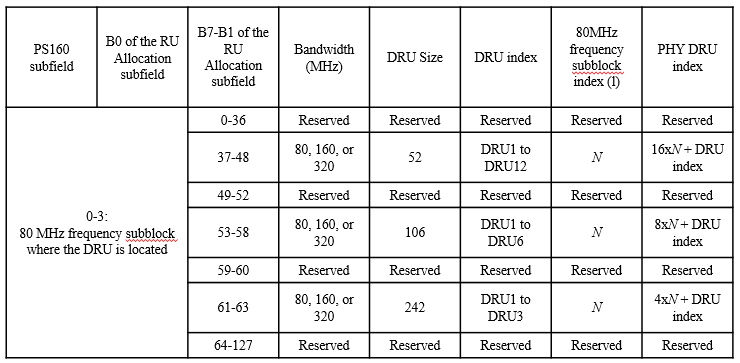
**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/0410r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0410-00-00bn-new-mcs-capability-follow-up.pptx)*]. SP result: No objection.*

* + **Motion 320 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - Encoding of the PS160 and RU allocation subfields in a UHR variant User Info field for DBW60 is defined as follows



Move: Eunsung Park Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/0359r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0359-00-00bn-open-issues-for-60-mhz-dbw.pptx)*,* [*25/0358r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0358-00-00bn-open-topics-for-dru-on-60mhz.pptx)*]. SP result: No objection*

* + **Motion 321 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The constant shift value defined in the 80 MHz frequency subblock is used for DBW60

Move: Eunsung Park Second: Dongguk Lim

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/0359r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0359-00-00bn-open-issues-for-60-mhz-dbw.pptx)*,* [*25/0358r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0358-00-00bn-open-topics-for-dru-on-60mhz.pptx)*]. SP result: No objection*

* + **Motion 322 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - 4xLTF sequence for DRU of 60MHz DBW is defined as follows



Move: Chenchen Liu Second: Eunsung Park

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/0394r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0394-00-00bn-dltf-design-for-60dbw.pptx)*]. SP result: No objection.*

* + **Motion 323 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The occupied STFs tones of UHR-STF for DRU on DBW60 are the same as that of the largest MRU (i.e., 484+242) corresponding to the distribution BW 60MHz within the PPDU BW

Move: Shengquan Hu Second: Eunsung Park

* + - Discussion: None.

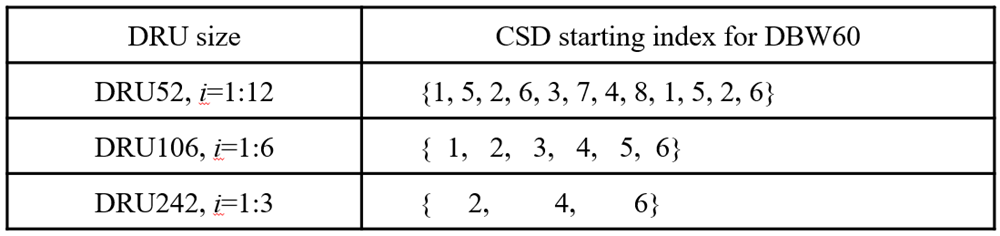
**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/0358r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0358-00-00bn-open-topics-for-dru-on-60mhz.pptx)*]. SP result: No objection.*

* + **Motion 324 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - DRU CSD start index assignment for DBW60 is defined as below



Move: Shengquan Hu Second: Eunsung Park

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/0358r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0358-00-00bn-open-topics-for-dru-on-60mhz.pptx)*,* [*25/0359r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0359-00-00bn-open-issues-for-60-mhz-dbw.pptx)*]. SP result: No objection.*

* + **Motion 325 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - LDPC is the only FEC coding scheme for DL/UL MU-MIMO in 11bn

Move: Shengquan Hu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/0396r1*](https://mentor.ieee.org/802.11/dcn/25/11-25-0396-01-00bn-discussion-on-ldpc-only-for-mu-mimo-in-11bn.pptx)*]. SP result: No objection.*

* + **Motion 326 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - DL/UL MU-MIMO in UHR is optional for 20MHz only STA

Move: Shengquan Hu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

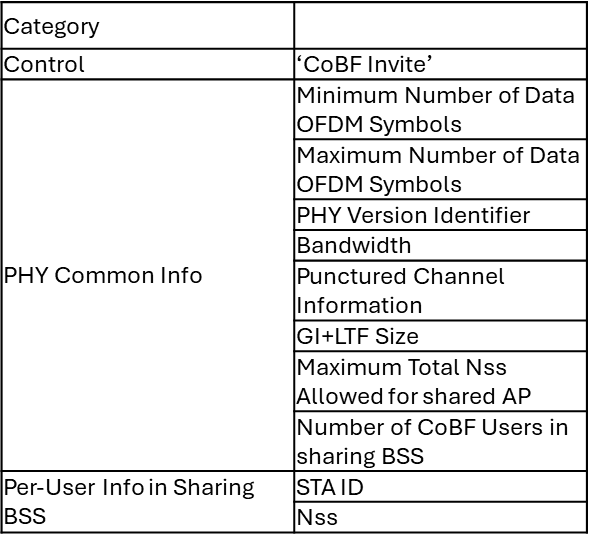
*Reference docs: [*[*25/0396r1*](https://mentor.ieee.org/802.11/dcn/25/11-25-0396-01-00bn-discussion-on-ldpc-only-for-mu-mimo-in-11bn.pptx)*]. SP result: No objection.*

* + **Motion 327 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The CoBF Invite frame carries the following information

How to indicate the information is TBD



Move: Alice Chen Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

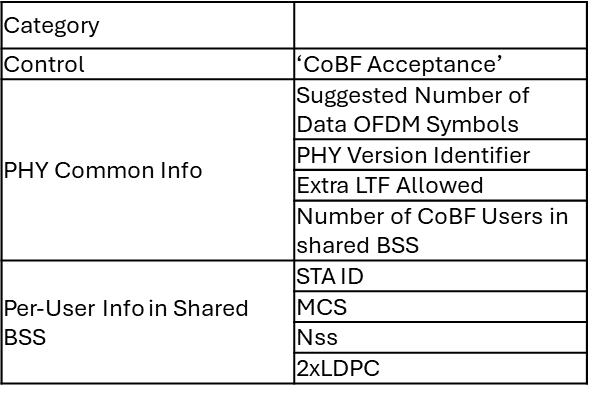
*Reference docs: [*[*25/0389r2*](https://mentor.ieee.org/802.11/dcn/25/11-25-0389-02-00bn-information-exchange-in-the-cobf-transmission-phase.pptx)*,* [*25/0399r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0399-00-00bn-cobf-cosr-design-follow-up.pptx)*]. SP result: No objection.*

* + **Motion 328 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The CoBF Response frame carries at least the following information

How to indicate the information is TBD



Move: Alice Chen Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/0389r2*](https://mentor.ieee.org/802.11/dcn/25/11-25-0389-02-00bn-information-exchange-in-the-cobf-transmission-phase.pptx)*,* [*25/0399r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0399-00-00bn-cobf-cosr-design-follow-up.pptx)*]. SP result: No objection.*

* + **Motion 329 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - The maximum time allocated by a sharing AP in a TXOP to all shared AP for CTDMA is not larger than the TXOP limit it advertised for the minimum between AC\_VI TXOP limit and the TXOP Limit of the AC it obtains the TXOP with to its associated STAs.

The maximum time allocated by a sharing AP in a TXOP to all shared AP for CTDMA is not larger than the TXOP limit it advertised for the minimum between AC\_VI TXOP limit and the TXOP Limit of the AC it obtains the TXOP with to its associated STAs.

* + - The sharing AP shall use at least a TBD portion of the obtained TXOP for data communication with its own associated STAs.
    - Note: similar consideration will apply for TXS mode 2

Move: Dibakar Das Second: Juan Fang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/0093*](https://mentor.ieee.org/802.11/dcn/24/11-24-0093-03-00bn-nav-setting-for-coordinated-tdma.pptx)*]. SP result: No objection.*

* + **Motion 330 (PDT-MAC)**

**Move to incorporate the proposed text changes in** [**11-25/206r4**](https://mentor.ieee.org/802.11/dcn/25/11-25-0206-04-00bn-pdt-on-uhr-scs-procedure.docx) **to the latest TGbn draft**

Move: Dibakar Das Second: Binita Gupta

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/206r4*](https://mentor.ieee.org/802.11/dcn/25/11-25-0206-04-00bn-pdt-on-uhr-scs-procedure.docx)*]. SP result: No objection.*

(Motion 331 (MAC) was Deferred.)

* + **Motion 332 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - TGbn defines a mechanism where a non-AP STA can be allocated frequency resources dynamically (i.e., on a per-TXOP basis) outside of the non-AP STA's current operating bandwidth and within the associated AP's BSS bandwidth

Move: Morteza Mehrnoush Second: Gaurang naik

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-22/2204*](https://mentor.ieee.org/802.11/dcn/23/11-23-2204-03-00bn-tgbn-november-december-2023-teleconference-minutes.docx)*,* [*11-23/2141*](https://mentor.ieee.org/802.11/dcn/23/11-23-2141-03-00bn-further-discussion-on-dynamic-subband-operation.pptx) *(Sindhu & Shubho),* [*11-23/843*](https://mentor.ieee.org/802.11/dcn/23/11-23-0843-01-0uhr-considerations-on-dynamic-subchannel-operation.pptx) *(Liuming),* [*11-23/1496*](https://mentor.ieee.org/802.11/dcn/23/11-23-1496-00-0uhr-emlsr-dynamic-subband-operation.pptx) *(Kaiying),* [*11-23/1892*](https://mentor.ieee.org/802.11/dcn/23/11-23-1892-00-00bn-thoughts-on-dynamic-subchannel-operation.pptx) *(Gaurang),* [*11-23/1913*](https://mentor.ieee.org/802.11/dcn/23/11-23-1913-02-00bn-secondary-channel-access-operation.pptx) *(DongJu),* [*11-23/1935*](https://mentor.ieee.org/802.11/dcn/23/11-23-1935-01-00bn-secondary-channel-usage-follow-up.pptx) *(Liwen),* [*11-23/2027*](https://mentor.ieee.org/802.11/dcn/23/11-23-2027-02-00bn-considerations-for-dso-sub-band-switch-delay.pptx) *(Vishnu),* [*11-24/591*](https://mentor.ieee.org/802.11/dcn/24/11-24-0591-01-00bn-emlsr-secondary-channel-operation.pptx) *(Morteza),* [*11-24/1157*](https://mentor.ieee.org/802.11/dcn/24/11-24-1157-01-00bn-discussions-on-dynamic-subchannel-operation.pptx) *(Hank Sung),* [*11-24/1863r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1863-01-00bn-performance-benefits-of-dso.pptx)*,* [*24/449r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-0449-03-00bn-considerations-on-dynamic-subchannel-operation-follow-up.pptx)*]. SP result: No objection.*

* + **Motion 333 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - Define a mechanism to retrieve probe response content for neighboring AP MLD(s) of the current AP MLD, through the current AP MLD
    - Note. The neighboring AP MLD and the current AP MLD are in the same ESS

Move: Guogang Huang Second: Binita Gupta

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*23/1897*](https://mentor.ieee.org/802.11/dcn/23/11-23-1897-00-00bn-thoughts-on-improving-roaming-under-existing-architecture.pptx)*,* [*24/1879*](https://mentor.ieee.org/802.11/dcn/24/11-24-1879-02-00bn-proposals-for-expeditious-discovery-of-aps-for-initial-association-and-roaming.pptx)*,* [*24/658*](https://mentor.ieee.org/802.11/dcn/24/11-24-0658-03-00bn-optimizing-roaming-scan.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*]. SP result: No objection.*

* + **Motion 334 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - 11bn defines a mechanism for dynamic bandwidth expansion (DBE) that enables a UHR AP to modify (expand/reset) its Dynamic UHR operating BSS bandwidth for UHR STAs that support the DBE operation

The dynamic bandwidth change is signaled using management frames and is announced for multiple beacon intervals in advance, and the AP shall stay on the expanded bandwidth until a subsequent dynamic bandwidth change occurs

The primary channel does not change as part of the dynamic BW expansion.

TBD on DBE signaling details

Move: Binita Gupta Second: Kumail Haider

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-24/88*](https://mentor.ieee.org/802.11/dcn/24/11-24-0088-01-00bn-maximizing-channel-bandwidth-in-dense-ap-deployments.pptx)*,* [*11-24/815*](https://mentor.ieee.org/802.11/dcn/24/11-24-0815-01-00bn-dynamic-bandwidth-selection-signaling-details.pptx)*]. SP result: No objection.*

* + **Motion 335 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - After the roaming preparation request/response exchange, there is an indicated timeout

If there is no successful transmission of the roaming execution request frame from the non-AP MLD within the indicated timeout, then the target AP MLD may delete all preparation information related to the non-AP MLD

NOTE - This includes security context, i.e., new derived TK if new TK is derived

If the roaming preparation request for a target AP MLD is accepted in the roaming preparation response, and the non-AP MLD sends a following roaming execution request for the target AP MLD received within the indicated timeout, then the roaming execution request shall be accepted in the roaming execution response

TBD on indication of the timeout

* + - After the latest roaming preparation request/response exchange, the setup links with the target AP MLD is not modified until after the roaming execution request/response exchange is finished.

Move: Po-Kai Huang Second: Abhishek Patil

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1874r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1874-01-00bn-further-details-on-improving-roaming-between-mlds.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*,* [*25/385r1*](https://mentor.ieee.org/802.11/dcn/25/11-25-0385-01-00bn-deadline-indications-for-seamless-roaming.pptx)*,* [*25/388r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0388-00-00bn-link-reconfiguration-framework-for-preparation-and-execution-phases-of-seamless-roaming.pptx)*,* [*25/390r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0390-00-00bn-link-reconfiguration-signaling-design-for-next-generation-wlans.pptx)*,* [*25/391r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0391-00-00bn-single-step-preparation-and-execution-for-seamless-roaming.pptx)*,* [*24/656*](https://mentor.ieee.org/802.11/dcn/24/11-24-0656-03-00bn-seamless-roaming-signaling-details.pptx)*]. SP result: No objection.*

* + **Motion 336 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - There is only one target AP MLD indicated in the roaming preparation request frame from a non-AP MLD.

Move: Po-Kai Huang Second: Jarkko Kneckt

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1874r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1874-01-00bn-further-details-on-improving-roaming-between-mlds.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*,* [*24/656*](https://mentor.ieee.org/802.11/dcn/24/11-24-0656-03-00bn-seamless-roaming-signaling-details.pptx)*]. SP result: No objection.*

* + **Motion 337 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - The roaming preparation request frame includes Listen Interval field of the non-AP MLD for the target AP MLD
    - The roaming execution request frame includes Listen Interval field of the non-AP MLD for the target AP MLD if there is no roaming preparation request/response exchange beforehand
    - After the roaming execution request/response exchange with the current AP MLD, the non-AP MLD is by default in power save mode for all the setup links with the target AP MLD
    - After the roaming execution request/response exchange with the current AP MLD, during the TBD period to receive DL data from the current AP MLD, the non-AP MLD is not required to listen to any Beacon frames of the APs affiliated with the target AP MLD.

Move: Po-Kai Huang Second: Giovanni Chisci

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1874r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1874-01-00bn-further-details-on-improving-roaming-between-mlds.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*]. SP result: No objection.*

* + **Motion 338 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - After the roaming execution request/response exchange with the current AP MLD, the TBD period to receive DL data from the current AP MLD ends after the indicated timeout in the roaming execution response.

Move: Po-Kai Huang Second: Binita Gupta

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1874r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1874-01-00bn-further-details-on-improving-roaming-between-mlds.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*]. SP result: No objection.*

* + **Motion 339 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - 11bn defines CTS as Defer Signal to start protected short contention for the pending LL data

Move: Dmitry Akhmetov Second: Jay Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1918r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1918-01-00bn-hip-edca-sp2-tbd-resolution.pptx)*]. SP result: 99Y, 18N, 51A.*

* + **Motion 340 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - TGbn defines the reference value for the Protected Duration of the protected short contention

The default value is equal to AIFSN[2] + 7 slots (97 us)

The Defer Signal frame carry that Protected Duration in the Duration field

UHR AP may advertise values other than default

Move: Dmitry Akhmetov Second: Kiseon Ryu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1918r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1918-01-00bn-hip-edca-sp2-tbd-resolution.pptx)*]. SP result: 101Y, 15N, 49A*

* + **Motion 341 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - Define default parameters for P-EDCA for AC\_VO to be used during protected short contention period as follows:

P-EDCA CWmin=7, P-EDCA CWmax=7

P-EDCA AIFSN=2

An UHR AP may advertise values other than default

Move: Dmitry Akhmetov Second: Mohamed Abouelseoud

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1918r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1918-01-00bn-hip-edca-sp2-tbd-resolution.pptx)*]. SP result: No objection.*

* + **Motion 342 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - Established coordination between two APs can be terminated by an explicit teardown performed by one of the two APs.

Move: Shawn Kim Second: Kiseon Ryu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1849r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1849-01-00bn-management-of-the-established-multi-ap-coordination.pptx)*,* [*24/1220*](https://mentor.ieee.org/802.11/dcn/24/11-24-1220-02-00bn-a-framework-for-coordinated-access-points.pptx)*]. SP result: No objection.*

* + **Motion 343 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - 11bn allows a Multi-STA BA frame to include both Block Ack Bitmap and Feedback information if the preceding PPDU includes QoS Data frame(s) that solicit an immediate response (e.g., Ack or BlockAck context) and the non-AP STA is operating in a mode that allows inclusion of feedback information (e.g. DUO mode).

Move: Hongwon Lee Second: Dongguk Lim

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1490r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1490-02-00bn-more-consideration-of-icr-crf-for-in-device-coexistence.pptx)*]. SP result: No objection.*

* + **Motion 344 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - TGbn does not define a requirement for a UHR AP to report non-collocated APs in the Reduced Neighbor Report element that is carried in its Beacon and FILS Discovery frames

Move: Abhishek Patil Second: Pooya Monajemi

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-24/1884r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*,* [*24/1889*](https://mentor.ieee.org/802.11/dcn/24/11-24-1889-01-00bn-seamless-roaming-follow-up-1.pptx)*]. SP result: No objection.*

* + **Motion 345 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - The Link Reconfiguration Request/Response frames (with necessary extensions) shall be used as the roaming preparation Request/Response frames

The Per-STA Profile subelement of the Multi-Link shall be present and each corresponds to the requested/accepted links

TBD signaling to indicate that the request is to initiate roaming preparation

Other extension (if needed) TBD

Move: Abhishek Patil Second: Giovanni Chisci

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-24/1884r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*,* [*24/656*](https://mentor.ieee.org/802.11/dcn/24/11-24-0656-03-00bn-seamless-roaming-signaling-details.pptx)*,* [*25/385*](https://mentor.ieee.org/802.11/dcn/25/11-25-0385-01-00bn-deadline-indications-for-seamless-roaming.pptx)*,* [*25/384*](https://mentor.ieee.org/802.11/dcn/25/11-25-0384-01-00bn-suggested-parameter-indication-for-seamless-roaming.pptx)*,* [*25/386*](https://mentor.ieee.org/802.11/dcn/25/11-25-0386-01-00bn-operational-parameter-indication-for-seamless-roaming.pptx)*,* [*25/388*](https://mentor.ieee.org/802.11/dcn/25/11-25-0388-00-00bn-link-reconfiguration-framework-for-preparation-and-execution-phases-of-seamless-roaming.pptx)*,* [*25/390*](https://mentor.ieee.org/802.11/dcn/25/11-25-0390-00-00bn-link-reconfiguration-signaling-design-for-next-generation-wlans.pptx)*,* [*25/391*](https://mentor.ieee.org/802.11/dcn/25/11-25-0391-00-00bn-single-step-preparation-and-execution-for-seamless-roaming.pptx)*,* [*25/393*](https://mentor.ieee.org/802.11/dcn/25/11-25-0393-00-00bn-renegotiation-based-on-link-reconfiguration-framework-for-next-generation-wlans.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*24/1889*](https://mentor.ieee.org/802.11/dcn/24/11-24-1889-01-00bn-seamless-roaming-follow-up-1.pptx)*]. SP result: No objection.*

* + **Motion 346 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - The Link Reconfiguration Request/Response frames (with necessary extensions) shall be used as the roaming execution Request/Response frames?

The Per-STA Profile subelement of Multi-Link element is not required to be present.

TBD signaling to indicate that the request is to initiate roaming execution transition

Other extension (if needed) TBD

Move: Abhishek Patil Second: Binita Gupta

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-24/1884r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*,* [*24/1889*](https://mentor.ieee.org/802.11/dcn/24/11-24-1889-01-00bn-seamless-roaming-follow-up-1.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*24/656*](https://mentor.ieee.org/802.11/dcn/24/11-24-0656-03-00bn-seamless-roaming-signaling-details.pptx)*,* [*25/385*](https://mentor.ieee.org/802.11/dcn/25/11-25-0385-01-00bn-deadline-indications-for-seamless-roaming.pptx)*,* [*25/384*](https://mentor.ieee.org/802.11/dcn/25/11-25-0384-01-00bn-suggested-parameter-indication-for-seamless-roaming.pptx)*,* [*25/386*](https://mentor.ieee.org/802.11/dcn/25/11-25-0386-01-00bn-operational-parameter-indication-for-seamless-roaming.pptx)*,* [*25/388*](https://mentor.ieee.org/802.11/dcn/25/11-25-0388-00-00bn-link-reconfiguration-framework-for-preparation-and-execution-phases-of-seamless-roaming.pptx)*,* [*25/390*](https://mentor.ieee.org/802.11/dcn/25/11-25-0390-00-00bn-link-reconfiguration-signaling-design-for-next-generation-wlans.pptx)*,* [*25/391*](https://mentor.ieee.org/802.11/dcn/25/11-25-0391-00-00bn-single-step-preparation-and-execution-for-seamless-roaming.pptx)*,* [*25/393*](https://mentor.ieee.org/802.11/dcn/25/11-25-0393-00-00bn-renegotiation-based-on-link-reconfiguration-framework-for-next-generation-wlans.pptx)*]. SP result: 69Y 17N 45A.*

* + **Motion 347 (PDT-MAC)**

Move to incorporate the proposed text changes in [11-25/0244r5](https://mentor.ieee.org/802.11/dcn/25/11-25-0244-05-00bn-pdt-mac-ap-id-assignment.docx) to the latest TGbn draft

Move: Jay Yang Second: Giovanni Chisci

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/0244r5*](https://mentor.ieee.org/802.11/dcn/25/11-25-0244-05-00bn-pdt-mac-ap-id-assignment.docx)*]. SP result: No objection.*

* + **Motion 348 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - TGbn allows a second mode for security in roaming (in addition to the first mode with single TK used across all AP MLDs of the SMD) where a non-AP MLD can derive a new TK under the same PTKSA with the target AP MLD

The new TK is derived as part of the single PTKSA

The PN is maintained per PTKSA: The new TK negotiated with the target AP MLD shares the same PN space with the TK of the current AP MLD (PN is monotonically increasing)

Move: Giovanni Chisci Second: Chittabrata Ghosh

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-24/1882*](https://mentor.ieee.org/802.11/dcn/24/11-24-1882-02-00bn-link-setup-for-seamless-roaming.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*,* [*24/1874*](https://mentor.ieee.org/802.11/dcn/24/11-24-1874-01-00bn-further-details-on-improving-roaming-between-mlds.pptx)*]. SP result: No objection.*

* + **Motion 349 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - During the TBD time for retrieving DL from the Current AP MLD, the non-AP MLD may provide an indication to the Target AP MLD that the TBD time for DL retrieval is early-terminated before the TBD time
    - TBD signaling of the indication

Move: Giovanni Chisci Second: Pooya Monajemi

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1882*](https://mentor.ieee.org/802.11/dcn/24/11-24-1882-02-00bn-link-setup-for-seamless-roaming.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*,* [*24/1898*](https://mentor.ieee.org/802.11/dcn/24/11-24-1898-02-00bn-low-latency-roaming-flow.pptx)*,* [*24/1874*](https://mentor.ieee.org/802.11/dcn/24/11-24-1874-01-00bn-further-details-on-improving-roaming-between-mlds.pptx)*,* [*24/1857*](https://mentor.ieee.org/802.11/dcn/24/11-24-1857-03-00bn-enhancements-for-roaming-process.pptx)*,* [*24/2147r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-2147-01-00bn-discussion-on-buffered-data-deliver.pptx)*]. SP result: No objection.*

* + **Motion 350 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - During a roaming transition, the current AP MLD shall be capable of signaling termination of downlink data transmission to the non-AP MLD before the ~~transient~~ TBD time period to receive buffered downlink data from current AP MLD ~~period~~ ends

Signaling TBD

NOTE: AP sends the indication when there is no more pending DL data (all TIDs). TBD other conditions.

Move: Pooya Monajemi Second: Tuncer Baykas

* + - Discussion: (Some editorial changes were implemented to the motion text.)

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-24/1898r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1898-01-00bn-low-latency-roaming-flow.pptx)*,* [*11-24/1883r4*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*11-24/1874r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1874-01-00bn-further-details-on-improving-roaming-between-mlds.pptx)*,* [*24/2147r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-2147-01-00bn-discussion-on-buffered-data-deliver.pptx)*,* [*24/1857r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1857-03-00bn-enhancements-for-roaming-process.pptx)*]. SP result: No objection.*

* + **Motion 351 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - In the seamless roaming procedure, non-AP MLD can request not to transfer from the current AP MLD to the target AP MLD any of the following as part of the context transfer

The next SN for existing DL BA agreements of all TIDs

The latest SN that has been passed up for existing UL BA agreements of all TIDs

Move: Pooya Monajemi Second: Giovanni Chisci

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-24/1898r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1898-01-00bn-low-latency-roaming-flow.pptx)*,* [*11-24/1874r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1874-01-00bn-further-details-on-improving-roaming-between-mlds.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*]. SP result: No objection.*

* + **Motion 352 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - 11bn defines an SMD element that provides identification for the SMD and SMD level capabilities for a seamless mobility domain

The SMD element is advertised in Probe Response frames

The SMD element is included in Authentication frame when performing authentication with an SMD

The SMD element is included in (Re)Association Request & Response frames when performing initial association with the SMD-ME

Move: Binita Gupta Second: Stephen Rodriguez

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/656*](https://mentor.ieee.org/802.11/dcn/24/11-24-0656-03-00bn-seamless-roaming-signaling-details.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*,* [*24/1889*](https://mentor.ieee.org/802.11/dcn/24/11-24-1889-01-00bn-seamless-roaming-follow-up-1.pptx)*]. SP result: No objection.*

* + **Motion 353 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - 11bn enhances Neighbor Report element to provide SMD related information

Add a ‘Same SMD’ indication in the BSSID Information in the NR element, to signal whether the reported neighboring AP is part of the same SMD as the reporting AP

Allow including the SMD element as a subelement in the Optional Subelements of the Neighbor Report element, when reported neighboring AP is not part of the same SMD

Move: Binita Gupta Second: Tuncer Baykas

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/656*](https://mentor.ieee.org/802.11/dcn/24/11-24-0656-03-00bn-seamless-roaming-signaling-details.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*,* [*24/1889*](https://mentor.ieee.org/802.11/dcn/24/11-24-1889-01-00bn-seamless-roaming-follow-up-1.pptx)*]. SP result: No objection.*

* + **Motion 354 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - Enable the following contexts to be transferred to target AP MLD to preserve the data exchange context for the non-AP MLD
    - Block Ack Parameters and Block Ack Timeout Value indicated by the non-AP MLD for existing BA agreement of a TID
    - Next SN to be assigned for DL individually addressed data frame of each TID
    - Latest duplicate receiver cache for TID without BA agreement
    - latest SN that has been pass up for TID with UL BA agreement
    - Starting PN to be assigned for DL individually addressed frame by the target AP MLD
    - Initial value to be used by each replay counter of the target AP MLD for UL individually addressed frame
    - WinStartO of an existing DL BA agreement

So that the target AP MLD does not exceed reordering buffer window of the non-AP MLD

* + - TBD for other contexts

Move: Po-Kai Huang Second: Giovanni Chisci

* + - Discussion: None. (just confirmation)

C: I don’t think we should have the sub bullet text

A: It is no harm to have that for clarification. There is a requirement that the target AP MLDs are supposed to follow something. I think we should probably keep that as a notice. I don’t think it should be part of the information that is the context to be transferred.

C: I agree that what we describe the context to be transfer, we don’t need to describe that but then there will be separate

(Note to the Motion 354 text): The sub-bullet is not a part of the context to be just all the context to be transferred.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1874r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1874-01-00bn-further-details-on-improving-roaming-between-mlds.pptx)*,* [*23/1884*](https://mentor.ieee.org/802.11/dcn/23/11-23-1884-02-00bn-seamless-roaming.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*,* [*25/327*](https://mentor.ieee.org/802.11/dcn/25/11-25-0327-00-00bn-thoughts-on-dynamic-context-transfer-in-11bn.pptx)*,* [*24/656*](https://mentor.ieee.org/802.11/dcn/24/11-24-0656-03-00bn-seamless-roaming-signaling-details.pptx)*,* [*11-24/0083*](https://mentor.ieee.org/802.11/dcn/24/11-24-0083-01-00bn-smooth-roaming-follow-up-2.pptx)*]. SP result: No objection.*

* + **Motion 355 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - Do you agree to the following conditions for transmitting unsolicited unavailability indications that can be sent by a non-AP as a TXOP holder in a BSRP GI3 trigger frame:

No restriction when sent with QoS data transmitted in the TXOP

When sent without QoS data transmitted in the TXOP, not more than MaxStandaloneDuoBSRP number of times every beacon interval where MaxStandaloneDuoBSRP is a non-zero value and part of the DUO parameter set indicated by the AP

Note: BSRP GI3 Trigger frame is a BSRP Trigger frame that solicits an M-BA response that is carried in non-HT (dup) PPDU format

Move: Sindhu Verma Second: Laurent Cariou

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1559r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1559-01-00bn-in-device-coexistence-next-steps.pptx)*]. SP result: No objection.*

* + **Motion 356 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - TBD request frame initiating roaming preparation carries the Diffie-Hellman Parameter element of the non-AP MLD when new PTK is derived
    - TBD response frame during roaming preparation carries Diffie-Hellman Parameter element generated by the target AP MLD when new PTK is derived
    - Non-AP MLD and the target AP MLD derive the PTK based on the shared PMK and DHss in TBD request and TBD response frames

Note: Details of the algorithm used to derive the DHss are TBD

Move: Chittabrata Ghosh Second: Thomas Derham

* + - Discussion:

C: I request to add the note (“Details of the algorithm used to derive the DHss are TBD.”) based on the offline discussion.

C: I am wondering why this is even necessary since the standard already has pre off. Why doesn’t pre off take care of this? Why do you need to do another Diffie-Hellman?

(Some comments for the editorial changes were implemented to the motion text.)

C: This is unnecessary. It’s not secure.

C: I request the recorded vote.

(A recorded vote was requested.)

**Preliminary Result: 123Y, 17N, 102A (Preliminary Passed.)**

**Result: 122Y, 17N, 96A (Passed.)**

*Reference docs: [*[*24/1882*](https://mentor.ieee.org/802.11/dcn/24/11-24-1882-02-00bn-link-setup-for-seamless-roaming.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*]. SP result: No objection.*

* + **Motion 357 (PDT-MAC)**

**Move to incorporate the proposed text changes in** [**11-25/454r6**](https://mentor.ieee.org/802.11/dcn/25/11-25-0454-06-00bn-pdt-mac-dso.docx) **to the latest TGbn draft**

Move: Morteza Mehrnoush Second: Vishnu Ratnam

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-25/454r6*](https://mentor.ieee.org/802.11/dcn/25/11-25-0454-06-00bn-pdt-mac-dso.docx)*] SP result: No objection.*

* + **Motion 358 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - TGbn defines new actions for Public Action frames for MAPC communications such as discovery and negotiations

An action is defined for MAPC Discovery

An action is defined for MAPC Negotiation Request

An action is defined for MAPC Negotiation Response

Others are TBD

Move: Giovanni Chisci Second: Abhishek Patil

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1220*](https://mentor.ieee.org/802.11/dcn/24/11-24-1220-02-00bn-a-framework-for-coordinated-access-points.pptx)*,* [*24/0407r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-0407-00-00bn-r-twt-multi-ap-coordination-follow-up.pptx)*]. SP result: No objection*

* + **Motion 359 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - When an AP use Management frames to discover the capabilities and/or parameters of individual M-AP coordination schemes, the AP shall use the defined MAPC Public Action frame with the following setting:

The action field is set to MAPC Discovery

Move: Giovanni Chisci Second: Abhishek Patil

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1220*](https://mentor.ieee.org/802.11/dcn/24/11-24-1220-02-00bn-a-framework-for-coordinated-access-points.pptx)*]. SP result: No objection*

* + **Motion 360 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - When an AP (AP1) uses an individually addressed Management frame to initiate a negotiation to establish agreements for M-AP coordination schemes (if enabled by another AP (AP2)), the AP (AP1) shall use the defined MAPC Public Action frame with the following setting:

The action field is set to MAPC Negotiation Request

If new negotiations are disabled by another AP (AP2) the AP (AP1) shall not send a negotiation request to the other AP (AP2)

TBD details of ‘new negotiations disabled’

Move: Giovanni Chisci Second: Abhishek Patil

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1220*](https://mentor.ieee.org/802.11/dcn/24/11-24-1220-02-00bn-a-framework-for-coordinated-access-points.pptx)*,* [*25/0378r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0378-00-00bn-multi-ap-coordination-negotiation-indication.pptx)*]. SP result: No objection*

* + **Motion 361 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - When an AP (AP2) receives an individually addressed Management frame that initiates a negotiation to establish agreements for M-AP coordination schemes, the AP (AP2) shall respond by using the defined MAPC Public Action frame with the following setting, if negotiations are enabled:

The Action field is set to MAPC Negotiation Response

Move: Giovanni Chisci Second: Brian Hart

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1220*](https://mentor.ieee.org/802.11/dcn/24/11-24-1220-02-00bn-a-framework-for-coordinated-access-points.pptx)*]. SP result: No objection*

* + **Motion 362 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - A Co-RTWT Requesting AP shall include one or more Co-RTWT Parameter Set fields corresponding to each requested R-TWT schedule in the TBD individually addressed Management frame used for the request to the Co-RTWT Responding AP. The Co-RTWT Parameter Set field includes the following:

Target Wake Time field

Broadcast TWT ID field

Broadcast TWT Persistence

TWT Wake Interval Mantissa

TWT Wake Interval Exponent

Nominal Minimum TWT Wake Duration

TBD other fields

Move: Giovanni Chisci Second: Kumail Haider

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1220*](https://mentor.ieee.org/802.11/dcn/24/11-24-1220-02-00bn-a-framework-for-coordinated-access-points.pptx)*,* [*23/1887r1*](https://mentor.ieee.org/802.11/dcn/23/11-23-1887-01-00bn-coordinated-medium-access-for-multi-ap-deployments.pptx)*,* [*24/160r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-0160-01-00bn-r-twt-coordination-negotiation-in-multi-bss.pptx)*,* [*24/908r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-0908-00-00bn-negotiation-for-r-twt-coordination-follow-up.pptx)*,* [*24/0407r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-0407-00-00bn-r-twt-multi-ap-coordination-follow-up.pptx)*]. SP result: 97 Y / 28 N / 66 A*

* + **Motion 363 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - The Co-TDMA sharing AP and the Co-TDMA coordinated AP shall have the same primary 20 MHz channel.

Move: Abhishek Patil Second: Gaurang Naik

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-23/1895*](https://mentor.ieee.org/802.11/dcn/23/11-23-1895-02-00bn-c-tdma-frame-sequence.pptx)*]. SP result: No objection.*

* + **Motion 364 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - A serving AP MLD can use the BTM procedure with update(s) (if required) to recommend one or more candidate target AP MLDs within the UHR seamless roaming mobility domain to a non-AP MLD for roaming.

Note – An AP can transmit the BTM Request frame unsolicited or as a response to the BTM Query frame from a non-AP MLD.

* + - TBD – detailed information to be carried

Move: Liwen Chu Second: Binita Gupta

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1889r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1889-01-00bn-seamless-roaming-follow-up-1.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*24/658*](https://mentor.ieee.org/802.11/dcn/24/11-24-0658-03-00bn-optimizing-roaming-scan.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*]. SP result: No objection.*

* + **Motion 365 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - An AP shall not allow the use of NPCA within its BSS if the BSS operating bandwidth is less than or equal to 40 MHz.

Move: Liwen Chu Second: Laurent Cariou

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/****~~1892~~1891r2***](https://mentor.ieee.org/802.11/dcn/24/11-24-1891-02-00bn-npca-follow-up.pptx)*\*]. SP result: No objection.*

(\* Secretary’s note: Because 24/1892r2 does not exist on the mentor server and the SP1 on [1891r2](https://mentor.ieee.org/802.11/dcn/24/11-24-1891-02-00bn-npca-follow-up.pptx) is the same as the motion 365, it is seemed that the reference DCN is not 1892r2 but [1891r2](https://mentor.ieee.org/802.11/dcn/24/11-24-1891-02-00bn-npca-follow-up.pptx).)

* + **Motion 366 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - If a TXOP on the NPCA Primary channel overlaps with the TBTT, the AP shall not transmit the Beacon frame or group addressed frames until it switches back to the BSS Primary channel.
    - NOTE – The NPCA AP and non-AP STA participating in frame exchanges must not switch back to the BSS Primary channel at the TBTT and can continue operating on NPCA Primary until the OBSS transmission ends on BSS Primary channel. In such cases, the group addressed frame will be buffered and delivered immediately following the next DTIM Beacon, unless explicitly specified otherwise.

Move: Liwen Chu Second: Gaurang Naik

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1891r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1891-02-00bn-npca-follow-up.pptx)*]. SP result: No objection.*

* + **Motion 367 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - TGbn defines or improves an existing mechanism so that a non-AP STA that is a TXOP responder can indicate its buffered ~~low latency~~ LL traffic needs (for traffic from the ~~TxOP~~ TXOP responder to the ~~TxOP~~ TXOP Holder) in a ~~control response frame~~ Multi-STA Block Ack. The TXOP holder should consider the indication in determining subsequent actions. Subsequent actions related to this indication are out of the scope of the standard.

~~Note: whether an AP can Indicate its low latency needs is TBD~~

The Low Latency Indication is included in the Feedback field of the Feedback Per AID TID Info field (the one that carries control feedback).

The Feedback Type field is set to 1

Note: Feedback Type field set to 0 is used for DUO feedback

TBD bit(s) in the Feedback field is(are) defined to provide the low latency need(s)

Move: Liwen Chu Second: Mohamed Abouelseoud

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[***~~24~~****25/0421r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0421-00-00bn-low-latency-indication.pptx)*\*,* [*25/439*](https://mentor.ieee.org/802.11/dcn/25/11-25-0439-00-00bn-further-details-on-uhr-low-latency.pptx)*]. SP result: No objection.*

(\* Secretary’s note: Because [24/421r0](https://mentor.ieee.org/802.11/dcn/24/11-24-0421-00-0amp-amp-link-access.pptx) is for AMP TIG/SG and the SP1 on [25/0421r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0421-00-00bn-low-latency-indication.pptx) is the same as the motion 367, it is seemed that the reference DCN is not [24/0421r0](https://mentor.ieee.org/802.11/dcn/24/11-24-0421-00-0amp-amp-link-access.pptx) but [25/0421r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0421-00-00bn-low-latency-indication.pptx).)

* + **Motion 368 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - For seamless roaming, a non-AP MLD is allowed to request preparing more than one candidate target AP MLDs in an SMD during the roaming preparation phase

Preparation with multiple AP MLDs is performed using a separate roaming preparation request for each AP MLD

If successful roaming preparation was performed with multiple candidate target AP MLDs, then the non-AP MLD shall attempt roaming execution with only one of those target AP MLDs at a time.

Retries with other target AP MLDs are permitted for roaming execution

TBD on policy indication from the AP on multiple target AP MLDs preparation

Move: Binita Gupta Second: Giovanni Chisci

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/0656*](https://mentor.ieee.org/802.11/dcn/24/11-24-0656-03-00bn-seamless-roaming-signaling-details.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*,* [*24/1857r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1857-03-00bn-enhancements-for-roaming-process.pptx)*]. SP result: No objection.*

* + **Motion 369 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - For a Seamless Mobility Domain (SMD), the SMD and the 802.1X Authenticator component in the corresponding SMD-ME are uniquely identified by an SMD Identifier

The SMD Identifier is in the format of a 48-bit MAC address

The SMD Identifier is used in establishing single PMKSA and PTKSA for a non-AP MLD that associates with the SMD-ME

Move: Binita Gupta Second: Abhishek Patil

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/0656*](https://mentor.ieee.org/802.11/dcn/24/11-24-0656-03-00bn-seamless-roaming-signaling-details.pptx)*,* [*24/1894*](https://mentor.ieee.org/802.11/dcn/24/11-24-1894-03-00bn-smd-architecture.pptx)*,* [*23/1937*](https://mentor.ieee.org/802.11/dcn/23/11-23-1937-01-00bn-smooth-roaming-follow-up-1.pptx)*,* [*24/1889*](https://mentor.ieee.org/802.11/dcn/24/11-24-1889-01-00bn-seamless-roaming-follow-up-1.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-04-00bn-seamless-roaming.pptx)*,* [*24/1884*](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-01-00bn-signaling-considerations-for-seamless-roaming.pptx)*,* [*24/1882*](https://mentor.ieee.org/802.11/dcn/24/11-24-1882-02-00bn-link-setup-for-seamless-roaming.pptx)*]. SP result: No objection.*

* + **Motion 370 (MAC)**

**Move to add to the TGbn SFD the following:**

* + - For the following features, if an AP supports the feature, then the AP shall accept a request from an associated STA to enable or disable the feature on its (STA) side

Dynamic unavailability operation

Dynamic power save

Move: Laurent Cariou Second: Liuming Lu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1226r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1226-00-00bn-icf-icr-design.pptx)*,* [*24/1261r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1261-03-00bn-considerations-on-client-power-save-for-11bn.pptx)*]. SP result: No objection.*

* + **Motion 371 (PHY)**

**Move to add to the TGbn SFD the following:**

* + - The following information shall be exchanged before COBF PPDU:

Min-Nsym and Max-Nsym indication about the COBF PPDU length sent in the COBF invite frame

Suggested Nsym indication in the COBF response frame from shared AP

Sharing AP is allowed to ignore the shared AP’s suggestion

Suggested value shall not be smaller than the Min-Nsym value from sharing AP

Move: Sameer Vermani Second: Alice Chen

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/381r1*](https://mentor.ieee.org/802.11/dcn/25/11-25-0381-01-00bn-some-open-issues-on-cobf.pptx)*]. SP result: No objection.*

* Straw Polls – Part 1
  + **SP1:** You-Wei Chen, CBF Sounding: [25/81r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0081-00-00bn-sounding-pdt-related-issues.pptx)

Do you agree to include the following text to the 11bn SFD?

* + - The following information shall be exchanged before COBF PPDU:
    - Discussion: None.

**Result: No Objection.**

* + **SP2:** You-Wei Chen, CBF Sounding: [25/81r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0081-00-00bn-sounding-pdt-related-issues.pptx)

Do you agree to include the following text to the 11bn SFD?

* + - EHT Compressed Beamforming/CQI report containing UHR Co-BF sounding feedback shall be carried in EHT TB PPDU
    - Discussion: None.

**Result: No Objection.**

* + **SP3:** You-Wei Chen, CBF Sounding: [25/81r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0081-00-00bn-sounding-pdt-related-issues.pptx)

Do you agree to include the following text to the 11bn SFD?

* + - UHR Co-BF sounding reuses the EHT sounding segmentation and retransmission of 11be feedback segments rules.
    - Discussion:

C: Fragmentation processing may be different between 11be and 11bn, why it is allowed to retransmission than another one not allowed?

A: “feedback segment” should be “11be feedback segment”.

**Result: No Objection.**

* + **SP4:** You-Wei Chen, CBF Sounding: [25/81r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0081-00-00bn-sounding-pdt-related-issues.pptx)

Do you agree to include the following text to the 11bn SFD?

* + - UHR Co-BF sounding uses EHT MU full bandwidth feedback.
    - Discussion:

C: Does the term of “full bandwidth” tell the relationship between the NDP and the CSI feedback?

A: It is related to the CSI feedback.

**Result: No Objection.**

(SP5 was deferred.)

* + **SP6:** Jay Yang, CBF sounding: [11-25/0006r2](https://mentor.ieee.org/802.11/dcn/25/11-25-0006-02-00bn-sounding-procedure-follow-up.pptx)

Do you agree to include the following text to the 11bn SFD?

* + - UHR Co-BF sounding uses EHT MU full bandwidth feedback.
    - Discussion:

C: What is required here and why do we even need to put this out in the specs? In some cases, there is some sort of PIFS recover is going to happen and another transmission is going to follow.

A: The current recovery schemes only focus on the data frame and the management frame, not for the control frame. NDPA is a control frame. In the current baseline, NDPA and NDP are transmitted are by the single device. But we never define NDPA can retransmission. If you look at the sequences across BSSs. NDPA and NDP are transmitted from different APs.

(The discussion was resumed to the next session.)

* Recessed at 15:29.

# March 14th, Thursday (16:00-18:00 ET) - Joint

* The Chair, Alfred Asterjadhi (Qualcomm), calls the meeting to order.
* Yusuke Asai (NTT) is serving as the Secretary.
* Registration information
  + The chair announced that registration is needed to attend this meeting.
* Meeting protocol
  + The chair announced that everyone is required to log in WebEx to vote.
  + Please ensure that the following information is listed correctly when joining the call:
    - "[voter status] First Name Last Name (Affiliation)"
* 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 Wireless Interim/Plenary Session” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click “TGbn conference call that you are attending.
  + If you are unable to record the attendance via [IMAT,](https://imat.ieee.org/attendance) then please send an e-mail to:
    - Joint: Yusuke Asai ([yusuke.asai@ntt.com](mailto:yusuke.asai@ntt.com)) & Alfred Asterjadhi ([aasterja@qti.qualcomm.com](mailto:aasterja@qti.qualcomm.com))
    - PHY: Sigurd Schelstraete ([sschelstraete@maxlinear.com](mailto:sschelstraete@maxlinear.com)), Tianyu Wu ([tianyu@apple.com](mailto:tianyu@apple.com)), and Dongguk Lim ([dongguk.lim@lge.com](mailto:dongguk.lim@lge.com))
    - MAC: Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.com)), and Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com)), Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com))
* 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 spoke/wrote 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 the agenda document ([11-25/0221r8](https://mentor.ieee.org/802.11/dcn/24/11-24-2074-11-00bn-tgbn-jan-2025-meeting-agenda.pptx).)
* Agenda
  + Chair reviewed proposed agenda found in [11-25/0221r8](https://mentor.ieee.org/802.11/dcn/25/11-25-0221-08-00bn-tgbn-mar-2025-meeting-agenda.pptx).
  + Discussion:

(Some requests to reorder the SPs and implemented in the agenda.)

* + The modified agenda was approved with unanimous consent.
* Straw Polls

(Continued from the previous Joint session.)

(SP6 was deferred.)

* + **SP7:** Jason Y. Guo, CSR: [23/1868r2](https://mentor.ieee.org/802.11/dcn/23/11-23-1868-02-00bn-coordinated-spatial-reuse-design.pptx), [24/2060r1](https://mentor.ieee.org/802.11/dcn/24/11-24-2060-01-00bn-csr-cobf-protocol-design.pptx), [25/254r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0254-00-00bn-co-sr-power-control-considerations.pptx)

Do you support to include in the 11bn SFD?

* + - In Coordinated Spatial Reuse, the following information shall be carried in the Trigger frame that initiates concurrent CSR transmissions:

The transmit power limit of the shared AP

* + - The shared AP Tx power limitation indicated by the sharing AP should not be lower than the minimum TX power indicated by the shared AP in its request.
    - The transmit power of the sharing AP
    - Discussion

C: There could be some alternative ways to do this transmit power calculation at the shared AP. Some ways are more efficient and more robust. To do this within the TXOP using the ICF/ICR frame exchange between the sharing AP and its own associated client, which will save a lot of overhead. I believe this require more discussion. I request to defer the SP.

A: I think in general the measurement is need anyway. Either you do it in the background regularly before the transmission or you do the measurement every time within the TXOP, I think each way has its pros and cons. If you do it every time in the transmission, then there will be a fixed overhead. If you do by background measurement, it may not be so accurate, which just relies on the path loss. So, I think just indicating the power limit for the shared AP is a simple way for improving accuracy. Maybe we could also make another mode, I think this mode should be a baseline mode.

C: We already have ICF/ICR frame exchange within the TXOP. Only having it, some negligible overhead. On the other hands, doing it in the background, that causes a lot of overhead. This require more discussion and I again request to defer the SP.

C: I also request to defer the SP. We did have some concern on this Tx power of the shared AP aspect, especially how that change should be within a certain limit, rather than the power itself.

A: I added some bullets to reflect that there should be a range indicated by the shared AP.

C: We discussed about indicating some limits regarding how much the Tx power can be varied, and the current Tx power is not known to the sharing AP.

C: I am in favor of this SP. Currently, there are no now new mechanisms for RSSI measurement for spatial reuse. I think it is common behavior that sharing AP calculates the shared AP’s power of the hared AP then indicates its value to the shared AP. And I’d like to add transmit power control is very common behavior for uplink MU transmissions. When a station receives the trigger frame, the station needs to adjust transmission power according to the target RSSI value. So, I don’t think it is very difficult operation.

A: I request to conduct a recording SP.

(A recorded SP was requested.)

**Result: 94Y, 55N, 86A**

* + **SP8:** Sherief Helwa, CBF: [25/0412r3](https://mentor.ieee.org/802.11/dcn/25/11-25-0412-03-00bn-cobf-frame-sequences-and-signaling-details.pptx)

Do you agree to use the following CoBF transmission sequence to support STAs requiring ICF/ICR before data frame exchanges?

* + - The frame sequence consists of:

A CoBF Invite/CoBF Response frame exchange between the sharing and shared APs.

Follows ICF/ICR frame exchanges between the APs and their associated STAs happening sequentially across the two APs; sharing AP then shared AP.

The presence of the ICF/ICR frame exchange from each AP is conditional on the CoBF PPDU being addressed to one or more STAs requiring ICF.

The presence of the ICF/ICR frame exchange from each AP is indicated in the CoBF Invite/Response frames.

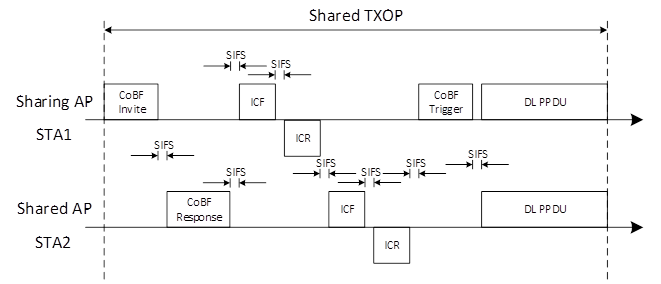
ICF1-ICR1 are exchanged between the sharing AP and its STAs

ICF2-ICR2 are exchanged between the shared AP and its STAs

Finally, a CoBF Trigger/Sync frame preceding the data PPDUs sent by the two APs simultaneously.

Frame sequence for Ack information polling is TBD.

Whether the CoBF-invite and ICF1 can be merged and/or CoBF-response and ICF2 can be merged is TBD



* + - Discussion

C: If the shared AP did not get a response from did not get the ICR form its stations, how can it confirm the sharing AP that it did not get the response?

A: Basically, we need to acknowledge that any sort of frame sequence is going to have some possible failure scenarios. This is basically one of the cases that we are trying to avoid by adding some more robustness, knowing that we already have the sounding sequence that is going to happen prior to this transmission sequence. So, most likely, a station that is irresponsible is not going to be included in order to avoid this scenario as much as we can. But I don’t think anyone can guarantee that. We can reduce the failure probability to zero.

C: We need to understand the consequence of the failure. In the failure case, the sharing AP1 will not be aware. It will send the CoBF trigger frame, but it will only have half of the special stream available. It is a waste and it is the TXOP belongs to the sharing AP, and it was not aware that it can use the entire TXOP. Alternatively, you can swap the order.

A: Combining the ICFs is already included in this SP on the last sub bullet. We are saying that the CoBF invite and ICF can be merged, and CoBF response and ICF2 can be merge with TBD. We do not preclude this. We are providing this as a suggestion, as a baseline sequence. I think the concern about the CoBF sequence failure itself is not against the sequence because it is inherently understood from any sort of sequences between two APs, where there is non-zero probability of failure.

C: This SP is fair because it requires further discussion.

C: In order to keep consistency between the figure and the text, the ICF in the figure should be updated to have numbers (such as ICF1).

A: It is easier to modify the text to remove the numbering of the ICFs. But it was made in the PHY ad-hoc.

C: Many people already noticed that is very long sequence. We need to doubt that whether we had with such a long sequence, whether they still have gain in CoBF. In addition, because it is the frame exchanges that are separated to two BSSs, the new sequence never met before. So, the robust message is also needed to consider.

A: I mean for this managed to like harmonized and arrange with like the majority of the members here. So, I am a little bit surprised.

C: It is a new sequence that first four STAs that are separated to wto BSS. So, I think this is similar concern about robustness. If you have some error, the recovery procedure may be complex.

C: It seems that this procedure introduces very high overhead. Did you evaluate how much gain we can get before we use this CoBF procedure?

A: This is more of a comment that is against CoBF as a whole feature, but that is why we are trying to make it as simple as possible. This is the simplest form for the transmission sequence that we managed to agree on. I don’t think there is any disagreement about this. I think you have the concern about overhead against CoBF feature itself, not against the sequence which I am proposing here.

C: We have spent a lot of time here arguing details that really should be going into a draft and now into the SFD. I think that this whole process and putting a diagram like this is a waste of time. I would suggest we focus on high level requirements for the SFD and leave these details for actual draft text.

A: We are trying to follow the same steps as the sounding sequence. In the SFD, you would see a couple of motions that are covering the sounding sequences with frame exchanges.

C: My concern with this sequence is not just the complex also the shared AP is tied with a particular shared AP. When one AP may have multiple agreements with more than one AP, the AP may hold all the candidate APs.

A: The idea of having a pool of other shared AP candidate shared APs and choosing one of them, is an idea worth of discussion, but it is not also precluded here. We can have a prior frame exchange between one shared AP and another sets of APs. But it is almost too hard to include this with the CoBF frame exchange. I request a recorded SP.

(A recorded SP was requested.)

**Result: 126Y, 95N, 64A**

* + **SP9:** Sherief Helwa, CBF: [25/0412r3](https://mentor.ieee.org/802.11/dcn/25/11-25-0412-03-00bn-cobf-frame-sequences-and-signaling-details.pptx)

Do you agree to use the following sequence for acknowledgement information polling from STAs scheduled in a CoBF transmission sequence

* + - MU-BAR/BA frame exchanges are used by each AP separately, i.e., sequentially

NOTE1: The first MU BAR (transmitted by the sharing AP) may be replaced by the aggregation of a Basic Trigger frame in the preceding DL PPDU as in baseline.

NOTE2: The frame sequence for eliciting simultaneous ACKs from clients of both sharing and shared APs if agreed in PHY is TBD

* + - Discussion:

C: I am wondering we can find a new way to improve CoBF efficiency.

A: We already have legacy devices. What we are trying to do is just extend it two BSS for CoBF sequence. If you are interested in more advanced ways to pull the acknowledgment information, we can discuss it.

(Some members had concern about confusion regarding the on the original SP text (in the slide 91of [11-25/0221r8](https://mentor.ieee.org/802.11/dcn/25/11-25-0221-08-00bn-tgbn-mar-2025-meeting-agenda.pptx)) and it was removed.)

C: I don't understand what is embedded in a Basic Trigger frame.

A: It is aggregated with a basic trigger frame.

C: If we don’t have the figure, the SP text is not clear.

C: I think it replaces the MU BAR and performs the functionality of the MU BAR when it is aggregated along with other data frames in the PSDUs that are contained in the downlink.

A: I defer the SP.

(The SP was deferred.)

* + **SP11:** Sherief Helwa, CBF: [25/0412r3](https://mentor.ieee.org/802.11/dcn/25/11-25-0412-03-00bn-cobf-frame-sequences-and-signaling-details.pptx)

Do you support that any CoBF sounding sequence that includes Cross-BSS CSI collection shall be initiated by a two-way handshake between the two APs participating in the sequence

* + - The two-way handshake exchange consists of a Sounding Invite frame and a Sounding Response frame.
    - The Sounding Invite/Response frame exchange is used to:
    - The frame sequence consists of:

Confirm the availability of both APs for CSI collection.

TBD for indication whether each AP will include ICF/ICR exchanges with its client or not.

Further information to be exchanged is TBD.

* + - Discussion

C: I will concern for this overhead of a long sequence of CoBF frame exchange. We need to leave it flexible to reduce the overhead.

A: You don’t have this initial frame exchange all the time. It is very useful because you are having some exchanges going on in parallel in two different assets. It is useful to make sure of the availability of the second AP as well as medium protection and so on.

C: It depends on scenarios. Why do we need to test so that it shouldn’t depend on the implementation choice?

C: Regarding this last SP, we already agree that there is a big concern about the length of the sequence. I don’t understand why there is a need for a dedicated the another inviting and response for the sounding.

A: It is not part of the other sequence. They can happen in two different TXOPs.

C: But if they are included within the same TXOP, are you still proposing to have a separate invite and response?

A: That is a separate discussion. There is no agreement to include the sounding and the transmission phases within the same TXOP. But if that happens, we can discuss this.

C: The whole idea of the lengthy sounding sequence is to make it transparent to stations. So, the motivation for sounding on its own does not make the invite/response on the sounding sequence.

A: It does make a lot of sense. Because you can do the sounding one and you can do multiple TXOPs for the transmission. I defer the SP, but I just want to hear from the members.

(The SP was deferred.)

* + SP12: Dibakar Das, CBF: [25/0413r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0413-00-00bn-support-for-emlsr-during-cbf.pptx)

Do you agree:

* + - if an eMLSR non-AP MLD that receives an ICF addressed to one of its affiliated STAs during CoBF sequences and if the affiliated STA responds with an ICR, then the eMLSR non-AP MLD shall follow the eMLSR procedure defined in 35.3.17, except that the STA shall use an extended time-out period prior to switching back upon inactivity:

The duration of the extended time-out period shall be sufficient to cover any inactivity period within the COBF sequence, e.g. (but not limited to), from the end of the ICR to the beginning of the data PPDU, or from the DL PPDU until the beginning of the MU-BAR frame from the shared AP for STAs associated with the shared AP

The signaling and derivation of these timeout periods to the STA are TBD.

Once the eMLSR STA(s) switch back to listen mode, they start using the default time-out period (aSIFSTime + aSlotTime + aRxPHYStartDelay) in future TXOPs unless otherwise indicated in the ICF.

This is applicable to CoBF transmission sequence

* + - Discussion

C: This contribution has not been presented yet. I think we need more time to review for the SP.

A: I am not sure probably it was not presented. But this took all the contribution as far as I am aware is literally about the particular case.

**Result: 81Y, 78N, 93A**

(SP13 was deferred)

(SP10 was deferred.)

* + **SP14:** Kosuke Aio, CSR/CBF: [24/2059r2](https://mentor.ieee.org/802.11/dcn/24/11-24-2059-02-00bn-discussion-on-initial-frame-exchange-in-csr-cobf.pptx)

Do you agree that, as part of the Co-SR/Co-BF procedure, a sharing AP shall send an initial frame including a candidate coordination scheme to other AP(s) to exchange necessary information and check the status of the AP(s)?

* + - At least either Co-SR or Co-BF is specified as the coordination scheme. Others are TBD.
    - When the coordination scheme specifies Co-BF, Sharing AP shall send the frame to one Shared AP as Co-BF invite frame.
    - When the coordination scheme specifies Co-SR, Sharing AP shall send the frame to one or multiple candidate AP(s) as Co-SR invite frame or Co-SR polling frame.
    - The frame format of the initial frame is TBD.
    - The necessary information are TBD.
    - Discussion:

C: For CoBF, the candidate AP is limited to one, but for CSR, the candidate can be multiple. So, what is the motivation behind the difference?

A: First reason is concern of the synchronization issue for CoBF. Second reason for CNR having two mode is to allow multiple APs and transmission with Tx power control. So, that is why I divided two types of the limitation about APs.

C: How do we have multiple candidate APs participating together? How do we control the power to make sure they don’t interference with such each other?

C: You are allowing multiple shared APs at the spatial reuse approach. Do we have any mechanisms to limit the interference between one shared AP and another? Because we don’t really have anything related to this.

A: We had a lot of discussion with simulations where there are multiple APs. I think that the CSR mode 2 to has been agreed in the SFD, So, we need to cover such a case for this procedure.

C: Is this exchange done with every sequence, or less frequently?

A: I don’t intend to do every sequence. I request to conduct a recorded SP.

(A recorded SP was requested.)

**Result: 79Y, 86N, 87A**

* + **SP15:** PDT

[25/0414](https://mentor.ieee.org/802.11/dcn/25/11-25-0414-00-00bn-pdt-joint-ndp-announcement-frame-format.docx) PDT-Joint-NDP-Announcement frame format

* + - Discussion: None.

**Result: No objection.**

* + Request to re-run the SP7

C: During the discussion on the SP7, I received some comment that the commenters want to have more time to just evaluate some alternative solution. I had some offline discussion with members and many people change their mind. To make progress, I would like to try another time to see the SP.

**Motion:**

**Move to change the agenda by running SP7 prior to item Motions**

Mover: Jason Y. Guo Second: Yunbo Li

* + - Discussion

C: It is not just a matter of changing the agenda. It is also we are not supposed to return things that have already been run in the same session.

A: It is a straw poll and it is for information gathering.

C: Regarding a motion to change the agenda, it requires two thirds of approval ratio. Before agenda approval, it requires simple majority. Once the agenda has been approved, then it two thirds.

C: I have another SP. Do we need to change the agenda?

A: After running the motions, we will run the straw polls subject to time.

**Result: 115Y, 70N, 51A (failed.)**

* Motions
  + The following motions ([11-25/0014r12](https://mentor.ieee.org/802.11/dcn/25/11-25-0014-12-00bn-tgbn-motions-list-part-2.pptx): TGbn Motion List – Part 2) were conducted.
  + **Motion 372 (Joint)**

**Move to add to the TGbn SFD the following:**

* + - UHR Co-BF sounding reuses EHT Compressed Beamforming/CQI report

Move: You-Wei Chen Second: Jianhan Liu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/81r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0081-00-00bn-sounding-pdt-related-issues.pptx)*]. SP result: No objection.*

* + **Motion 373 (Joint)**

**Move to add to the TGbn SFD the following:**

* + - EHT Compressed Beamforming/CQI report containing UHR Co-BF sounding feedback shall be carried in EHT TB PPDU

Move: You-Wei Chen Second: Jianhan Liu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/81r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0081-00-00bn-sounding-pdt-related-issues.pptx)*]. SP result: No objection.*

* + **Motion 374 (Joint)**

**Move to add to the TGbn SFD the following:**

* + - UHR Co-BF sounding reuses the EHT sounding segmentation and retransmission of 11be feedback segments rules.

Move: You-Wei Chen Second: Jay Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/81r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0081-00-00bn-sounding-pdt-related-issues.pptx)*]. SP result: No objection.*

* + **Motion 375 (Joint)**

**Move to add to the TGbn SFD the following:**

* + - UHR Co-BF sounding uses EHT MU full bandwidth feedback.

Move: You-Wei Chen Second: Aiguo Yan

* + - Discussion:

**Result: Approved with unanimous consent.**

*Reference docs: [*[*25/81r0*](https://mentor.ieee.org/802.11/dcn/25/11-25-0081-00-00bn-sounding-pdt-related-issues.pptx)*]. SP result: No objection.*

* + **Motion 376 (PDT-Joint)**

**Move to incorporate the proposed text changes in 11-24/0414r0 to the latest TGbn draft**

Move: You-Wei Chen Second: Jianhan Liu

* + - Discussion:

**Result: Approved with unanimous consent.**

*Reference docs: [*[*11-24/0414r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-0414-00-00bn-improving-acknowledgment-mechanisms.pptx)*]. SP result: No objection.*

* Straw Polls

(The secretary named the following SPs for identification purposes.)

* + **SP-A:** Jay Yang, MAP: [24/1693r3](https://mentor.ieee.org/802.11/dcn/24/11-24-1693-03-00bn-the-mapc-security-framework.pptx), [23/1836r3](https://mentor.ieee.org/802.11/dcn/23/11-23-1836-03-00bn-map-security-consideration.pptx), [24/1220r2](https://mentor.ieee.org/802.11/dcn/24/11-24-1220-02-00bn-a-framework-for-coordinated-access-points.pptx)

Do you agree that TGbn defines a procedure using pre-association security negotiation (PASN) to derive the key(s) needed to protect individually addressed Management frames exchanged between two APs as part of the MAPC operation

Note – it is TBD whether any extensions will be needed for PASN.

*Supporting list:* [*24/1693r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1693-03-00bn-the-mapc-security-framework.pptx)*,* [*23/1836r3*](https://mentor.ieee.org/802.11/dcn/23/11-23-1836-03-00bn-map-security-consideration.pptx)*,* [*24/1220r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1220-02-00bn-a-framework-for-coordinated-access-points.pptx)

* + - Discussion

C: I think we had lots of discussion and harmonization, then we decided to add a note saying how do you protect the frames where the APs are not in the same BSS. But I don’t see the note here, and you also agree that there is a critical part to highlight.

A: You want to add a not to do some constraint but other members don’t want to constraint because it is a very high-level SP. We can consider some further conditions win the next step. I think the current SP text is quite open for every case.

C: I have a question on the scope of MAPC. I know in D0.1 the UHR seamless roaming is considered a part of MAPC. I think the MAPC section would be used for roaming exchanges.

A: I think that was an accidental mistake that roaming under the MAP operation. We received a couple of modifications from the editor.

C: Is it OK to run the same straw poll again?

A: Yes. Because it is a straw poll. Technically, it’s for information gathering. We have been doing it several times.

A: I request the recorded SP.

(A recorded SP was requested.)

**Result: 101Y, 56N, 89A**

* + **SP-B:** Sherief, Coex

Do you support to amend the TGbn SFD as follows:

* + - Discussion: Unavailability Target Start Time is indicated using 9 bits with a granularity of 64us

This subfield contains a partial TSF time at which the unavailability event is expected to start

Except that this subfield is reserved (i.e., invalid and to be ignored by the recipient) if the Unavailability Duration subfield is equal to 0

* + - Unavailability Duration is indicated using 9 bits with a granularity of 64us

This subfield is set to the estimated duration, in units of 64 microseconds, of the unavailability event except that

The value 0 indicates that the STA is available

The value 511 indicates that the STA is unavailable for an indefinite duration of time

The STA shall not use the value 511 unless the unavailability duration is unknown

Confirm the availability of both APs for CSI collection.

* + - A non-AP STA that intends to transition to available state shall indicate to its associated AP that it transitions from being unavailable to being available by sending a BSRP GI3 Trigger frame with the Unavailability Duration field set to 0.
    - Discussion:

C: we have already defined in 9.2.2 that all fields, unless stated otherwise, contain unsigned integers. There are no such things as negative unsigned integers. So, we just say the subfield indicates the partial TSF time at which we would like to talk about the encoding. And, the only and ultimate value is confusing. It means that you can only contain the value of 511, or you can contain it only if the unavailable situation is unknow. What are you trying to say?

A: In order to avoid the case where one coext station happens to have an unavailable duration that is matching exactly the value 155. In that case, it should not report 511 because 511 in reserved for that other case of like an unknown duration.

C: To make it clear, it says that 511 shall not be used unless the duration is unknown.

**Result: no objection.**

* + **SP-C:** Sherief, Coex

Do you support amending the TGbn SFD as follows:

* + - TGbn defines a special Feedback Per AID TID Info field (name TBD) that carries control feedback in the Multi-STA BA frame

The control feedback (i.e., unavailability indication) is carried instead of the BlockAck Bitmap in that Feedback Per AID TID Info field

The Ack Type subfield of the Per AID TID Info field is set to 0 and the TID subfield of the Per AID TID Info field is set to a reserved value

The AID11 subfield of this Per AID TID Info field is set to a reserved TBD value if the control feedback is addressed to all STAs or to the AID11 that identifies the intended recipient STA

~~The Starting Sequence Number field of this Per AID TID Info field is reserved~~

A “Feedback Type” field (4-bit field in the “Block Ack Starting Sequence Control” field) which is set to 0 to indicate that this Per AID TID Info field is carrying CoEx unavailability information.

The rest of the “Starting Sequence Number” bits are reserved.

* + - Discussion:

C: Please remove the indication as a feedback type location from 12 to 15, because we need to further discuss this.

A: OK.

C: I am confused. We have a four bitfield and it is set to zero to indicate something. What other possible values could it have or what do other values mean?

A: Since this is within the context of Coex, we define this because it is needed for as a value zero. But we have some parallel discussion in some other topics that maybe we will need the feedback in order to report a different value.

C: Do you mean that you have four-bit field and then depending on what value, the rest of the starting sequence number might contain some extra information?

A: If the feedback type field is not zero, it is possible that the rest of the starting sequence number is not reserved.

(Due to lack of time, this SP was not conducted.)

* + **SP-D:** Jarkko

Do you support that if the SMD is part of an FT mobility domain the following applies?

* + - the single PMKSA to be used in the SMD is the PMK-R1 SA and is bound to the SMD-ME, when the non-AP MLD initially associates with the SMD ME using FT initial MD association.
    - Discussion: None.

**Result: No objection**

* Motions
  + The following motions were conducted.
  + **Motion 377 (MAC)**

Move to the TGbn SFD as follows:

* + - Unavailability Target Start Time is indicated using 9 bits with a granularity of 64us

This subfield contains a partial TSF time at which the unavailability event is expected to start

Except that this subfield is reserved (i.e., invalid and to be ignored by the recipient) if the Unavailability Duration subfield is equal to 0

* + - Unavailability Duration is indicated using 9 bits with a granularity of 64us

This subfield is set to the estimated duration, in units of 64 microseconds, of the unavailability event except that

The value 0 indicates that the STA is available

The value 511 indicates that the STA is unavailable for an indefinite duration of time

The STA shall not use the value 511 unless the unavailability duration is unknown

* + - A non-AP STA that intends to transition to available state shall indicate to its associated AP that it transitions from being unavailable to being available by sending a BSRP GI3 Trigger frame with the Unavailability Duration field set to 0.

Move: Sherief Helwa Second: Qi Wang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [*[*24/1558*](https://mentor.ieee.org/802.11/dcn/24/11-24-1558-02-00bn-in-device-coexistence-follow-up.pptx)*,* [*25/430*](https://mentor.ieee.org/802.11/dcn/25/11-25-0430-00-00bn-in-device-coexistence-signaling-details.pptx)*,* [*25/0063*](https://mentor.ieee.org/802.11/dcn/25/11-25-0063-00-00bn-indication-of-the-unavailability-information-for-idc.pptx)*]. SP result: No objection.*

* + **Motion 378 (MAC)**

Move to add to the TGbn SFD the following:

* + - If the SMD is part of an FT mobility domain the following applies

The single PMKSA to be used in the SMD is the PMK-R1 SA and is bound to the SMD-ME, when the non-AP MLD initially associates with the SMD ME using FT initial MD association.

Move: Jarkko Kneckt Second: Yanjun Sun

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference docs: [???]. SP result: No objection.*

* + **Motion 379 (Draft Creation)**

Move to instruct the TGbn Editor to create IEEE802.11bn D0.2 draft after incorporating the approved proposed draft changes as specified in all the applicable Motions from 296 to 378 (motions with numerical values).

Move: Abhishek Patil Second: Ross J. Yu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

* + **Motion:** TGbn MAC/PHY July Ad-Hoc

Approve a TGbn MAC/PHY (mixed mode) ad-hoc meeting on 23 to 25 July 2025, in TBD location, Europe for the purpose of TGbn comment resolution and consideration of document submissions

Move: Kumail Haider Second: Rubayet Shafin

* + - Discussion: None.

**Preliminary Result: 124Y, 7N, 44A**

**Result: 120Y, 7N, 43A, (passed.)**

* Teleconference/ad-hoc Plan
  + Teleconferences
    - March 17-21 (Monday-Friday) Holiday
    - March 24 (Monday) – MAC/PHY 19:00-21:00 ET
    - March 27 (Thursday) – MAC/PHY 10:00-12:00 ET
    - March 31 (Monday) – MAC/PHY 19:00-21:00 ET
    - April 03 (Thursday) – MAC/PHY 10:00-12:00 ET
    - April 07 (Monday) – MAC/PHY 19:00-21:00 ET
    - April 10 (Thursday) – MAC/PHY 10:00-12:00 ET
    - April 14 (Monday) – MAC/PHY 19:00-21:00 ET
    - April 17 (Thursday) – MAC/PHY 10:00-12:00 ET
    - April 21 (Monday) – MAC/PHY 19:00-21:00 ET
    - April 24 (Thursday) – MAC/PHY 10:00-12:00 ET
    - April 28 (Monday) – MAC/PHY 19:00-21:00 ET
    - May 01 (Thursday) – Joint\* 10:00-12:00 ET
    - May 05-09 (Monday-Friday) Holiday

\* TGbn joint session during which there can be motions, subject to WG chair approval and with 10-day advanced notice.

* + Ad-hoc Plan
    - PHY/MAC ad-hoc (hybrid mode)
    - Europe in TBD location, July 23-25, 2025
* TGbn Timeline and Status
  + PAR approved July 2023
  + First TG meeting Nov 2023
  + D0.1 Jan 2025
  + D1.0 Letter Ballot May 2025
  + D2.0 LB May 2026
  + D3.0 LB Jan 2027
  + Initial SA ballot (D4.0) May 2027
  + Final 802.11 WG approval Mar 2028
  + 802 EC approval Mar 2028
  + RevCom and SASB approval May 2028
* Goals for May 2025
  + Resolve comments from CC50
  + Complete inclusion of PDTs to TGbn draft
  + Target approving delivery of TGbn D1.0 in May F2F
* AoB: None.
* Adjourned at 18:00.

**Appendix**

* The record of the voting result for the Motion 356

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name / Affiliation** | **Yes** | **No** | **Abs.** | **Note** |
| [V] Peyush Agarwal | X |  |  |  |
| [v] Sean Coffey |  | X |  |  |
| [V] Leo Montreuil | X |  |  |  |
| [V] Jeongki Kim, Ofinno |  | X |  |  |
| [V] Hang Su Broadcom | X |  |  |  |
| [V] Brian Petry, Broadcom | X |  |  |  |
| [P] Eda Genc, Nokia | X |  |  |  |
| [V] Frank Chien-Fang Hsu, Mediatek | X |  |  |  |
| Rong Zhang | X |  |  |  |
| Nima Namvar | X |  |  |  |
| [V] Carol Ansley, Cox |  |  | X |  |
| [V]Jeff Liu, Broadcom | X |  |  |  |
| Minyoung Park | X |  |  |  |
| [V] Javier Perez-Ramirez, Ofinno |  |  | X |  |
| Ethan Zimmer |  |  | X |  |
| Kanke Wu | X |  |  |  |
| Lalit Garg | X |  |  |  |
| Pelin Salem |  |  | X |  |
| [V] Jiayi Zhang (Vincent), Ofinno |  | X |  |  |
| Jinjing Jiang | X |  |  |  |
| [V] Leonardo Lanante, Ofinno |  | X |  |  |
| Dong Han | X |  |  |  |
| [V] Siukai Mak, Broadcom | X |  |  |  |
| SK Yong | X |  |  |  |
| [V] M. Kumail Haider | X |  |  |  |
| [V] Ryuichi Hirata |  |  | X |  |
| Li Ma | X |  |  |  |
| Jatin Grover |  |  | X |  |
| Jerome Henry | X |  |  |  |
| [V] Xiaofei Wang, InterDigital |  |  | X |  |
| [PV] Mikhail Liubogoshchev |  |  | X |  |
| [V] Mahmoud Kamel |  | X |  |  |
| [V] Bin Tian | X |  |  |  |
| [V] Preston Hunt | X |  |  |  |
| [V] Ashish Shukla, Amazon |  |  | X |  |
| [V]Ravi Gidvani, Samsung | X |  |  |  |
| Alex Krebs | X |  |  |  |
| [V] Sherief Helwa, Qualcomm Technologies, Inc | X |  |  |  |
| [V] Renlong Zhou,Sanechips |  |  | X |  |
| [v] Jay Yang [ZTE] |  | X |  |  |
| [V] Dan Harkins, HPE! |  | X |  |  |
| Jarkko Kneckt | X |  |  |  |
| [V] Hank Hyeonjun Sung, WILUS |  |  | X |  |
| [V] David Boldy, Broadcom | X |  |  |  |
| [V] You-Wei Chen, Mediatek | X |  |  |  |
| [V] Hyungjin Kim, Broadcom | X |  |  |  |
| [V] Rana Abdelaal, Broadcom | X |  |  |  |
| [V] Tzu-Hsuan Chou | X |  |  |  |
| [V]Hanqing Lou, InterDigital |  |  | X |  |
| [V] Buki Adakeja, Teradyne Inc |  |  | X |  |
| [V] Charlie Pettersson, |  |  | X |  |
| [V] Alice Jialing Li Chen | X |  |  |  |
| [v] manoj raveendranath [Broadcom] | X |  |  |  |
| [V] John Wullert, Peraton Labs |  |  | X |  |
| [V] Mark RISON | X |  |  |  |
| [V] Michael Grigat, Deutsche Telekom | X |  |  |  |
| [V] Hank ChiHan Huang | X |  |  |  |
| [V] Zhenpeng Shi, Huawei | X |  |  |  |
| [V] Hui Luo, Infineon | X |  |  |  |
| [V] William Li, Spreadtrum | X |  |  |  |
| [V] Srinath Puducheri, Broadcom | X |  |  |  |
| Mohamed Abouelseoud | X |  |  |  |
| [v] Necati Canpolat, Intel | X |  |  |  |
| (V) Klaus Doppler, Nokia | X |  |  |  |
| [V] Taeyoung Ha, Samsung Electronics | X |  |  |  |
| [V] Jouni Malinen, Qualcomm | X |  |  |  |
| Gerald KERGOURLAY |  |  | X | FALSE:  Non-Voter |
| [V] Sanket Kalamkar | X |  |  |  |
| Pooria Pakrooh | X |  |  |  |
| [V] Helene Ralle |  | X |  |  |
| [V] William Carney, sony |  |  | X |  |
| Robert Yang (楊錫昌) | X |  |  |  |
| [V] Duncan Ho | X |  |  |  |
| [V] Martin Eiger, Peraton Labs |  | X |  |  |
| [V] Rakshith Rajashekar, Broadcom | X |  |  |  |
| [V] Allert van Zelst | X |  |  |  |
| [V] Wen-Di Shen, National Taiwan University |  |  | X |  |
| [V] Subrahmanyam Yanamandra, Broadcom | X |  |  |  |
| [V] George Chih-Chun Kuo | X |  |  |  |
| Yongho Seok | X |  |  |  |
| [V] Stephane Baron, | X |  |  |  |
| [V] Stephen Rodriguez |  |  | X |  |
| Reza Hedayat | X |  |  |  |
| [V] Po-Kai Huang Intel | X |  |  |  |
| [V] Chulho Chung |  |  | X |  |
| [PV] Zigui Yang, Samsung | X |  |  |  |
| Chung-Ta Ku, Mediatek | X |  |  |  |
| [V] Yelin Yoon, LGE |  |  | X |  |
| [V] Geert Awater | X |  |  |  |
| [V] Manasi Ekkundi, Samsung Electronics | X |  |  |  |
| [V] Meriam Rezk, Qualcomm Technologies | X |  |  |  |
| Jegan Manoharan |  |  | X |  |
| [V] GeonHwan Kim, LGE |  |  | X |  |
| Yan (ATG) Zhang | X |  |  |  |
| YH Tseng (曾彥雄) | X |  |  |  |
| [V] Romain GUIGNARD Canon | X |  |  |  |
| [V]Abhijit Bhattacharya, Qualcomm | X |  |  |  |
| [v] Lisa Ward - Rohde & Schwarz |  |  | X |  |
| [V] Liuming Lu, OPPO |  |  | X |  |
| [V] Cheng Chen, Intel | X |  |  |  |
| Morteza Mehrnoush | X |  |  |  |
| [V] Mrugen Deshmukh, Ofinno |  |  | X |  |
| [V] Denis Bykov, NXP | X |  |  |  |
| [V] Mahmoud Hasabelnaby, Huawei |  |  | X |  |
| Phoebe Cheng (鄭淑敏) | X |  |  |  |
| Wook Bong Lee | X |  |  |  |
| Wei-Han Chen | X |  |  |  |
| Zach Georgiev |  |  | X |  |
| Yanjun Sun | X |  |  |  |
| [V] Dmitry Akhmetov, Intel | X |  |  |  |
| [V] Daniel Verenzuela |  |  | X |  |
| Yong Liu | X |  |  |  |
| [V] Insun Jang |  |  | X |  |
| [V] Rainer Strobel, MaxLinear |  |  | X |  |
| [v]Luis Guitierrez-Broadcom | X |  |  |  |
| [V] Jinsoo Choi |  |  | X |  |
| [V] Karim Nassiri Toussi, BRCM | X |  |  |  |
| [A] Abdalla Hussein, Huawei |  |  | X |  |
| [V] Junbin Chen, TP-Link |  |  | X |  |
| [V] Rui Yang, InterDigital |  |  | X |  |
| [V] Hongwon Lee |  |  | X |  |
| [V] Subir Das [Peraton Labs] |  | X |  |  |
| [A] Shravan Kalnankar |  |  | X | FALSE:  Non-Voter |
| [V] Yang Hang, Ruijie |  | X |  |  |
| [V] Toshizo Nogami | X |  |  |  |
| [V] Qing Xia, Sony |  |  | X |  |
| [NV] Yusuke Okumoto |  |  | X | FALSE:  Non-Voter |
| [V] Alfred Asterjadhi | X |  |  |  |
| [V] Pei Zhou, TCL |  |  | X |  |
| Gaius Wee |  |  | X |  |
| [V] Zhongjiang Yan |  |  | X |  |
| [V] Kyosuke Inoue, SHARP | X |  |  |  |
| [V] Shawn(Sanghyun) Kim, WILUS Inc. |  |  | X |  |
| [V] Dave Cavalcanti | X |  |  |  |
| [V] Kiseon Ryu |  |  | X |  |
| [V] SunHee Baek, LGE |  |  | X |  |
| [V] Stephen McCann |  | X |  |  |
| [V] Yanchun Li, Huawei |  | X |  |  |
| [V] Ron Porat, Broadcom | X |  |  |  |
| [V] Eunsung Park LGE |  |  | X |  |
| [V] Karthik Srinivasa Gopalan, Samsung Electronics | X |  |  |  |
| Brian Hart |  |  | X |  |
| [V] Prabodh Varshney | X |  |  |  |
| [V] Mao Yang |  |  | X |  |
| [V] Vinko Erceg - Broadcom | X |  |  |  |
| [V] Gaurav Patwardhan, HPE |  | X |  |  |
| [V] Lin Yang | X |  |  |  |
| [V] Dibakar Das, Intel | X |  |  |  |
| [V] Yusuke Tanaka |  |  | X |  |
| Qi Wang | X |  |  |  |
| [V] Albert Bredewoud, Broadcom | X |  |  |  |
| [V] Xiangxin Gu, Spreadtrum |  |  | X |  |
| Dave Scott |  |  | X |  |
| [V] Yingqiao Quan, Spreadtrum |  |  | X |  |
| [V] Vishnu Ratnam, Samsung Electronics | X |  |  |  |
| Al Dumdei |  |  | X |  |
| [V]Kazuyuki Tota Canon |  |  | X |  |
| [V] Gaurang Naik, Qualcomm Technologies, Inc. | X |  |  |  |
| [V]Ryunosuke Sakamoto, Sharp |  |  | X |  |
| [V] Dana Ciochina-Kar Sony |  |  | X |  |
| [V] Rishabh Roy, Samsung Electronics | X |  |  |  |
| [V] Min Yan |  |  | X |  |
| [V] Shimi Shilo, Huawei |  |  | X |  |
| [V] Okan Mutgan, Nokia | X |  |  |  |
| [V] Qinglai Liu |  |  | X |  |
| [V] Thomas Derham | X |  |  |  |
| [V] Yue Qi, Samsung Electronics | X |  |  |  |
| [V]Suhwook Kim, Samsung Electronics | X |  |  |  |
| [V] Shuntaro Suzuki, Yamaha |  |  | X |  |
| James Yee | X |  |  |  |
| [V] Junghoon Suh, Huawei |  |  | X |  |
| [V] Jonathan Segev | X |  |  |  |
| [V] Dongju Cha, LGE |  |  | X |  |
| [V] Shinya MIWA | X |  |  |  |
| [V] Zhuqing Tang, Huawei |  |  | X |  |
| [V] Bo Cao, ZTE |  |  | X |  |
| [V] Tuncer Baykas, Self |  | X |  |  |
| 【nv】Yuanjian Zhang |  |  | X | FALSE:  Non-Voter |
| [V] BIAN Tong, Panasonic |  |  | X |  |
| [V] Giovanni Chisci, Qualcomm | X |  |  |  |
| [V]Yan Li,ZTE |  |  | X |  |
| 【nv】QingLiang Shou |  |  | X | FALSE:  Non-Voter |
| Ian Procyk |  |  | X |  |
| [V] Matthew Fischer | X |  |  |  |
| [V] Juan Fang, intel | X |  |  |  |
| [V] Woojin Ahn, KNUT |  |  | X |  |
| [V] Akira Kishida, NTT |  |  | X |  |
| 【nv】ZhiGang Zhang |  |  | X | FALSE:  Non-Voter |
| [V] Sameer Vermani | X |  |  |  |
| [V] Manish Kumar - NXP | X |  |  |  |
| [V] Mao Yu, Ripple |  |  | X |  |
| Blanca Wong Mosquera |  |  | X |  |
| [V] Jinho Choi, Samsung Electronics | X |  |  |  |
| [V] Bo Li |  |  | X |  |
| [V] Babor Bajko |  |  | X |  |
| [V] Xuwen Zhao, TCL |  |  | X |  |
| [V] Eugene Baik, Qualcomm | X |  |  |  |
| [V] Lili Hervieu |  |  | X |  |
| [V] Ke Zhong, Ruijie Networks |  |  | X |  |
| [V] Yusuke Asai | X |  |  |  |
| [V] Jonghoe Koo, Samsung Electronics | X |  |  |  |
| [V} Kazuto Yano |  |  | X |  |
| [V] Nehru Bhandaru | X |  |  |  |
| Qisheng Huang ZTE |  |  | X |  |
| [V] Yongsen Ma, Samsung | X |  |  |  |
| Bo Xiao ,ZTE |  |  | X |  |
| [V] Jiyang Bai, TCL |  |  | X |  |
| [V] Sigurd Schelstraete |  |  | X |  |
| [V] Pooya Monajemi, Apple | X |  |  |  |
| [V] Mikael LORGEOUX Canon | X |  |  |  |
| Chitto Ghosh | X |  |  |  |
| [V] Peshal Nayak, Samsung Electronics | X |  |  |  |
| [V] Dong Wei |  |  | X |  |
| [V] Hiroyuki Motozuka |  |  | X |  |
| [V] Youhan Kim (Qualcomm Technologies, Inc.) | X |  |  |  |
| [V] George Cherian | X |  |  |  |
| [V]HanGyu Cho\_LGE |  |  | X |  |
| [V] Salvatore Talarico, Nokia |  |  | X |  |
| [V] Jungjun Kim, Samsung Electronics | X |  |  |  |
| [V] Yue Zhao |  |  | X |  |
| [V] Mengshi Hu |  |  | X |  |
| [V] Ross Jian Yu, Huawei |  |  | X |  |
| [V] Abhishek Chaturvedi, Samsung Electronics | X |  |  |  |
| [V] Yuki Tsujimaru |  |  | X |  |
| [V] Zisheng Wang, ZTE |  |  | X |  |
| [V] Yaoshen Cui, TP-Link | X |  |  |  |
| [V] Patrice NEZOU, Canon | X |  |  |  |
| [V] Claudio da Silva, Meta |  |  | X |  |
| [V] Atsushi Shirakawa |  |  | X |  |
| [V] Ying Wang |  |  | X |  |
| [V] Serhat Erkucuk, Ofinno |  |  | X |  |
| [v] Sai [Synaptics] | X |  |  |  |
| [V] Srinivas Kandala | X |  |  |  |
| [V] OsamaAboul-Magd[Huawei] |  | X |  |  |
| [V] Antonio de la Oliva, InterDigital |  |  | X |  |
| Yunbo Li |  |  | X |  |
| Wilson Tsao | X |  |  |  |
| [V] Timothy Jeffries - Futurewei |  | X |  |  |
| [V] Bilal Sadiq, Samsung Electronics |  |  | X |  |
| [V] Azin Neishaboori, GM |  |  | X |  |
| Binita Gupta |  |  | X |  |
| [V] Naveen Kakani | X |  |  |  |

* The record of the SP7

|  |  |  |  |
| --- | --- | --- | --- |
| **Participant Name** | Yes | No | Abs. |
| [V] Stephen Rodriguez | Cisco |  |  | X |
| [PV] Jiyang Bai, TCL |  |  | X |
| [V] Leo Montreuil |  | X |  |
| [V] Mike Montemurro | X |  |  |
| Nima Namvar | X |  |  |
| Ugo Campiglio |  | X |  |
| [v] Sean Coffey |  | X |  |
| Jarkko Kneckt | X |  |  |
| [V] Marcos Martinez |  |  | X |
| [V] Nehru Bhandaru | X |  |  |
| Jinjing Jiang |  |  | X |
| [PV] Donald Eastlake |  |  | X |
| [V] Jeongki Kim, Ofinno |  | X |  |
| Veerendra Boodannavar | X |  |  |
| Rong Zhang |  | X |  |
| Minyoung Park |  | X |  |
| Pelin Salem |  | X |  |
| Qi Wang |  | X |  |
| [V] Youhan Kim (Qualcomm Technologies, Inc.) |  | X |  |
| [V] Hang Su Broadcom |  | X |  |
| [V] Wen-Di Shen, National Taiwan University |  |  | X |
| Kanke Wu |  | X |  |
| Mohamed Abouelseoud |  | X |  |
| Yanjun Sun |  | X |  |
| [V] Robert Sosack Molex | X |  |  |
| [PV] Mikhail Liubogoshchev | X |  |  |
| Lalit Garg |  | X |  |
| [V] Alice Jialing Li Chen |  | X |  |
| Ethan Zimmer |  | X |  |
| [V] Bo Cao, ZTE |  |  | X |
| [V] Ross Jian Yu, Huawei | X |  |  |
| Tianyu Wu |  | X |  |
| [V] Ryuichi Hirata | X |  |  |
| [V] Stephen McCann | X |  |  |
| [V] Mrugen Deshmukh, Ofinno |  | X |  |
| [V] John Juhyung Son, WILUS |  |  | X |
| [V]Jeff Liu, Broadcom |  | X |  |
| [V] Leonardo Lanante, Ofinno |  | X |  |
| [V] Hyungjin Kim, Broadcom |  | X |  |
| [V] Wei Lin, Xiaomi | X |  |  |
| [V] Liuming Lu, OPPO | X |  |  |
| [V] Seongho Byeon, Samsung Electronics | X |  |  |
| [V] Nan Cheng, Xidian University | X |  |  |
| [V] Lei Wang, Futurewei/Huawei | X |  |  |
| [V] David Boldy, Broadcom |  | X |  |
| Avner Epstein |  |  | X |
| [V]Hanqing Lou, InterDigital |  | X |  |
| [V]Shuling (Julia) Feng, Mediatek |  | X |  |
| Li Ma |  |  | X |
| [V]Ryunosuke Sakamoto, Sharp | X |  |  |
| [V] Xiangxin Gu, Spreadtrum |  |  | X |
| Sovan Das | X |  |  |
| Maulik Vaidya |  |  | X |
| [V] Mahmoud Kamel |  | X |  |
| [v] Jay Yang [ZTE] | X |  |  |
| Anuj Batra |  | X |  |
| [V] Timothy Jeffries - Futurewei |  |  | X |
| [V] Xiaofei Wang, InterDigital | X |  |  |
| [V] Yaoshen Cui, TP-Link |  |  | X |
| [V] Ke Zhong, Ruijie Networks | X |  |  |
| [V] Clark Carty | X |  |  |
| [PV] Menanor Samuel Kwamena, Hanbat National University | X |  |  |
| [V] You-Wei Chen, Mediatek |  |  | X |
| [V] Chaoming Luo | X |  |  |
| [PV]Zhongyi Wang, ZTE |  |  | X |
| [v]Luis Gutierrez, Broadcom |  | X |  |
| [V] Kyosuke Inoue, SHARP |  |  | X |
| [V] Tzu-Hsuan Chou |  | X |  |
| [V] Hank Hyeonjun Sung, WILUS |  |  | X |
| [NV] Yusuke Okumoto |  |  | X |
| James Yee |  | X |  |
| [V] Allert van Zelst |  |  | X |
| Al Dumdei |  |  | X |
| Robert Yang (楊錫昌) |  |  | X |
| [V]Chuanfeng He, OPPO | X |  |  |
| [V]Kazuyuki Tota Canon |  |  | X |
| [PV]Yi Jiang, ZTE |  |  | X |
| [V] Rainer Strobel, MaxLinear | X |  |  |
| [V] Atsushi Shirakawa |  |  | X |
| [V] Srinath Puducheri, Broadcom |  | X |  |
| [V] Mark RISON |  |  | X |
| Daniel Borges | X |  |  |
| [V] Duncan Ho |  |  | X |
| [V] Ian Bajaj, Huawei | X |  |  |
| [V] Manasi Ekkundi, Samsung Electronics |  |  | X |
| [V] Wayne ChengYing Wu, Mediatek |  | X |  |
| [V] Eugene Baik, Qualcomm |  |  | X |
| Gaius Wee | X |  |  |
| [V] Yoshio Urabe | X |  |  |
| [V] John Wullert, Peraton Labs |  |  | X |
| [V] Chenchen Liu | X |  |  |
| [V] Stephane Baron, | X |  |  |
| [V] GeonHwan Kim, LGE | X |  |  |
| [V] William Li, Spreadtrum | X |  |  |
| [V] Yelin Yoon, LGE | X |  |  |
| [V] Rui Yang, InterDigital |  | X |  |
| [V] Mahmoud Hasabelnaby, Huawei | X |  |  |
| [V] Giovanni Chisci, Qualcomm |  | X |  |
| [V] Martin Eiger, Peraton Labs |  |  | X |
| Gerald KERGOURLAY |  |  | X |
| [V] Zhenpeng Shi, Huawei | X |  |  |
| [NV] Tristan HALNA du FRETAY |  |  | X |
| [V] Hank ChiHan Huang |  | X |  |
| [V] Insun Jang | X |  |  |
| [V] Akira Kishida, NTT |  |  | X |
| [V]Qisheng Huang, ZTE |  |  | X |
| [V] Guogang Huang | X |  |  |
| [V] Gaurav Patwardhan, HPE | X |  |  |
| [V] Gary Anwyl |  |  | X |
| Bo Xiao ,ZTE |  |  | X |
| [PV] Insik Jung, LGE | X |  |  |
| [v] Necati Canpolat, Intel |  |  | X |
| [A] Shravan |  |  | X |
| Binita Gupta |  | X |  |
| [V] Junghoon Suh, Huawei | X |  |  |
| [V] Inaki Val, MaxLinear |  |  | X |
| [V] Ying Wang | X |  |  |
| 2338 216 7833 | X |  |  |
| [V] Zhongjiang Yan | X |  |  |
| Yan (ATG) Zhang |  | X |  |
| [V] Oded Redlich | X |  |  |
| [V] Jonghoe Koo, Samsung Electronics |  |  | X |
| [V] Yusuke Asai |  |  | X |
| Yaodong Zhang ,ZTE |  |  | X |
| [V] Rani Keren - Huawei | X |  |  |
| [V] Shuyu Shi, TP-Link |  | X |  |
| [V] George Chih-Chun Kuo |  | X |  |
| [V] OsamaAboul-Magd[Huawei] | X |  |  |
| [V] Mengshi Hu | X |  |  |
| [V] Romain GUIGNARD Canon |  |  | X |
| [V] Li-Hsiang Sun |  |  | X |
| [V] Min Yan | X |  |  |
| [V] Hongwon Lee | X |  |  |
| [V] Yang Hang, Ruijie |  |  | X |
| [V] Xuwen Zhao, TCL |  |  | X |
| [V] Paul Cheng, MediaTek Inc |  | X |  |
| [V] Li Quan , ZTE |  |  | X |
| (V) Klaus Doppler, Nokia |  |  | X |
| [V] Vinko Erceg - Broadcom |  | X |  |
| [V] SunHee Baek, LGE | X |  |  |
| [V] Jason Yuchen Guo | X |  |  |
| [V] Dongguk Lim | X |  |  |
| YH Tseng (曾彥雄) |  | X |  |
| Wook Bong Lee |  | X |  |
| [V] Hongyuan Zhang, NXP |  |  | X |
| [V] Zheng Guo,NXP |  |  | X |
| [V] Yingqiao Quan, Spreadtrum | X |  |  |
| [V] Genadiy Tsodik | X |  |  |
| Wei-Han Chen |  |  | X |
| [V] Yan Xin, Huawei | X |  |  |
| [V] Denis Bykov, NXP |  |  | X |
| [V] Zisheng Wang, ZTE |  |  | X |
| [V] Yue Zhao | X |  |  |
| [V] Vishnu Ratnam, Samsung Electronics |  |  | X |
| [V]HanGyu Cho\_LGE | X |  |  |
| [V] Sanket Kalamkar |  | X |  |
| [V] Qinglai Liu | X |  |  |
| [V] Meriam Rezk, Qualcomm Technologies |  | X |  |
| [V] Jing Guo, NXP |  |  | X |
| [V] Sixian Luo, Sharp |  |  | X |
| [v] Steven.Qi Wang | X |  |  |
| Phoebe Cheng (鄭淑敏) |  |  | X |
| Brian Hart |  | X |  |
| [V] Helene Ralle | X |  |  |
| [V]Suhwook Kim, Samsung Electronics | X |  |  |
| [V] Prabodh Varshney | X |  |  |
| [V] Daniel Verenzuela | X |  |  |
| [V] Yongsen Ma, Samsung |  |  | X |
| Yunbo Li | X |  |  |
| [V] Ahmed Mohamed, NXP |  |  | X |
| [V] Ming Gan | X |  |  |
| [V] Ron Porat, Broadcom | X |  |  |
| [V] Dibakar Das, Intel |  |  | X |
| [A] Abdalla Hussein, Huawei | X |  |  |
| [V] Jinsoo Choi, LGE | X |  |  |
| [V] Abhishek Patil |  | X |  |
| [V] Kosuke Aio, Sony | X |  |  |
| [V] Junbin Chen, TP-Link | X |  |  |
| [V] Azin Neishaboori, GM | X |  |  |
| [V] Juan Fang, intel |  |  | X |
| [V] Shuntaro Suzuki, Yamaha |  |  | X |
| [V] Dmitry Akhmetov, Intel | X |  |  |
| [V] Eunsung Park LGE | X |  |  |
| [V] Mao Yang | X |  |  |
| [V] Chulho Chung |  |  | X |
| [V] Pei Zhou, TCL | X |  |  |
| [V] Subir Das [Peraton Labs] |  |  | X |
| [V] Rubayet Shafin, Samsung Electronics | X |  |  |
| [V] Ju Yan Pan, Huawei | X |  |  |
| [V] Geert Awater |  | X |  |
| [V} Kazuto Yano |  |  | X |
| [V] Boon Loong Ng, Samsung Electronics |  |  | X |
| [V] Myeongjin Kim, Samsung | X |  |  |
| [V] Patrice NEZOU, Canon |  |  | X |
| [V] Abhishek Chaturvedi, Samsung Electronics |  |  | X |
| [V] Yanchun Li, Huawei | X |  |  |
| [V] Hiroyuki Motozuka | X |  |  |
| [V] Jinho Choi, Samsung Electronics |  |  | X |
| [V] Taeyoung Ha, Samsung Electronics |  |  | X |
| [V] Siaud Isabelle Orange | X |  |  |
| [V] Dongju Cha, LGE | X |  |  |
| [V] Bilal Sadiq, Samsung Electronics |  |  | X |
| [V] Gaurang Naik, Qualcomm Technologies, Inc. |  | X |  |
| [V] Bo Li | X |  |  |
| Morteza Mehrnoush |  | X |  |
| [V] Shimi Shilo, Huawei | X |  |  |
| [V] Salvatore Talarico, Nokia |  | X |  |
| [V] Serhat Erkucuk, Ofinno |  |  | X |
| [V] Ryota Yamada |  |  | X |
| [V] Shinya MIWA | X |  |  |
| Pooya Monajemi |  | X |  |
| [PV]Jun Minotani | X |  |  |
| [V] Shuang Fan, Sanechips | X |  |  |
| [PV] Liquan Yuan, ZTE |  |  | X |
| [V] Mao Yu, Ripple | X |  |  |
| [PV] Huang Chun, ZTE |  |  | X |
| [V] Dong Wei | X |  |  |
| [V] Yuki Tsujimaru |  |  | X |
| [V] Jiayi Zhang (Vincent), Ofinno |  |  | X |
| [V] Peshal Nayak, Samsung Electronics |  |  | X |
| [V] Yusuke Tanaka | X |  |  |
| Qisheng Huang ZTE |  |  | X |
| [V] Sindhu Verma, Broadcom |  | X |  |
| Blanca Wong Mosquera |  | X |  |
| Lyutianyang Zhang | X |  |  |
| [V] Aiguo Yan, Samsung |  |  | X |
| [V] Kiseon Ryu |  |  | X |
| Javier Perez-Ramirez |  |  | X |
| Ian Procyk |  |  | X |
| [V] Sigurd Schelstraete |  |  | X |
| Chung-Ta Ku, Mediatek |  | X |  |
| [V] Lan Peng Huawei | X |  |  |
| [V] Siukai Mak, Broadcom |  | X |  |
| [V] BIAN Tong, Panasonic | X |  |  |
| Anonymous |  |  | X |

* The record of the SP8

|  |  |  |  |
| --- | --- | --- | --- |
| **Participant Name** | **Yes** | **No** | **Abs.** |
| Federico Lovison | X |  |  |
| [V] Stephen Rodriguez | Cisco | X |  |  |
| [V] Yurong Qian, ZTE | X |  |  |
| [PV] Jiyang Bai, TCL |  |  | X |
| (NV) Yuta Mizuno, Sharp |  | X |  |
| [V] Leo Montreuil | X |  |  |
| [V] Mike Montemurro |  | X |  |
| Nima Namvar | X |  |  |
| Ugo Campiglio | X |  |  |
| Dong Han | X |  |  |
| Jarkko Kneckt | X |  |  |
| [V] Marcos Martinez |  | X |  |
| [V] Nehru Bhandaru | X |  |  |
| Jinjing Jiang | X |  |  |
| [PV] Donald Eastlake |  |  | X |
| [V] Jeongki Kim, Ofinno |  | X |  |
| Aditi Singh | X |  |  |
| Veerendra Boodannavar | X |  |  |
| Rong Zhang | X |  |  |
| Minyoung Park | X |  |  |
| Pelin Salem | X |  |  |
| Qi Wang | X |  |  |
| [V] Yun Li, ZTE | X |  |  |
| [V] Youhan Kim (Qualcomm Technologies, Inc.) | X |  |  |
| [V] Hang Su Broadcom | X |  |  |
| [V] Wen-Di Shen, National Taiwan University | X |  |  |
| Kanke Wu | X |  |  |
| Mohamed Abouelseoud | X |  |  |
| Yanjun Sun | X |  |  |
| [V] Robert Sosack Molex |  |  | X |
| [PV] Mikhail Liubogoshchev |  |  | X |
| Lalit Garg | X |  |  |
| [V] Alice Jialing Li Chen | X |  |  |
| Ethan Zimmer | X |  |  |
| [V] Bo Cao, ZTE | X |  |  |
| [V] Shubhodeep Adhikari Broadcom | X |  |  |
| [V] Ross Jian Yu, Huawei |  | X |  |
| Tianyu Wu | X |  |  |
| [V] Ryuichi Hirata |  | X |  |
| [V] Stephen McCann |  | X |  |
| [V] Thomas Derham | X |  |  |
| [V] Mrugen Deshmukh, Ofinno |  | X |  |
| [V] John Juhyung Son, WILUS |  | X |  |
| [V] Sangho Seo, Broadcom | X |  |  |
| [V]Jeff Liu, Broadcom | X |  |  |
| [V] Leonardo Lanante, Ofinno |  | X |  |
| [V] Hyungjin Kim, Broadcom | X |  |  |
| [V] Renlong Zhou,Sanechips | X |  |  |
| [V] Sherief Helwa, Qualcomm Technologies, Inc | X |  |  |
| [V] Liuming Lu, OPPO |  | X |  |
| [V] Seongho Byeon, Samsung Electronics |  |  | X |
| [V] Nan Cheng, Xidian University |  | X |  |
| [V] Lei Wang, Futurewei/Huawei |  | X |  |
| [V] David Boldy, Broadcom | X |  |  |
| Avner Epstein |  | X |  |
| [V]Hanqing Lou, InterDigital |  | X |  |
| [V]Shuling (Julia) Feng, Mediatek |  | X |  |
| Li Ma |  |  | X |
| [V]Ryunosuke Sakamoto, Sharp |  |  | X |
| [V] Xiangxin Gu, Spreadtrum |  | X |  |
| Sovan Das | X |  |  |
| [V] Dana Ciochina-Kar Sony | X |  |  |
| Maulik Vaidya |  |  | X |
| [V] Mahmoud Kamel |  | X |  |
| [v] Jay Yang [ZTE] | X |  |  |
| [A]Ding Qian, TP-Link |  | X |  |
| Anuj Batra | X |  |  |
| [V] Timothy Jeffries - Futurewei | X |  |  |
| [V] VK Jones - Qualcomm Inc | X |  |  |
| [V] Xiaofei Wang, InterDigital |  | X |  |
| [V] Yaoshen Cui, TP-Link | X |  |  |
| [V] Ke Zhong, Ruijie Networks |  |  | X |
| [V] Clark Carty | X |  |  |
| [PV] Menanor Samuel Kwamena, Hanbat National University |  |  | X |
| [V] You-Wei Chen, Mediatek |  |  | X |
| [V] Chaoming Luo |  | X |  |
| [PV]Zhongyi Wang, ZTE | X |  |  |
| [v]Luis Gutierrez, Broadcom | X |  |  |
| [V] Kyosuke Inoue, SHARP |  |  | X |
| [V] Tzu-Hsuan Chou | X |  |  |
| [V] Hank Hyeonjun Sung, WILUS |  |  | X |
| [NV] Yusuke Okumoto |  |  | X |
| James Yee | X |  |  |
| [V] Allert van Zelst | X |  |  |
| Robert Yang (楊錫昌) |  |  | X |
| Chan Andy |  |  | X |
| [V]Kazuyuki Tota Canon |  |  | X |
| [PV]Yi Jiang, ZTE | X |  |  |
| [V] Rainer Strobel, MaxLinear |  | X |  |
| [V] Atsushi Shirakawa |  | X |  |
| [V] Mark RISON |  |  | X |
| Daniel Borges | X |  |  |
| [V] Duncan Ho | X |  |  |
| [V] Ian Bajaj, Huawei |  | X |  |
| [V] Manasi Ekkundi, Samsung Electronics | X |  |  |
| [V] Wayne ChengYing Wu, Mediatek |  | X |  |
| 【nv】QingLiang Shou | X |  |  |
| [V] Eugene Baik, Qualcomm | X |  |  |
| Gaius Wee |  |  | X |
| [V] Yoshio Urabe |  | X |  |
| [V] John Wullert, Peraton Labs |  | X |  |
| [V] Chenchen Liu |  | X |  |
| [V] Bin Tian | X |  |  |
| [V] Stephane Baron, |  |  | X |
| [V] GeonHwan Kim, LGE | X |  |  |
| [V] William Li, Spreadtrum |  | X |  |
| [V] Yelin Yoon, LGE | X |  |  |
| [V] Rui Yang, InterDigital |  | X |  |
| [V] Mahmoud Hasabelnaby, Huawei |  | X |  |
| [V] Giovanni Chisci, Qualcomm | X |  |  |
| [V] Martin Eiger, Peraton Labs |  |  | X |
| Gerald KERGOURLAY |  |  | X |
| [V] Zhenpeng Shi, Huawei |  | X |  |
| [NV] Tristan HALNA du FRETAY |  |  | X |
| [V] Hank ChiHan Huang |  |  | X |
| [V] Insun Jang | X |  |  |
| [V] Akira Kishida, NTT |  | X |  |
| [V]Qisheng Huang, ZTE | X |  |  |
| [V] Guogang Huang |  | X |  |
| [V] Xiayu Zheng, NXP |  |  | X |
| [V] Qingwei Fu, TP-Link |  |  | X |
| [V] Gaurav Patwardhan, HPE |  |  | X |
| [V] Xilin Cheng, NXP |  | X |  |
| [V] Gary Anwyl |  |  | X |
| Bo Xiao ,ZTE | X |  |  |
| [PV] Insik Jung, LGE | X |  |  |
| [v] Necati Canpolat, Intel | X |  |  |
| [A] Shravan |  | X |  |
| Binita Gupta | X |  |  |
| [V] Junghoon Suh, Huawei |  | X |  |
| [V] Inaki Val, MaxLinear |  | X |  |
| [V] Ying Wang |  | X |  |
| 2338 216 7833 |  | X |  |
| [V] Zhongjiang Yan |  | X |  |
| Yan (ATG) Zhang | X |  |  |
| [V] Oded Redlich |  | X |  |
| [V] Jonghoe Koo, Samsung Electronics |  |  | X |
| [V] Yusuke Asai |  |  | X |
| Yaodong Zhang ,ZTE | X |  |  |
| [V] Rani Keren - Huawei |  | X |  |
| [V] Shuyu Shi, TP-Link | X |  |  |
| [V] OsamaAboul-Magd[Huawei] |  | X |  |
| [V] Mengshi Hu |  | X |  |
| [V] Romain GUIGNARD Canon |  |  | X |
| [V] Min Yan |  | X |  |
| [V] Hongwon Lee | X |  |  |
| [V] Yang Hang, Ruijie |  | X |  |
| [V] Xuwen Zhao, TCL |  |  | X |
| [V] Paul Cheng, MediaTek Inc |  | X |  |
| [V] Li Quan , ZTE | X |  |  |
| (V) Klaus Doppler, Nokia | X |  |  |
| [V] Vinko Erceg - Broadcom | X |  |  |
| [V] SunHee Baek, LGE | X |  |  |
| [V] Jason Yuchen Guo |  | X |  |
| [V] Dongguk Lim | X |  |  |
| [V] Okan Mutgan, Nokia |  |  | X |
| [V] Ronny Yongho Kim, KNUT |  | X |  |
| 【nv】ZhiGang Zhang | X |  |  |
| YH Tseng (曾彥雄) |  |  | X |
| Wook Bong Lee | X |  |  |
| [V] Hongyuan Zhang, NXP |  | X |  |
| [V] Zheng Guo,NXP |  | X |  |
| [V] Yingqiao Quan, Spreadtrum |  | X |  |
| [V] Genadiy Tsodik |  | X |  |
| Wei-Han Chen |  |  | X |
| [V] Yan Xin, Huawei |  | X |  |
| [V] Denis Bykov, NXP |  | X |  |
| [V] Zisheng Wang, ZTE | X |  |  |
| [V] Yue Zhao |  | X |  |
| [V]HanGyu Cho\_LGE | X |  |  |
| [V] Sanket Kalamkar | X |  |  |
| [V] Qinglai Liu |  |  | X |
| [V] Meriam Rezk, Qualcomm Technologies | X |  |  |
| [V] Jing Guo, NXP |  | X |  |
| [V] Sixian Luo, Sharp |  |  | X |
| [v] Steven.Qi Wang |  | X |  |
| Phoebe Cheng (鄭淑敏) |  |  | X |
| Brian Hart | X |  |  |
| [V] Helene Ralle |  |  | X |
| [V]Suhwook Kim, Samsung Electronics | X |  |  |
| [V] Prabodh Varshney |  |  | X |
| [V] Daniel Verenzuela |  |  | X |
| [V] Yongsen Ma, Samsung |  | X |  |
| Yunbo Li |  | X |  |
| [V] Ahmed Mohamed, NXP |  | X |  |
| [V] Ming Gan |  | X |  |
| [V] Matthew Fischer | X |  |  |
| [V] Dave Cavalcanti | X |  |  |
| [V] Lei Huang, Huawei |  | X |  |
| [V] Ron Porat, Broadcom | X |  |  |
| [V] Dibakar Das, Intel | X |  |  |
| [V] Ning Gao |  | X |  |
| [A] Abdalla Hussein, Huawei |  | X |  |
| [V] Jinsoo Choi, LGE | X |  |  |
| [V] Abhishek Patil | X |  |  |
| [V] Kosuke Aio, Sony |  | X |  |
| [V] Junbin Chen, TP-Link |  |  | X |
| [V] Azin Neishaboori, GM | X |  |  |
| [V] Juan Fang, intel | X |  |  |
| [V] Shuntaro Suzuki, Yamaha |  |  | X |
| [V] Dmitry Akhmetov, Intel | X |  |  |
| [v] Solomon Trainin, Wiliot |  |  | X |
| 【nv】Yuanjian Zhang | X |  |  |
| [V] Cheng Chen, Intel | X |  |  |
| [V] Eunsung Park LGE | X |  |  |
| [V] Mao Yang |  | X |  |
| [V] Pei Zhou, TCL |  | X |  |
| [V] Subir Das [Peraton Labs] |  |  | X |
| [V] Kapil Gulati |  | X |  |
| [V] Ju Yan Pan, Huawei |  | X |  |
| [V] Geert Awater | X |  |  |
| [V} Kazuto Yano |  |  | X |
| Yinan Qi |  | X |  |
| [V] Myeongjin Kim, Samsung |  |  | X |
| [V] Karthik Srinivasa Gopalan, Samsung Electronics |  |  | X |
| [V] Patrice NEZOU, Canon |  |  | X |
| [V] Abhishek Chaturvedi, Samsung Electronics |  |  | X |
| [V] Yanchun Li, Huawei |  | X |  |
| [V] Hiroyuki Motozuka |  |  | X |
| [V] Taeyoung Ha, Samsung Electronics | X |  |  |
| [V] Dongju Cha, LGE | X |  |  |
| [V] Gaurang Naik, Qualcomm Technologies, Inc. | X |  |  |
| [V] Bo Li |  | X |  |
| Morteza Mehrnoush | X |  |  |
| [V] Shimi Shilo, Huawei |  | X |  |
| [V] Salvatore Talarico, Nokia |  |  | X |
| [V] Serhat Erkucuk, Ofinno |  | X |  |
| [V] Ryota Yamada |  |  | X |
| [V] Shinya MIWA |  |  | X |
| Pooya Monajemi | X |  |  |
| [PV]Jun Minotani |  | X |  |
| [V] Shuang Fan, Sanechips | X |  |  |
| [PV] Liquan Yuan, ZTE | X |  |  |
| [PV] Huang Chun, ZTE | X |  |  |
| [V] Toshizo Nogami | X |  |  |
| [V] Dong Wei |  | X |  |
| [V] Yuki Tsujimaru |  |  | X |
| [V] Yusuke Tanaka |  | X |  |
| [V] Sindhu Verma, Broadcom | X |  |  |
| Lyutianyang Zhang |  | X |  |
| [V] Aiguo Yan, Samsung |  |  | X |
| Javier Perez-Ramirez |  | X |  |
| Ian Procyk | X |  |  |
| [V] Sigurd Schelstraete |  | X |  |
| Chung-Ta Ku, Mediatek |  |  | X |
| [V] Lan Peng Huawei |  | X |  |
| [V] Siukai Mak, Broadcom | X |  |  |
| [V] BIAN Tong, Panasonic | X |  |  |
| gaborB |  | X |  |
| Javier Contreras | X |  |  |
| [P] Eda Genc, Nokia |  |  | X |
| [V] Naveen Kakani | X |  |  |
| [V] Jerome Henry |  | X |  |
| Yong Liu | X |  |  |
| Chitto Ghosh | X |  |  |
| ViceChair 802-11 | X |  |  |
| Chunyu Hu |  | X |  |
| [V] Preston Hunt | X |  |  |
| Dror Regev [V] |  | X |  |
| [V] Dignus-Jan Moelker, Broadcom | X |  |  |
| [V] Jianhan Liu, Mediatek |  | X |  |
| [V] Qing Xia, Sony |  |  | X |
| weijie-OPPO |  | X |  |
| [V] Bin Qian, Huawei |  | X |  |
| [V] William Carney, sony | X |  |  |
| [V]Yan Li,ZTE | X |  |  |
| [V] Mikael LORGEOUX Canon |  |  | X |
| [V] Jaheon Gu, Samsung Electronics | X |  |  |
| Zach Georgiev | X |  |  |
| Fatemeh Fazel [Intel] | X |  |  |
| [V] Yue Qi, Samsung Electronics |  |  | X |
| [PV] Zigui Yang, Samsung |  |  | X |
| [V] Bo Sun, Sanechips | X |  |  |
| Dave Scott | X |  |  |
| [V] Kaikai Huang, Nokia | X |  |  |
| [V] Zhuqing Tang, Huawei |  | X |  |
| [V] George Cherian | X |  |  |
| [V] Zhenguo Du |  | X |  |
| [V] Karim Nassiri Toussi, BRCM | X |  |  |
| [V] Albert Bredewoud, Broadcom | X |  |  |
| [A]Huixuan Zhou, OPPO |  | X |  |
| Anonymous |  |  | X |
| Anonymous |  |  | X |
| Anonymous |  | X |  |
| Anonymous |  | X |  |

* The record of the SP14

|  |  |  |  |
| --- | --- | --- | --- |
| **Participant Name** | **Yes** | **No** | **Abs.** |
| Federico Lovison |  | X |  |
| [V] Stephen Rodriguez | Cisco |  | X |  |
| [PV] Jiyang Bai, TCL | X |  |  |
| (NV) Yuta Mizuno, Sharp | X |  |  |
| [V] Leo Montreuil |  | X |  |
| [V] Mike Montemurro | X |  |  |
| Ugo Campiglio |  |  | X |
| Dong Han |  | X |  |
| [v] Sean Coffey |  | X |  |
| [V] Marcos Martinez |  |  | X |
| [V] Nehru Bhandaru | X |  |  |
| Jinjing Jiang |  | X |  |
| [PV] Donald Eastlake |  |  | X |
| [V] Jeongki Kim, Ofinno |  | X |  |
| Aditi Singh |  |  | X |
| Rong Zhang |  | X |  |
| Minyoung Park |  | X |  |
| Pelin Salem |  | X |  |
| Qi Wang |  | X |  |
| [V] Youhan Kim (Qualcomm Technologies, Inc.) |  | X |  |
| [V] Wen-Di Shen, National Taiwan University | X |  |  |
| Kanke Wu |  | X |  |
| Mohamed Abouelseoud |  | X |  |
| Yanjun Sun |  | X |  |
| [V] Robert Sosack Molex | X |  |  |
| [PV] Mikhail Liubogoshchev |  | X |  |
| Lalit Garg |  | X |  |
| [V] Alice Jialing Li Chen |  | X |  |
| Ethan Zimmer |  |  | X |
| [V] Bo Cao, ZTE |  |  | X |
| [V] Ross Jian Yu, Huawei | X |  |  |
| Tianyu Wu |  | X |  |
| [V] Ryuichi Hirata | X |  |  |
| [V] Stephen McCann |  | X |  |
| [V] Mrugen Deshmukh, Ofinno |  | X |  |
| [V] John Juhyung Son, WILUS |  |  | X |
| [V]Jeff Liu, Broadcom |  | X |  |
| [V] Leonardo Lanante, Ofinno |  | X |  |
| [V] Hyungjin Kim, Broadcom |  | X |  |
| [V] Renlong Zhou,Sanechips |  |  | X |
| [V] Liuming Lu, OPPO | X |  |  |
| [V] Seongho Byeon, Samsung Electronics |  |  | X |
| [V] Nan Cheng, Xidian University |  | X |  |
| [V] Lei Wang, Futurewei/Huawei |  |  | X |
| [V] David Boldy, Broadcom |  | X |  |
| Avner Epstein |  |  | X |
| [V]Shuling (Julia) Feng, Mediatek |  | X |  |
| [V]Ryunosuke Sakamoto, Sharp | X |  |  |
| [V] Xiangxin Gu, Spreadtrum |  | X |  |
| [V] Dana Ciochina-Kar Sony | X |  |  |
| Maulik Vaidya |  | X |  |
| [V] Mahmoud Kamel |  | X |  |
| [v] Jay Yang [ZTE] | X |  |  |
| Anuj Batra |  | X |  |
| [V] Timothy Jeffries - Futurewei |  |  | X |
| [V] Xiaofei Wang, InterDigital | X |  |  |
| [V] Yaoshen Cui, TP-Link | X |  |  |
| [V] Ke Zhong, Ruijie Networks |  |  | X |
| [PV] Menanor Samuel Kwamena, Hanbat National University |  |  | X |
| [V] You-Wei Chen, Mediatek |  | X |  |
| [V] Chaoming Luo |  | X |  |
| [PV]Zhongyi Wang, ZTE |  |  | X |
| [v]Luis Gutierrez, Broadcom |  | X |  |
| [V] Kyosuke Inoue, SHARP |  |  | X |
| [V] Tzu-Hsuan Chou |  | X |  |
| [V] Hank Hyeonjun Sung, WILUS |  |  | X |
| [NV] Yusuke Okumoto |  |  | X |
| James Yee |  | X |  |
| Al Dumdei |  |  | X |
| [V]Chuanfeng He, OPPO |  |  | X |
| [PV]Yi Jiang, ZTE |  |  | X |
| [V] Rainer Strobel, MaxLinear |  |  | X |
| [V] Atsushi Shirakawa | X |  |  |
| [V] Srinath Puducheri, Broadcom |  | X |  |
| [V] Mark RISON |  |  | X |
| Daniel Borges |  | X |  |
| [V] Duncan Ho |  | X |  |
| [V] Yonggang Fang MediaTek |  | X |  |
| [V] Manasi Ekkundi, Samsung Electronics |  |  | X |
| [V] Wayne ChengYing Wu, Mediatek |  | X |  |
| 【nv】QingLiang Shou |  |  | X |
| [V] Eugene Baik, Qualcomm |  | X |  |
| Gaius Wee |  |  | X |
| [V] Yoshio Urabe | X |  |  |
| [V] John Wullert, Peraton Labs |  |  | X |
| [V] Chenchen Liu |  | X |  |
| [V] Stephane Baron, |  |  | X |
| [V] GeonHwan Kim, LGE | X |  |  |
| [V] William Li, Spreadtrum | X |  |  |
| [V] Yelin Yoon, LGE | X |  |  |
| [V] Mahmoud Hasabelnaby, Huawei | X |  |  |
| [V] Giovanni Chisci, Qualcomm |  | X |  |
| [V] Martin Eiger, Peraton Labs |  |  | X |
| [V] Walaa SAHYOUN - Canon |  |  | X |
| Gerald KERGOURLAY |  |  | X |
| [V] Zhenpeng Shi, Huawei | X |  |  |
| [NV] Tristan HALNA du FRETAY |  |  | X |
| [V] Hank ChiHan Huang |  | X |  |
| [V] Insun Jang | X |  |  |
| [V] Akira Kishida, NTT | X |  |  |
| [V]Qisheng Huang, ZTE |  |  | X |
| [V] Guogang Huang | X |  |  |
| Anuj Dharap |  | X |  |
| [V] Xiayu Zheng, NXP |  | X |  |
| [V] Qingwei Fu, TP-Link |  |  | X |
| [V] Gaurav Patwardhan, HPE |  |  | X |
| Bo Xiao ,ZTE |  |  | X |
| [PV] Insik Jung, LGE | X |  |  |
| [A] Shravan | X |  |  |
| Binita Gupta |  | X |  |
| [V] Junghoon Suh, Huawei |  |  | X |
| [V] Ying Wang | X |  |  |
| 2338 216 7833 | X |  |  |
| [V] Zhongjiang Yan |  | X |  |
| Yan (ATG) Zhang |  | X |  |
| [V] Oded Redlich | X |  |  |
| [V] Jonghoe Koo, Samsung Electronics |  |  | X |
| [V] Yusuke Asai | X |  |  |
| Yaodong Zhang ,ZTE |  |  | X |
| [V] Rani Keren - Huawei | X |  |  |
| [V] Shuyu Shi, TP-Link | X |  |  |
| [V] OsamaAboul-Magd[Huawei] |  |  | X |
| [V] Mengshi Hu |  |  | X |
| [V] Romain GUIGNARD Canon |  |  | X |
| [V] Min Yan | X |  |  |
| [V] Hongwon Lee | X |  |  |
| [V] Xuwen Zhao, TCL | X |  |  |
| [V] Paul Cheng, MediaTek Inc |  | X |  |
| [V] Li Quan , ZTE |  |  | X |
| [V] SunHee Baek, LGE | X |  |  |
| [V] Jason Yuchen Guo | X |  |  |
| [V] Dongguk Lim | X |  |  |
| [V] Okan Mutgan, Nokia | X |  |  |
| 【nv】ZhiGang Zhang |  |  | X |
| YH Tseng (曾彥雄) |  | X |  |
| Wook Bong Lee |  | X |  |
| [V] Hongyuan Zhang, NXP |  | X |  |
| [V] Zheng Guo,NXP |  |  | X |
| [V] Yingqiao Quan, Spreadtrum |  |  | X |
| [V] Genadiy Tsodik | X |  |  |
| Wei-Han Chen |  | X |  |
| [V] Denis Bykov, NXP | X |  |  |
| [V] Yue Zhao | X |  |  |
| [V] Vishnu Ratnam, Samsung Electronics | X |  |  |
| [V]HanGyu Cho\_LGE |  |  | X |
| [V] Sanket Kalamkar |  | X |  |
| [V] Qinglai Liu |  |  | X |
| [V] Sixian Luo, Sharp |  |  | X |
| [v] Steven.Qi Wang |  | X |  |
| Brian Hart |  | X |  |
| [V] Helene Ralle | X |  |  |
| [V] Prabodh Varshney |  |  | X |
| [V] Daniel Verenzuela | X |  |  |
| [V] Yongsen Ma, Samsung |  |  | X |
| Yunbo Li |  |  | X |
| [V] Ming Gan |  |  | X |
| [V] Lei Huang, Huawei |  | X |  |
| Alvin Hsu (徐永平) | X |  |  |
| [A] Abdalla Hussein, Huawei |  |  | X |
| [V] Jinsoo Choi, LGE | X |  |  |
| [V] Kosuke Aio, Sony | X |  |  |
| [V] Junbin Chen, TP-Link |  |  | X |
| [V] Azin Neishaboori, GM | X |  |  |
| [V] Shuntaro Suzuki, Yamaha | X |  |  |
| [V] Dmitry Akhmetov, Intel |  | X |  |
| [v] Solomon Trainin, Wiliot |  |  | X |
| 【nv】Yuanjian Zhang |  |  | X |
| [V] Bo Gong | X |  |  |
| [V] Eunsung Park LGE | X |  |  |
| [V] Mao Yang |  | X |  |
| [V] Chulho Chung |  |  | X |
| [V] Pei Zhou, TCL | X |  |  |
| [V] Subir Das [Peraton Labs] |  |  | X |
| [V] Kapil Gulati |  |  | X |
| [V] Ju Yan Pan, Huawei | X |  |  |
| [V} Kazuto Yano | X |  |  |
| [V] Myeongjin Kim, Samsung | X |  |  |
| [V] Karthik Srinivasa Gopalan, Samsung Electronics | X |  |  |
| [V] Patrice NEZOU, Canon | X |  |  |
| [V] Abhishek Chaturvedi, Samsung Electronics |  |  | X |
| [V] Yanchun Li, Huawei | X |  |  |
| [V] Hiroyuki Motozuka | X |  |  |
| [V] Siaud Isabelle Orange | X |  |  |
| [V] Dongju Cha, LGE | X |  |  |
| [V] Gaurang Naik, Qualcomm Technologies, Inc. |  | X |  |
| [V] Bo Li |  | X |  |
| Morteza Mehrnoush |  | X |  |
| [V] Salvatore Talarico, Nokia |  | X |  |
| [V] Serhat Erkucuk, Ofinno |  |  | X |
| [V] Ryota Yamada |  |  | X |
| [V] Shinya MIWA |  |  | X |
| Pooya Monajemi |  | X |  |
| [PV]Jun Minotani | X |  |  |
| [V] Shuang Fan, Sanechips | X |  |  |
| [V] Toshizo Nogami |  |  | X |
| [V] Dong Wei | X |  |  |
| [V] Yuki Tsujimaru |  |  | X |
| [V] Peshal Nayak, Samsung Electronics | X |  |  |
| [V] Yusuke Tanaka | X |  |  |
| Blanca Wong Mosquera |  | X |  |
| Lyutianyang Zhang |  | X |  |
| [V] Aiguo Yan, Samsung |  | X |  |
| Javier Perez-Ramirez |  | X |  |
| Yongho Seok |  | X |  |
| Ian Procyk |  |  | X |
| [V] Sigurd Schelstraete |  |  | X |
| Chung-Ta Ku, Mediatek |  |  | X |
| [V] Siukai Mak, Broadcom |  | X |  |
| [V] Jungjun Kim, Samsung Electronics |  |  | X |
| [V] BIAN Tong, Panasonic |  |  | X |
| gaborB |  |  | X |
| [V] Tong Xiao,Xiaomi |  |  | X |
| Javier Contreras |  | X |  |
| Yong Liu |  | X |  |
| Chitto Ghosh |  |  | X |
| ViceChair 802-11 |  | X |  |
| Chunyu Hu |  | X |  |
| [V] Preston Hunt | X |  |  |
| Dror Regev [V] | X |  |  |
| [V] Dignus-Jan Moelker, Broadcom |  | X |  |
| [V] Qing Xia, Sony | X |  |  |
| [V] Bin Qian, Huawei | X |  |  |
| [V]Yan Li,ZTE | X |  |  |
| [V] Mikael LORGEOUX Canon | X |  |  |
| [V] Jaheon Gu, Samsung Electronics |  | X |  |
| Zach Georgiev |  | X |  |
| [PV] Zigui Yang, Samsung | X |  |  |
| [V] Bo Sun, Sanechips | X |  |  |
| Dave Scott |  |  | X |
| [V] Kaikai Huang, Nokia |  |  | X |
| [V] Karim Nassiri Toussi, BRCM |  | X |  |
| [V] Albert Bredewoud, Broadcom |  | X |  |
| [A]Huixuan Zhou, OPPO | X |  |  |
| [V] Rubayet Shafin, Samsung Electronics | X |  |  |
| [P] Kerstin Johnsson |  |  | X |
| [V] Shawn(Sanghyun) Kim, WILUS Inc. |  |  | X |
| [V] Kiseon Ryu |  |  | X |
| [V] Peyush Agarwal |  | X |  |
| [V] Sang Kim LGE | X |  |  |
| [V] Woojin Ahn, KNUT |  |  | X |
| [V]Kazuyuki Tota Canon | X |  |  |
| [V] Gwangho Lee, KNUT |  |  | X |
| [v] Lisa Ward - Rohde & Schwarz |  |  | X |
| [V] Niranjan Grandhe, NXP |  | X |  |
| Ankur [Samsung] |  |  | X |
| [P] Eda Genc, Nokia |  |  | X |
| Ian Sherlock |  |  | X |
| [V] Alireza Ghaderipoor, MediaTek |  | X |  |
| [V] VK Jones |  | X |  |
| Anonymous |  |  | X |
| Anonymous |  |  | X |
| Anonymous |  | X |  |

* The record of the SP-A

|  |  |  |  |
| --- | --- | --- | --- |
| **Participant Name** | **Yes** | **No** | **Abs.** |
| Federico Lovison | X |  |  |
| [V] Yurong Qian, ZTE | X |  |  |
| [PV] Jiyang Bai, TCL |  |  | X |
| [V] Leo Montreuil |  | X |  |
| [V] Mike Montemurro | X |  |  |
| Ugo Campiglio | X |  |  |
| Dong Han |  |  | X |
| [v] Sean Coffey |  | X |  |
| [V] Hui Luo, Infineon | X |  |  |
| [V] Marcos Martinez |  |  | X |
| [V] Nehru Bhandaru | X |  |  |
| Jinjing Jiang |  |  | X |
| [V] Jeongki Kim, Ofinno |  |  | X |
| Rong Zhang |  |  | X |
| Minyoung Park |  |  | X |
| Pelin Salem | X |  |  |
| Qi Wang |  |  | X |
| [V] Yun Li, ZTE | X |  |  |
| [V] Youhan Kim (Qualcomm Technologies, Inc.) | X |  |  |
| [V] Wen-Di Shen, National Taiwan University |  | X |  |
| Mohamed Abouelseoud |  |  | X |
| Yanjun Sun |  |  | X |
| [V] Robert Sosack Molex | X |  |  |
| [PV] Mikhail Liubogoshchev | X |  |  |
| Lalit Garg |  | X |  |
| [V] Alice Jialing Li Chen | X |  |  |
| Ethan Zimmer | X |  |  |
| [V] Bo Cao, ZTE | X |  |  |
| [V] Shubhodeep Adhikari Broadcom |  | X |  |
| Tianyu Wu |  |  | X |
| [V] Ryuichi Hirata |  |  | X |
| [V] Stephen McCann |  | X |  |
| [V] Thomas Derham |  | X |  |
| [V] John Juhyung Son, WILUS |  |  | X |
| [V] Leonardo Lanante, Ofinno |  | X |  |
| [V] Hyungjin Kim, Broadcom |  | X |  |
| [V] Renlong Zhou,Sanechips | X |  |  |
| [V] Sherief Helwa, Qualcomm Technologies, Inc | X |  |  |
| [V] Liuming Lu, OPPO | X |  |  |
| [V] Seongho Byeon, Samsung Electronics |  | X |  |
| [V] David Boldy, Broadcom |  | X |  |
| Avner Epstein | X |  |  |
| [V]Hanqing Lou, InterDigital |  |  | X |
| [V]Shuling (Julia) Feng, Mediatek |  | X |  |
| Li Ma |  | X |  |
| [V]Ryunosuke Sakamoto, Sharp |  |  | X |
| [V] Xiangxin Gu, Spreadtrum | X |  |  |
| [V] Dana Ciochina-Kar Sony |  |  | X |
| Maulik Vaidya |  |  | X |
| [v] Jay Yang [ZTE] | X |  |  |
| Anuj Batra |  |  | X |
| [V] Timothy Jeffries - Futurewei |  |  | X |
| [V] Xiaofei Wang, InterDigital |  | X |  |
| [V] Yaoshen Cui, TP-Link | X |  |  |
| [V] Ke Zhong, Ruijie Networks |  | X |  |
| [V] Clark Carty | X |  |  |
| [V] You-Wei Chen, Mediatek |  | X |  |
| [V] Chaoming Luo | X |  |  |
| [PV]Zhongyi Wang, ZTE | X |  |  |
| [v]Luis Gutierrez, Broadcom |  | X |  |
| [V] Kyosuke Inoue, SHARP |  |  | X |
| [V] Tzu-Hsuan Chou | X |  |  |
| [V] Hank Hyeonjun Sung, WILUS |  |  | X |
| James Yee |  | X |  |
| Al Dumdei | X |  |  |
| [PV]Yi Jiang, ZTE | X |  |  |
| [V] Atsushi Shirakawa |  |  | X |
| [V] Srinath Puducheri, Broadcom |  | X |  |
| [V] Mark RISON |  |  | X |
| [V] Duncan Ho | X |  |  |
| [V] Ian Bajaj, Huawei | X |  |  |
| [V] Manasi Ekkundi, Samsung Electronics |  |  | X |
| [V] Wayne ChengYing Wu, Mediatek |  | X |  |
| 【nv】QingLiang Shou | X |  |  |
| [V] Eugene Baik, Qualcomm | X |  |  |
| Gaius Wee |  |  | X |
| [V] John Wullert, Peraton Labs |  |  | X |
| [V] Chenchen Liu | X |  |  |
| [V] Michael Grigat, Deutsche Telekom | X |  |  |
| [V] Bin Tian | X |  |  |
| [V] Stephane Baron, |  |  | X |
| [V] GeonHwan Kim, LGE |  |  | X |
| [V] William Li, Spreadtrum | X |  |  |
| [V] Mahmoud Hasabelnaby, Huawei | X |  |  |
| [V]Renfang Zhou, TP-Link | X |  |  |
| [V] Giovanni Chisci, Qualcomm | X |  |  |
| [V] Martin Eiger, Peraton Labs |  |  | X |
| Gerald KERGOURLAY |  |  | X |
| [V] Zhenpeng Shi, Huawei | X |  |  |
| [NV] Tristan HALNA du FRETAY |  |  | X |
| [V] Hank ChiHan Huang |  | X |  |
| [V] Insun Jang |  |  | X |
| [V] Akira Kishida, NTT |  |  | X |
| [V]Qisheng Huang, ZTE | X |  |  |
| [V] Guogang Huang | X |  |  |
| Anuj Dharap | X |  |  |
| [V] Qingwei Fu, TP-Link |  |  | X |
| [V] Gaurav Patwardhan, HPE |  | X |  |
| Bo Xiao ,ZTE | X |  |  |
| [PV] Insik Jung, LGE |  |  | X |
| [A] Shravan | X |  |  |
| Binita Gupta | X |  |  |
| [V] Junghoon Suh, Huawei | X |  |  |
| [V] Ying Wang |  |  | X |
| 2338 216 7833 | X |  |  |
| [V] Zhongjiang Yan | X |  |  |
| [V] Oded Redlich | X |  |  |
| [V] Jonghoe Koo, Samsung Electronics |  | X |  |
| [V] Yusuke Asai |  |  | X |
| Yaodong Zhang ,ZTE | X |  |  |
| [V] Rani Keren - Huawei | X |  |  |
| [V] Shuyu Shi, TP-Link |  | X |  |
| [V] OsamaAboul-Magd[Huawei] |  |  | X |
| [V] Mengshi Hu | X |  |  |
| [V] Romain GUIGNARD Canon | X |  |  |
| [V] Min Yan | X |  |  |
| [V] Hongwon Lee |  |  | X |
| [V] Yang Hang, Ruijie | X |  |  |
| [V] Paul Cheng, MediaTek Inc |  | X |  |
| [V] Li Quan , ZTE | X |  |  |
| [V] Vinko Erceg - Broadcom |  | X |  |
| [V] SunHee Baek, LGE |  |  | X |
| [V] Jason Yuchen Guo | X |  |  |
| [V] Okan Mutgan, Nokia | X |  |  |
| 【nv】ZhiGang Zhang | X |  |  |
| YH Tseng (曾彥雄) |  |  | X |
| Wook Bong Lee |  |  | X |
| [V] Hongyuan Zhang, NXP |  | X |  |
| [V] Zheng Guo,NXP |  |  | X |
| [V] Yingqiao Quan, Spreadtrum | X |  |  |
| Wei-Han Chen |  | X |  |
| [V] Yan Xin, Huawei | X |  |  |
| [V] Denis Bykov, NXP | X |  |  |
| [V] Zisheng Wang, ZTE | X |  |  |
| [V] Yue Zhao | X |  |  |
| [V] Vishnu Ratnam, Samsung Electronics |  | X |  |
| [V]HanGyu Cho\_LGE |  |  | X |
| [V] Sanket Kalamkar | X |  |  |
| [V] Sixian Luo, Sharp |  |  | X |
| [v] Steven.Qi Wang | X |  |  |
| Brian Hart | X |  |  |
| [V] Helene Ralle |  |  | X |
| [V]Suhwook Kim, Samsung Electronics |  | X |  |
| [V] Prabodh Varshney | X |  |  |
| [V] Daniel Verenzuela |  |  | X |
| [V] Yongsen Ma, Samsung |  | X |  |
| Yunbo Li | X |  |  |
| [V] Ahmed Mohamed, NXP |  |  | X |
| [V] Ming Gan | X |  |  |
| [V] Matthew Fischer |  | X |  |
| [V] Lei Huang, Huawei | X |  |  |
| Alvin Hsu (徐永平) |  | X |  |
| [A] Abdalla Hussein, Huawei | X |  |  |
| [V] Jinsoo Choi, LGE |  |  | X |
| [V] Abhishek Patil | X |  |  |
| [V] Junbin Chen, TP-Link |  |  | X |
| [V] Azin Neishaboori, GM |  | X |  |
| [V] Shuntaro Suzuki, Yamaha |  |  | X |
| [V] Dmitry Akhmetov, Intel |  |  | X |
| [v] Solomon Trainin, Wiliot | X |  |  |
| 【nv】Yuanjian Zhang | X |  |  |
| [V] Eunsung Park LGE |  |  | X |
| [V] Mao Yang | X |  |  |
| [V] Subir Das [Peraton Labs] |  |  | X |
| [V] Kapil Gulati |  |  | X |
| [V} Kazuto Yano |  |  | X |
| [V] Boon Loong Ng, Samsung Electronics |  | X |  |
| [V] Karthik Srinivasa Gopalan, Samsung Electronics |  | X |  |
| [V] Patrice NEZOU, Canon |  |  | X |
| [V] Abhishek Chaturvedi, Samsung Electronics |  | X |  |
| [V] Yanchun Li, Huawei | X |  |  |
| [V] Hiroyuki Motozuka |  |  | X |
| [V] Jinho Choi, Samsung Electronics |  | X |  |
| [V] Siaud Isabelle Orange | X |  |  |
| [V] Dongju Cha, LGE |  |  | X |
| [V] Bilal Sadiq, Samsung Electronics |  | X |  |
| [V] Gaurang Naik, Qualcomm Technologies, Inc. | X |  |  |
| [V] Bo Li | X |  |  |
| [V] Salvatore Talarico, Nokia | X |  |  |
| [V] Serhat Erkucuk, Ofinno |  |  | X |
| [V] Ryota Yamada |  |  | X |
| [V] Shinya MIWA |  |  | X |
| Pooya Monajemi |  |  | X |
| [V] Shuang Fan, Sanechips | X |  |  |
| [PV] Liquan Yuan, ZTE | X |  |  |
| [PV] Huang Chun, ZTE | X |  |  |
| [V] Toshizo Nogami |  |  | X |
| [V] Dong Wei | X |  |  |
| [V] Yuki Tsujimaru |  |  | X |
| [V] Jiayi Zhang (Vincent), Ofinno |  | X |  |
| [V] Yusuke Tanaka | X |  |  |
| [V] Sindhu Verma, Broadcom |  | X |  |
| Blanca Wong Mosquera | X |  |  |
| [V] Aiguo Yan, Samsung |  | X |  |
| Ian Procyk | X |  |  |
| [V] Sigurd Schelstraete |  |  | X |
| [V] Jungjun Kim, Samsung Electronics |  | X |  |
| [V] BIAN Tong, Panasonic |  |  | X |
| Javier Contreras | X |  |  |
| Yong Liu |  |  | X |
| ViceChair 802-11 |  |  | X |
| Chunyu Hu |  |  | X |
| [V] Preston Hunt |  |  | X |
| Dror Regev [V] | X |  |  |
| [V] Dignus-Jan Moelker, Broadcom |  | X |  |
| [V] Qing Xia, Sony |  |  | X |
| [V] Bin Qian, Huawei | X |  |  |
| [V] William Carney, sony |  |  | X |
| [V]Yan Li,ZTE | X |  |  |
| [V] Mikael LORGEOUX Canon |  |  | X |
| [V] Jaheon Gu, Samsung Electronics |  | X |  |
| Zach Georgiev | X |  |  |
| [V] Yue Qi, Samsung Electronics |  | X |  |
| [PV] Zigui Yang, Samsung |  |  | X |
| [V] Bo Sun, Sanechips | X |  |  |
| [V] Haneya Qureshi |  |  | X |
| [V] Kaikai Huang, Nokia | X |  |  |
| [V] Karim Nassiri Toussi, BRCM |  | X |  |
| [V] Albert Bredewoud, Broadcom |  | X |  |
| [V] Rubayet Shafin, Samsung Electronics |  | X |  |
| [P] Kerstin Johnsson |  |  | X |
| [V] Shawn(Sanghyun) Kim, WILUS Inc. |  |  | X |
| [V] Sang Kim LGE |  |  | X |
| [V] Woojin Ahn, KNUT |  |  | X |
| [V]Kazuyuki Tota Canon |  |  | X |
| [V] Gwangho Lee, KNUT |  |  | X |
| Reza Hedayat |  |  | X |
| [P] Eda Genc, Nokia | X |  |  |
| [V] Lili Hervieu | X |  |  |
| Ian Sherlock |  |  | X |
| [V] Alireza Ghaderipoor, MediaTek |  | X |  |
| [V] Ning Gao |  |  | X |
| [v] kumail |  |  | X |
| [V] GaborB, Mediatek |  | X |  |
| [V] Taeyoung Ha, Samsung Electronics |  | X |  |
| Matthew Chappell, Cox Communications |  |  | X |
| [V] Naveen Kakani | X |  |  |
| [V] Zhenguo Du | X |  |  |
| [V] Ross Jian Yu Huawei | X |  |  |
| [V] Srinivas Kandala |  | X |  |
| Anonymous | X |  |  |
| Anonymous |  |  | X |
| Anonymous |  | X |  |
| Anonymous |  | X |  |
| Anonymous |  |  | X |
| Anonymous |  | X |  |