IEEE P802.11
Wireless LANs

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| TGbn November 2024 Meeting Minutes |
| Date: 2024-12-13 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Yusuke Asai | NTT |  |  | yusuke.asai@ntt.com |
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|  |  |  |  |  |

Abstract

This document contains the minutes for TGbn November 2024sessions.

Revision history:

* Rev0: Initial version of the document.

Abbreviations:

* C: Comment.
* A: Answer.

# November 11th, Monday (8:00-10:00 PST) - Joint

* Split MAC and PHY sessions:
	+ MAC: <https://mentor.ieee.org/802.11/dcn/24/11-24-1791-01-00bn-tgbn-mac-ad-hoc-nov-2024-vancouver-minutes.doc>
	+ PHY: <https://mentor.ieee.org/802.11/dcn/24/11-24-1971-00-00bn-802-11bn-phy-ad-hoc-minutes-for-the-november-2024-interim-session.docx>

# November 11th, Monday (13:30-15:30 PST) - 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) & Alfred Asterjadhi (aasterja@qti.qualcomm.com)
		- PHY: Sigurd Schelstraete (sschelstraete@maxlinear.com), Tianyu Wu (tianyu@apple.com), and Dongguk Lim (dongguk.lim@lge.com)
		- MAC: Xiaofei Wang (xiaofei.wang@interdigital.com), and Srinivas Kandala (srini.k1@samsung.com), Jeongki Kim (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); 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 ([11-24/1667r3](https://mentor.ieee.org/802.11/dcn/24/11-24-1667-03-00bn-tgbn-nov-2024-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 [11-24/1667r3](https://mentor.ieee.org/802.11/dcn/24/11-24-1667-03-00bn-tgbn-nov-2024-meeting-agenda.pptx).
	+ Discussion:

C: Please move the pending SPs related to the coordinated BF topic to a joint session because the decision should be made in the overall multi-AP coordination protocol context.

C: The submission [11-24/1822r0](https://mentor.ieee.org/802.11/dcn/24/11-24-1822-00-00bn-cobf-design-for-uhr.pptx) about CBF should be joint or PHY earlier slot.

C: I defer the contribution [11-24/0963r1](https://mentor.ieee.org/802.11/dcn/24/11-24-0963-01-00bn-enhancement-of-bsr-follow-up.pptx), which I already requested.

(Chair added some contributions to the joint queue based on the requests.)

(Chair organized the queues per topic with increasing number of the DCN.)

C: How do we prioritize the submissions? There are a number of submissions that were uploaded ahead of the September meeting were not addressed.

A: There is the issue we are having here is that now there are contributions that were supposed to be in at least there were requested to be added in the queue and all kind of contribution was requested to be added to the joint queue. The added submissions were moved to Thursday session.

C: I also have the contribution [11-24/1837r0](https://mentor.ieee.org/802.11/dcn/24/11-24-1837-00-00bn-uhr-ndpa-signaling.pptx) in joint session.

* + The modified agenda (as in [11-24/1667r4](https://mentor.ieee.org/802.11/dcn/24/11-24-1667-04-00bn-tgbn-nov-2024-meeting-agenda.pptx)) was approved with unanimous consent.
* Announcements
	+ Chair announced the operation of straw polls
		- At the discretion of the chair, the member running a straw poll may request that a record be made of the individual responses (not just the aggregate result)
			* The objective is to allow the member to get more detail on where other members stand on the question
		- If a record of the responses is requested and the chair grants the request, the responses are recorded in the minutes
			* This is so that the result is available to all members
		- The members responding to the poll must be made aware that the responses are being recorded *before* the poll is run
			* This is so that the members are aware of the information being gathered and can respond appropriately
		- The chair decides whether the responses to a straw poll can be recorded
			* There may be time constraints on the agenda
			* There may be constraints on the tools (e.g., the chair is not able to gather the results because of limits on the WebEx account in use)
		- The chair should be made aware of the intent to run a straw poll with recorded responses ahead of the meeting so that the appropriate account and tools are in place
		- Members are reminded that…
			* Straw polls are for gathering information
			* Straw polls are NOT for making decisions
			* Motions are used to make decisions
			* The information gathered is for the member running the straw poll
			* The member running the straw poll decides the question asked
* Summary from September 2024 meeting
	+ Held 10 teleconferences between September and November 2024 ([11-24/1643r20](https://mentor.ieee.org/802.11/dcn/24/11-24-1643-20-00bn-sept-nov-tgbn-teleconference-agenda.docx)).
		- Discussed ~50 technical submissions covering a variety of topics
			* Multi-AP (MAP) coordination, non-primary channel access (NPCA), distributed RUs (DRU),
			* Security, relay operation, channel access, low latency, spatial reuse, dynamic bandwidth expansion.
			* Dynamic subchannel operation (DSO), power save, feedback, MIMO
		- Finalized POC assignment & created TTT groups for writing spec text for TGbn D0.1
	+ Targets for the November plenary
		- Presentation of technical submissions and run SPs
			* ~180 pending submissions and ~90 pending SPs on presented submissions
		- Continue populating the TGbn SFD with approved concepts
* Approval TG Minutes
	+ **Motion:**

Move to approve TGbn minutes listed below:

* + - September interim: <https://mentor.ieee.org/802.11/dcn/24/11-24-1684-01-00bn-tgbn-september-2024-meeting-minutes.docx>
		- Teleconferences Sept-Nov: <https://mentor.ieee.org/802.11/dcn/24/11-24-1755-00-00bn-tgbn-september-october-2024-teleconferences-minutes.docx>

Move: Yusuke Asai Second: Jim Lansford

**Approved with unanimous consent.**

* Technical Submissions – Miscellaneous
	+ [11-24/1499r3](https://mentor.ieee.org/802.11/dcn/24/11-24-1499-03-00bn-low-latency-bss-indication.pptx): Low Latency BSS Indication Akira Kishida (NTT)

(Only Q&A session)

C: In the slide 13, the value six is used for low latency. How does the system announce both of emergency services and low latency?

A: In this case, the emergency network type should be prioritized. We can give up indicating low latency.

C: There are multiple ways to indicate low latency. If you set this element, then you limit and cannot indicate other types, for example, free public network or personal devices. It is a good thought to indicate that it is a low latency BSS, but we can think of finding other ways to indicate that.

C: It is a good thought, but I have one concern. When low-latency BSS is noticed, there are multiple features that are contributing to the low-latency. I am not sure whether we are capturing all of that in this one.

C: In the slide 7, my concern is unfairness to multi-AP. When multiple APs hear each other, one AP operates short TXOP, and another AP operates long TXOP, how can an AP protect the fairness between low latency BSS and normal BSSs?

A: There is no restriction to force TXOP length. The setting of this parameter refers to operators for AP. This feature provides only indication for low-latency BSS.

(The presenter requested to take a recorded straw poll.)

(Due to problem on the Slido system, the SP could not be run and postponed to Thursday PM2 joint session.)

* + [11-24/1705r](https://mentor.ieee.org/802.11/dcn/24/11-24-1705-01-00bn-frer-for-802-11bn.pptx)0: FRER for 802.11bn Donald Eastlake 3rd (Independent)

C: I think a lot of what you are asking for are present already. But in terms of the non-collocated devices, that is a discussion point.

A: It would require us to change802.1CB.

C: I echo the previous comment. A lot of this is already doable, allowed and specified in 802.11be, especially the MLD level. In the slide 8, I wanted to ask your clarification questions you mentioned that 11bn could optionally detect our attack presence in frames you received at the MAC Sap. How do you envision that happens?

A: I have not thought about in detail, but essentially, the point which you are deciding to assign a TID to some data is the point where you might want to take this into account.

C: I think a lot of this is already possible to existing standard.

A: I agree that. A lot of it is possible as I said, too. But the use of the link level action to stop redundant transmissions that are no longer necessary and I think it is a key new idea here.

C: This is currently allowed. Once an AP gets an acknowledgment from one of the links, it is possible to use this acknowledgment to cancel any current transmission to the other links. All these AP would use the same sequence number.

* + [11-24/1823r0](https://mentor.ieee.org/802.11/dcn/24/11-24-1823-00-00bn-csi-in-sounding-in-cbf.pptx): CSI in Sounding in CBF Okan Mutgen (Nokia)

C: In the slide 6, I think it may be not a problem for the SMD architecture. If you observed that architecture, we have discussed in 11bn, then we were new roaming architecture which is SMD with PDK sharing. In that case, the AP1 and the AP2 may belong to the same mobility domains and they will share the same PDK.

A: I think roaming is a complicated case, but this is a simple case. What we are talking about is just CSI information. What the station 1 needs is just delivering the CSI information.

C: I agree with this direction, because 11be is the baseline of the bn. In the slide 8, the CSI can be delivered associated AP whereas over the air or over the DS first for the over there. It will cause some overhead issue if you add additional signal to the AP1 and the AP2.

A: There will be some overhead, but at least we are gaining privacy.

C: In the slide 8, do you think this security establishment should be done per sounding procedure or can be done once like association?

A: It is going to be implementation specific. If sounding happens too much, then the security establishment will be negated once and will be used for couple of soundings. But if not, it will just establish and then terminate immediately afterwards.

* + 11-24/[1435r1](https://mentor.ieee.org/802.11/dcn/24/11-24-1435-01-00bn-uhr-multi-channel-access.pptx): UHR Multi-channel Access Yanchun Li (Huawei)

C: You are trying to do a SP based switching. There is uncertainty the SP, just because an AP has announced that SP, you do not know whether the SP’s indeed going to be used and you are trying to address that case. Wouldn’t it be a lot simpler to just look at the transmission if there is a transmission on the BSS’s primary channel?

A: There is always a hidden node effect. If it is simply based on the detection of an OBSS, some stations or some APs may do this channel transition. So, then we will encounter the synchronization issue of this channel. All AP or all associated stations, they are assumed to be capable for detecting their own APs transmission. If the associated AP transmits some control signal or something, then those stations are expected to detect those frames with a high probability.

C: But the assumption that they will always be hidden nodes in and then one AP will switch whereas the other, I think that is the strong assumption.

C: I am a little bit worried because I see a bunch of complexity here and thing that could go wrong sometimes helps, sometimes don’t help. Some simulation results are always helpful.

A: In this contribution, we are considered that multiple BSSs, they all have low latency traffic requirement. So, we made this SP tentative, because, for example, for everyone, if it had owned some best effort traffic, then they should not use this SP, because the reserve this SP is for its own low latency traffic.

C: Regarding the SP3 and the slide 12, the reception of switching indication frame from local AP’s primary channel. Does it come from the OBSS AP or is it the AP deciding and informing the associated STAs?

A: We consider a simple case the local AP will forward some remote AP of SP reservation. SO, all of associated stations can regard this SP.

C: Is it before all this start, right?

A: Yes, all those negotiations and announcements are before this SP.

C: I look at this proposal that using restricted TWT is just to simplified stuff. If we assume that the TWT is just protected at the beginning of the SP, not for the whole service period, it is mostly initiated by the AP.

A: We consider a restricted TWT has a very limited effect on protecting high priority traffic. To really satisfy the stringent low-latency requirement for Wi-Fi 8, then we need a more robust low-latency protection scheme.

(Chair proposed to add submission of [11-24/864r1](https://mentor.ieee.org/802.11/dcn/24/11-24-0864-01-00bn-edca-enhancement-for-low-latency-traffic.pptx) and the modified agenda was approved with unanimous consent.)

* + [11-24/0864r1](https://mentor.ieee.org/802.11/dcn/24/11-24-0864-01-00bn-edca-enhancement-for-low-latency-traffic.pptx): EDCA Enhancement for Low latency Traffic Yonggang Fang (MediaTek)

(Q+A session was resumed to the next MAC session.)

* AoB: None.
* Recessed at 15:29.

# November 12th, Tuesday (10:30-12:30 PST) - Joint

* Split MAC and PHY sessions:
	+ MAC: <https://mentor.ieee.org/802.11/dcn/24/11-24-1791-01-00bn-tgbn-mac-ad-hoc-nov-2024-vancouver-minutes.doc>
	+ PHY: <https://mentor.ieee.org/802.11/dcn/24/11-24-1971-00-00bn-802-11bn-phy-ad-hoc-minutes-for-the-november-2024-interim-session.docx>

# November 12th, Tuesday (13:30-15:30 PST) - Joint

* Split MAC and PHY sessions:
	+ MAC: <https://mentor.ieee.org/802.11/dcn/24/11-24-1791-01-00bn-tgbn-mac-ad-hoc-nov-2024-vancouver-minutes.doc>
	+ PHY: <https://mentor.ieee.org/802.11/dcn/24/11-24-1971-00-00bn-802-11bn-phy-ad-hoc-minutes-for-the-november-2024-interim-session.docx>

# November 12th, Tuesday (19:30-21:30 PST) - Joint

* Split MAC and PHY sessions:
	+ MAC: <https://mentor.ieee.org/802.11/dcn/24/11-24-1791-01-00bn-tgbn-mac-ad-hoc-nov-2024-vancouver-minutes.doc>
	+ PHY: <https://mentor.ieee.org/802.11/dcn/24/11-24-1971-00-00bn-802-11bn-phy-ad-hoc-minutes-for-the-november-2024-interim-session.docx>

# November 13th, Wednesday (10:30-12:30 PST) - Joint

* Split MAC and PHY sessions:
	+ MAC: <https://mentor.ieee.org/802.11/dcn/24/11-24-1791-01-00bn-tgbn-mac-ad-hoc-nov-2024-vancouver-minutes.doc>
	+ PHY: <https://mentor.ieee.org/802.11/dcn/24/11-24-1971-00-00bn-802-11bn-phy-ad-hoc-minutes-for-the-november-2024-interim-session.docx>

# November 13th, Wednesday (16:00-18:00 PST) - Joint

* Split MAC and PHY sessions:
	+ MAC: <https://mentor.ieee.org/802.11/dcn/24/11-24-1791-01-00bn-tgbn-mac-ad-hoc-nov-2024-vancouver-minutes.doc>
	+ PHY: <https://mentor.ieee.org/802.11/dcn/24/11-24-1971-00-00bn-802-11bn-phy-ad-hoc-minutes-for-the-november-2024-interim-session.docx>

# November 14th, Thursday (8:00-10:00 PST) - Joint

* Split MAC and PHY sessions:
	+ MAC: <https://mentor.ieee.org/802.11/dcn/24/11-24-1791-01-00bn-tgbn-mac-ad-hoc-nov-2024-vancouver-minutes.doc>
	+ PHY: <https://mentor.ieee.org/802.11/dcn/24/11-24-1971-00-00bn-802-11bn-phy-ad-hoc-minutes-for-the-november-2024-interim-session.docx>

# November 14th, Thursday (10:30-12:30 PST) - Joint

* Split MAC and PHY sessions:
	+ MAC: <https://mentor.ieee.org/802.11/dcn/24/11-24-1791-01-00bn-tgbn-mac-ad-hoc-nov-2024-vancouver-minutes.doc>
	+ PHY: <https://mentor.ieee.org/802.11/dcn/24/11-24-1971-00-00bn-802-11bn-phy-ad-hoc-minutes-for-the-november-2024-interim-session.docx>

# November 14th, Thursday (13:30-15:30 PST) - Joint

* The Chair, Alfred Asterjadhi (Qualcomm), calls the meeting to order.
* Yusuke Asai (NTT) is serving as the Secretary.
* Registration information
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* Meeting protocol
	+ The chair announced that everyone is required to log in WebEx to vote.
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		- "[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:
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	+ 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) & Alfred Asterjadhi (aasterja@qti.qualcomm.com)
		- PHY: Sigurd Schelstraete (sschelstraete@maxlinear.com), Tianyu Wu (tianyu@apple.com), and Dongguk Lim (dongguk.lim@lge.com)
		- MAC: Xiaofei Wang (xiaofei.wang@interdigital.com), and Srinivas Kandala (srini.k1@samsung.com), Jeongki Kim (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); 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 ([11-24/1667r1](https://mentor.ieee.org/802.11/dcn/24/11-24-1667-13-00bn-tgbn-nov-2024-meeting-agenda.pptx)3.)
* Agenda
	+ Chair reviewed proposed agenda found in [11-24/1667r1](https://mentor.ieee.org/802.11/dcn/24/11-24-1667-13-00bn-tgbn-nov-2024-meeting-agenda.pptx)3.
	+ Discussion:
		- There was a request to presentation time for the WBA on the L4S. The presentation time was assigned to the any other business on Thursday PM2 session.
	+ The modified agenda was approved with unanimous consent.
* Motions
	+ The following motions were conducted according to the motion list ([11-24/0171r19](https://mentor.ieee.org/802.11/dcn/24/11-24-0171-19-00bn-tgbn-motions-list-part-1.pptx)).
	+ **Motion 54 (PHY)**

Move to add to the TGbn SFD the following:

* + - 802.11bn specification will support LDPC codes with block-length of 3888 bits
			* The supported code rates will be 1/2, 2/3, 3/4 and 5/6
			* The parity matrix representation of these LDPC codes will be as described in the slides 22-31 of document [11-23/1985r6](https://mentor.ieee.org/802.11/dcn/23/11-23-1985-06-00bn-longer-ldpc-codeword.pptx)

Move: Rethna Pulikkoonattu Second: Sameer Vermani

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*23/1985r6*](https://mentor.ieee.org/802.11/dcn/23/11-23-1985-06-00bn-longer-ldpc-codeword.pptx)*]. SP result: no objection.*

* + **Motion 55 (PHY)**

Move to add to the TGbn SFD the following:

* + - Update the LDPC PPDU encoding parameter table for UHR as below:
			* If FEC coding scheme is LDPC and Navbits ≤ 3888, the 2xLDPC subfield shall be set to 0 and the LDPC codeword length selection shall follow the pre-UHR LDPC procedure, specifically using codeword lengths (648, 1296, or 1944) bits based on the table below



Move: Shengquan Hu Second: Juan Fang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1828r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1828-01-00bn-2xldpc-encoding-parameters.pptx)*]. SP result: 80Y/9N/27A.*

* + **Motion 56 (PHY)**

Move to add to the TGbn SFD the following:

* + - Data and pilot subcarrier indices for DRUs in a 20 MHz UHR PPDU are defined in following table:



Move: Shengquan Hu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/0468r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-0468-02-00bn-dru-tone-plan-for-11bn.pptx)*]. SP result: 51Y/11N/23A.*

* + **Motion 57 (PHY)**

Move to add to the TGbn SFD the following:

* + - Data and pilot subcarrier indices for DRUs in a 40 MHz UHR PPDU are defined in following table:



Move: Shengquan Hu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/0468r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-0468-02-00bn-dru-tone-plan-for-11bn.pptx)*]. SP result: No objection.*

* + **Motion 58 (PHY)**

Move to add to the TGbn SFD the following:

* + - Data and pilot subcarrier indices for DRUs in an 80 MHz UHR PPDU are defined in following table:



Move: Shengquan Hu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/0468r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-0468-02-00bn-dru-tone-plan-for-11bn.pptx)*]. SP result: No objection.*

* + **Motion 59 (PHY)**

Move to add to the TGbn SFD the following:

* + - DRU index based global CSD start index assignment will be used for DRU UHR-STF transmission
		- Global CSD start index assignment for DRU UHR-STF transmission will be based on the following table



Move: Shengquan Hu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1188r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1188-02-00bn-global-csd-index-assignment-for-dru-stf-transmission-in-11bn.pptx)*]. SP result: No objection.*

* + **Motion 60 (PHY)**

Move to add to the TGbn SFD the following:

* + - DRU DRUs on frequency subblocks of wide bandwidth PPDU should be defined as DRUs on 20MHz, 40MHz and 80MHz PPDU with the following constant shifts



Move: Shengquan Hu Second: Jianhan Liu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1189r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1189-01-00bn-dru-transmission-on-frequency-subblocks-of-wide-bandwidth-ppdu.pptx)*]. SP result: No objection.*

* + **Motion 61 (PHY)**

Move to add to the TGbn SFD the following:

* + - Use 4-bit bitmap in Common Info field (B56-B59) for DRU indication
			* 1 bit/80MHz to indicate each 80MHz is used for DRU or RRU

Move: Shengquan Hu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1489r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1489-01-00bn-signaling-for-dru-transmission.pptx)*]. SP result: No objection.*

* + **Motion 62 (PHY)**

Move to add to the TGbn SFD the following:

* + - Re-purpose 2 bits of SS Allocation subfield in User Info field for distribution bandwidth indication if DRU

Move: Shengquan Hu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1489r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1489-01-00bn-signaling-for-dru-transmission.pptx)*]. SP result: No objection.*

* + **Motion 63 (PHY)**

Move to add to the TGbn SFD the following:

* + - Minimum size of RRU in hybrid mode in 160MHz and 320MHz is 242

Move: Shengquan Hu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*23/2020r3*](https://mentor.ieee.org/802.11/dcn/23/11-23-2020-03-00bn-high-level-perspective-on-distributed-tone-ru-for-11bn.pptx)*]. SP result: No objection.*

* + **Motion 64 (PHY)**

Move to add to the TGbn SFD the following:

* + - DRU distribution bandwidth of 60 MHz is defined in an 80 MHz frequency subblock (with the highest 20 MHz subchannel unallocated) in a UHR TB PPDU
		- No allocation is made in the highest 20 MHz subchannel

Move: Yan Xin Second: Ross J. Yu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1856r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1856-01-00bn-tone-distribution-in-dru-with-puncturing-follow-up.pptx)*]. SP result: No objection.*

* + **Motion 65 (PHY)**

Move to add to the TGbn SFD the following:

* + - 11bn supports the following DBW dependent DRU size support to maximize BW and power efficiency
			* No MRU in distributed transmission
			* 20MHz: RU26, RU52, RU106
			* 40MHz: RU26, RU52, RU106, RU242
			* 80MHz: RU52, RU106, RU242, RU484

Move: Lin Yang Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1510r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1510-02-00bn-open-issues-on-dru.pptx)*]. SP result: No objection.*

* + **Motion 66 (PHY)**

Move to add to the TGbn SFD the following:

* + - 11bn supports per 80MHz DRU/RRU switch if PPDU BW >80MHz and no hybrid DRU and RRU mode for up to 80MHz

Move: Lin Yang Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1510r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1510-02-00bn-open-issues-on-dru.pptx)*]. SP result: No objection.*

* + **Motion 67 (PHY)**

Move to add to the TGbn SFD the following:

* + - In mixed RRU and DRU transmission the RRU LTF follows the exact same rule as if there is no DRU. The DRU LTF sequence depends on the distribution BW

Move: Lin Yang Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1510r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1510-02-00bn-open-issues-on-dru.pptx)*]. SP result: No objection.*

* + **Motion 68 (PHY)**

Move to add to the TGbn SFD the following:

* + - DRU transmission uses single stream pilots in both LTF and data portion

Move: Lin Yang Second: Ross J. Yu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1510r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1510-02-00bn-open-issues-on-dru.pptx)*]. SP result: No objection.*

* + **Motion 69 (PHY)**

Move to add to the TGbn SFD the following:

* + - DRU only uses 4x LTF

Move: Lin Yang Second: Bin Tian

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1510r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1510-02-00bn-open-issues-on-dru.pptx)*]. SP result: No objection.*

* + **Motion 70 (PHY)**

Move to add to the TGbn SFD the following:

* + - In DRU transmission, global CSD provides CSD start index i for each DRU. If Nss for this DRU is larger than 1, then it will use CSD[mod(i: i+Nss-1, 8)] for each ss

Move: Lin Yang Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1510r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1510-02-00bn-open-issues-on-dru.pptx)*]. SP result: No objection.*

* + **Motion 71 (PHY)**

Move to add to the TGbn SFD the following:

* + - The following pilot index table from hierarchical uniform pilot structure of distance of 11 will be used for distributed transmission over 20MHz



Move: Lin Yang Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1510r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1510-02-00bn-open-issues-on-dru.pptx)*]. SP result: No objection.*

* + **Motion 72 (PHY)**

Move to add to the TGbn SFD the following:

* + - The following pilot index table from hierarchical uniform pilot structure of distance of 11 will be used for distributed transmission over 40MHz



Move: Lin Yang Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1510r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1510-02-00bn-open-issues-on-dru.pptx)*]. SP result: No objection.*

* + **Motion 73 (PHY)**

Move to add to the TGbn SFD the following:

* + - The following pilot index table from hierarchical uniform pilot structure of distance of 11 will be used for distributed transmission over 80MHz



Move: Lin Yang Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1510r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1510-02-00bn-open-issues-on-dru.pptx)*]. SP result: No objection.*

* + **Motion 74 (PHY)**

Move to add to the TGbn SFD the following:

* + - Define an enhanced long range (ELR) PPDU in IEEE 802.11bn with the following targets
			* Downlink and Uplink in 2.4 GHz (within BSS range with 11b beacon)
			* Uplink only in 5 GHz and 6 GHz bands
			* Minimum data rate is greater than or equal to 1.5 Mbps

Move: Wook Bong Lee Second: Tianyu Wu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1573r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1573-01-00bn-an-elr-ppdu-follow-up.pptx)*]. SP result: No objection.*

* + **Motion 75 (PHY)**

Move to add to the TGbn SFD the following:

* + - In ELR PPDU, STA boosts L-STF and L-LTF by 3 dB
			* For UL, non-AP STA corrects CFO before transmission
			* Note: Non-AP STA pre-correction CFO requirement for residual CFO is TBD

Move: Wook Bong Lee Second: Anuj Batra

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1573r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1573-01-00bn-an-elr-ppdu-follow-up.pptx)*]. SP result: 51Y/6N/23A.*

* + **Motion 76 (PHY)**

Move to add to the TGbn SFD the following:

* + - ELR PPDU only supports the following two modulation and coding schemes:
			* BPSK with coding rate R=1/2
			* QPSK with coding rate R=1/2

Move: Shengquan Hu Second: Wook Bong Lee

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1488r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1488-00-00bn-elr-ppdu-transmission-design.pptx)*]. SP result: 61Y/6N/9A.*

* + **Motion 77 (PHY)**

Move to add to the TGbn SFD the following:

* + - ELR transmission shall apply the phase rotations as below for both BPSK and QPSK modulations
			* The rotation of -1 will be applied on data subcarriers of lower half of RU3 and upper half of RU4 for 52-tone regular RU (RRU52) on 20MHz



Move: Shengquan Hu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1488r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1488-00-00bn-elr-ppdu-transmission-design.pptx)*]. SP result: No objection.*

* + **Motion 78 (PHY)**

Move to add to the TGbn SFD the following:

* + - ELR packet detection is done at L-STF, which has same length as legacy with 3dB power boosting
			* L-LTF also has same length as legacy with same power boosting as L-STF

Move: Lin Yang Second: Wook Bong Lee

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1478r4*](https://mentor.ieee.org/802.11/dcn/24/11-24-1478-04-00bn-elr-ppdu-design.pptx)*]. SP result: 49Y, 8N, 14A.*

* + **Motion 79 (PHY)**

Move to add to the TGbn SFD the following:

* + - U-SIG carries STA-ID in ELR PPDU

Move: Lin Yang Second: Wook Bong Lee

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1478r4*](https://mentor.ieee.org/802.11/dcn/24/11-24-1478-04-00bn-elr-ppdu-design.pptx)*]. SP result: No objection.*

* + **Motion 80 (PHY)**

Move to add to the TGbn SFD the following:

* + - Define two ELR-Mark symbols for ELR mode classification
			* ELR-Mark symbols carry a known sequence to receiver
			* ELR-Mark symbols carry BSS color info in ELR-Mark sequence
			* No power boosting on ELR-Mark symbols
			* Two ELR-Mark symbols are both QBPSK modulated on data subcarriers
			* ELR-Mark symbols use the following tone plan
			* 4 regular pilots as EHT-SIG + 48 data tones

Move: Lin Yang Second: Leo Montreuil

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1478r4*](https://mentor.ieee.org/802.11/dcn/24/11-24-1478-04-00bn-elr-ppdu-design.pptx)*]. SP result: No objection.*

* + **Motion 81 (PHY)**

Move to add to the TGbn SFD the following:

* + - 11bn defines the following PPDU frame format for ELR
			* PE TBD



Move: Lin Yang Second: Wook Bong Lee

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1478r4*](https://mentor.ieee.org/802.11/dcn/24/11-24-1478-04-00bn-elr-ppdu-design.pptx)*]. SP result: No objection.*

* + **Motion 82 (PHY)**

Move to add to the TGbn SFD the following:

* + - ELR PPDU has 3dB boosting applied on both ELR-STF and ELR-LTF
			* ELR PPDU has ELR-STF duration and sequence same as that of UHR DL SU/MU PPDU
			* 4us using EHT-STF sequence for 20MHz
		- ELR PPDU defines a fixed/single mode of LTF+GI
			* 11bn supports 2x LTF+1.6us GI only for ELR PPDU
			* 11bn uses two UHR-LTF symbols for ELR PPDU

Move: Lin Yang Second: Wook Bong Lee

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1478r4*](https://mentor.ieee.org/802.11/dcn/24/11-24-1478-04-00bn-elr-ppdu-design.pptx)*]. SP result: No objection.*

* + **Motion 83 (PHY)**

Move to add to the TGbn SFD the following:

* + - ELR PPDU defines two symbols for ELR-SIG, specifically
			* ELR PPDU defines separately encoded two symbols for ELR-SIG
			* Each symbol has separate CRC and tail bits (6 bits)
		- ELR-SIG has same tone plan and duplication scheme as ELR-data and BCC encoded with MCS0

Move: Lin Yang Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1478r4*](https://mentor.ieee.org/802.11/dcn/24/11-24-1478-04-00bn-elr-ppdu-design.pptx)*]. SP result: No objection.*

* + **Motion 84 (PHY)**

Move to add to the TGbn SFD the following:

* + - For a (non-ELR) UHR MU PPDU, when EQM/UEQM indicates UEQM in a User field for non-MU-MIMO, there exists a MCS field, a NSS field and a 2 bit field indicating UEQM patterns.

Move: Ross J. Yu Second: Jianhan Liu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1772r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1772-00-00bn-signaling-for-uhr-ppdu-follow-up.pptx)*]. SP result: 64Y, 10N, 12A.*

* + **Motion 85 (PHY)**

Move to add to the TGbn SFD the following:

* + - For a DRU transmission, a new 4x UHR-LTF sequence is defined in each distribution bandwidth
			* A 4x UHR-LTF sequence has coefficients on all tones overlapped with DRU tones defined in each distribution bandwidth

Move: Eunsung Park Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1097r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1097-01-00bn-thoughts-on-uhr-ltf-for-dru.pptx)*]. SP result: No objection.*

* + **Motion 86 (PHY)**

Move to add to the TGbn SFD the following:

* + - In a PPDU using DRUs, a UHR-LTF sequence corresponding to the distribution bandwidth of the DRUs is used regardless of the PPDU bandwidth

Move: Eunsung Park Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1097r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1097-01-00bn-thoughts-on-uhr-ltf-for-dru.pptx)*]. SP result: No objection.*

* + **Motion 87 (PHY)**

Move to add to the TGbn SFD the following:

* + - For 80 MHz PPDU where one of the 20 MHz channels is punctured, the following distribution bandwidth mode is allowed for DRU
			* 20 MHz + 40 MHz (or 40 MHz + 20 MHz) mode

Move: Eunsung Park Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1471r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1471-03-00bn-signaling-for-dru-in-trigger-frame.pptx)*]. SP result: No objection.*

* + **Motion 88 (PHY)**

Move to add to the TGbn SFD the following:

* + - For 160 MHz and 320 MHz PPDUs, in an 80 MHz frequency subblock where one of the 20 MHz channels is punctured, the following distribution bandwidth mode is allowed for DRU
			* 20 MHz + 40 MHz (or 40 MHz + 20 MHz) mode

Move: Eunsung Park Second: Ross J. Yu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1471r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1471-03-00bn-signaling-for-dru-in-trigger-frame.pptx)*]. SP result: No objection.*

* + **Motion 89 (PHY)**

Move to add to the TGbn SFD the following:

* + - For 160 MHz and 320 MHz PPDUs, in an 80 MHz frequency subblock where one of the 40 MHz channels is punctured (i.e., either 1100 or 0011 case), the following distribution bandwidth mode is allowed for DRU
			* 40 MHz mode

Move: Eunsung Park Second: Yan Xin

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1471r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1471-03-00bn-signaling-for-dru-in-trigger-frame.pptx)*]. SP result: 46Y/12N/16A.*

* + **Motion 90 (PHY)**

Move to add to the TGbn SFD the following:

* + - For a 40 MHz PPDU, the following distribution bandwidth mode is allowed for DRU
			* Only 40 MHz mode

Move: Eunsung Park Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1471r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1471-03-00bn-signaling-for-dru-in-trigger-frame.pptx)*]. SP result: No objection.*

* + **Motion 91 (PHY)**

Move to add to the TGbn SFD the following:

* + - The U-SIG field in ELR PPDU consists of 2 OFDM symbols and includes the same version independent fields defined in the U-SIG field of EHT PPDU
		- The details for the version dependent fields are TBD.

Move: Dongguk Lim Second: Wook Bong Lee

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1485r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1485-02-00bn-considerations-for-elr-ppdu-format.pptx)*]. SP result: No objection.*

* + **Motion 92 (PHY)**

Move to add to the TGbn SFD the following:

* + - The BW of ELR PPDU is 20MHz and one Spatial stream is used for ELR transmission.

Move: Dongguk Lim Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1486r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1486-01-00bn-performance-evaluation-of-elr-transmission.pptx)*]. SP result: No objection.*

* + **Motion 93 (PHY)**

Move to add to the TGbn SFD the following:

* + - In the ELR transmission, a repeating of 52-tone RRU is used in 20MHz.
			* The same data is repeated in four 52-tone RRUs in 20 MHz.
			* The subcarrier allocation of 52-tone RRU equals the 52-tone RU defined in 11be.

Move: Dongguk Lim Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1486r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1486-01-00bn-performance-evaluation-of-elr-transmission.pptx)*]. SP result: No objection.*

* + **Motion 94 (PHY)**

Move to add to the TGbn SFD the following:

* + - ELR LDPC rate matching will reuse the existing 802.11ac LDPC rate matching with 1-bit LDPC extra OFDM symbol indication.

Move: Juan Fang Second: Eunsung Park

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1590r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1590-01-00bn-extended-long-range-signaling.pptx)*]. SP result: No objection.*

* + **Motion 95 (PHY)**

Move to add to the TGbn SFD the following:

* + - ELR-SIG will use the following two OFDM symbols design.



Move: Juan Fang Second: Ross J. Yu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1590r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1590-01-00bn-extended-long-range-signaling.pptx)*]. SP result: No objection.*

* + **Motion 96 (PHY)**

Move to add to the TGbn SFD the following:

* + - The contents of the U-SIG field in ELR PPDU is defined as follows.

 

* + - * ELR PPDU indication: PPDU type & compression mode set to ‘11’.
			* STA-ID (11 bit): B2-B12 bit in USIG-2.
			* ELR validate bits (B13-B15 of USIG-2): Set to all ‘1’ for ELR PPDU.
			* Note: B11-B15 – in EHT MU PPDU indicates “Number of EHT-Sig symbols”, and in UHR MU PPDU indicates “Number of UHR-Sig symbols”

Move: Hari Ram Balakrishnan Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1592r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1592-01-00bn-usig-fields-in-an-elr-ppdu.pptx)*]. SP result: No objection.*

* + **Motion 97 (PHY)**

Move to add to the TGbn SFD the following:

* + - Both sequential NDP based and joint NDP based sounding options will be supported for COBF in 802.11bn.

Move: Rethna Pulikkoonattu Second: Sameer Vermani

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1568r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1568-01-00bn-sounding-design-for-c-bf.pptx)*]. SP result: No objection.*

* + **Motion 98 (PHY)**

Move to add to the TGbn SFD the following:

* + - Two separate capabilities shall be defined for the maximum number of spatial streams supported for reception of a sounding NDP in UHR and the maximum total number of streams (across all users) supported for reception in UHR DL MU-MIMO and CoBF PPDUs
			* The only possible values for each capability are 4 and 8.

Move: Rethna Pulikkoonattu Second: You-Wei Chen

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1568r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1568-01-00bn-sounding-design-for-c-bf.pptx)*]. SP result: No objection.*

* + **Motion 99 (PHY)**

Move to add to the TGbn SFD the following:

* + - The Coordinated beamforming (COBF) transmission phase in 802.11bn shall be limited to 2 APs.

Move: Sameer Vermani Second: Tianyu Wu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1542r5*](https://mentor.ieee.org/802.11/dcn/24/11-24-1542-05-00bn-sounding-schemes-for-coordinated-beamforming.pptx)*]. SP result: No objection.*

* + **Motion 100 (PHY)**

Move to add to the TGbn SFD the following:

* + - The sequential NDP based sounding protocol will be as shown below for COBF
			* Sounding happens one BSS at a time
			* NDPA only addresses the in-BSS STAs
			* MAC related additional frames are TBD.



Move: Sameer Vermani Second: You-Wei Chen

* + - Discussion:

C: Does this mean only the STAs will feedback the CSI, or you also have CSI feedback from the OBSS AP?

A: Sounding happens one BSS at AP-STAs at a time, which means that you have firstly the feedback being collected from station one BSS, and then you will collect it from OBSS. So, in both joint and sequential signaling we took care of the NDP sounding.

C: I am not sure about how that works. I need more time to think about it.

 (Counting vote was requested from the commentor.)

C: This whole figure is showing some MAC frame exchanges, but this motion is in PHY. So, I am wondering what is happening.

A: This is intended to be a basic reference of the ideas captures in the bullets. But the third sub-bullet says MAC related additional frame are TBD. So, we do give that right to the MAC group to decide whether they want to insert some more frames, and we need it for addressing some of the MAC issues.

C: But even the 3rd bullet mentions that MAC related part such a sequential NDP still are related to the MAC efficiency. In addition, avoiding any further discussion, this could be put into a joint session.

A: For the future, we will have some allocations enjoying for the coordinated beamforming. I don’t want to distract the members from this question that we are discussing right now. But should I adopt that consideration from a procedure aspect.

**Preliminary Result: 199Y, 24N, 47A (preliminary passed.)**

**Result: 193Y, 24N, 43A (passed.)**

*Reference documents: [*[*24/1542r5*](https://mentor.ieee.org/802.11/dcn/24/11-24-1542-05-00bn-sounding-schemes-for-coordinated-beamforming.pptx)*]. SP result: 60Y/12N/23A.*

* + **Motion 101 (PHY)**

Move to add to the TGbn SFD the following:

* + - The joint NDP based sounding protocol will be as shown below for COBF
			* Sounding happens for one BSS’s STAs at a time
			* NDPA only addresses the in-BSS STAs
			* MAC related additional frames are TBD
			* Joint NDP based feedback will be based on large V-based feedback where the eigen-vectors span the antennas across both Aps



Move: Sameer Vermani Second: Rethna Pulikkoonattu

* + - Discussion:

C: If the STA1 sent the feedback, which AP (the AP1 or the AP2) will receive the feedback?

A: Both the APs will hear this large CSI feedback because it spans the antennas of both the APs.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1542r5*](https://mentor.ieee.org/802.11/dcn/24/11-24-1542-05-00bn-sounding-schemes-for-coordinated-beamforming.pptx)*]. SP result: No objection.*

* + **Motion 102 (PHY)**

Move to add to the TGbn SFD the following:

* + - For joint NDP based sounding, one AP will frequency synchronize to the other for both of its NDP transmissions
			* For both the NDPs, the AP doing the correction brings its frequency within a certain TBD range of the reference AP.

Move: Sameer Vermani Second: Alice J. Chen

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1542r5*](https://mentor.ieee.org/802.11/dcn/24/11-24-1542-05-00bn-sounding-schemes-for-coordinated-beamforming.pptx)*]. SP result: 56Y, 7N, 27A.*

* + **Motion 103 (PHY)**

Move to add to the TGbn SFD the following:

* + - In the UHR sounding process for COBF, for the joint sounding case as well as for the sequential sounding case, the NDP shall always carry the BSS color of the AP which transmitted the NDPA.

Move: Sameer Vermani Second: Juan Fang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1542r5*](https://mentor.ieee.org/802.11/dcn/24/11-24-1542-05-00bn-sounding-schemes-for-coordinated-beamforming.pptx)*]. SP result: No objection.*

* + **Motion 104 (PHY)**

Move to add to the TGbn SFD the following:

* + - ELR Mark symbols will be composed of two 1x OFDM symbols. Each symbol will have a duration of 4μS (3.2μS + GI=0.8μS).

Move: Rethna Pulikkoonattu Second: Wook Bong Lee

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1571r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1571-02-00bn-extended-long-range-elr-mark-symbol-design.pptx)*]. SP result: No objection.*

* + **Motion 105 (PHY)**

Move to add to the TGbn SFD the following:

* + - ELR Mark symbols will have the following tone mapping:
			* The 48 data tones are Q-BPSK mapped
			* The pilots follow BPSK mapping (polarity -1 applied to [1,1,1,-1]).

Move: Rethna Pulikkoonattu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1571r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1571-02-00bn-extended-long-range-elr-mark-symbol-design.pptx)*]. SP result: No objection.*

* + **Motion 106 (PHY)**

Move to add to the TGbn SFD the following:

* + - Adopt the ELR Mark sequence design as described by the matrix H in [24/1571r2](https://mentor.ieee.org/802.11/dcn/24/11-24-1571-02-00bn-extended-long-range-elr-mark-symbol-design.pptx). The detailed design is as described in the slides 8-9 of [24/1571r2](https://mentor.ieee.org/802.11/dcn/24/11-24-1571-02-00bn-extended-long-range-elr-mark-symbol-design.pptx).
			* 𝐻́ = [𝐻 𝐻𝕁; 𝐻 -𝐻𝕁], where 𝕁 is the exchange matrix of size 48x48



Move: Rethna Pulikkoonattu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1571r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1571-02-00bn-extended-long-range-elr-mark-symbol-design.pptx)*]. SP result: No objection.*

* + **Motion 107 (PHY)**

Move to add to the TGbn SFD the following:

* + - The following design for 20MHz 4xLTF for DRU:
			* LTF-122:122 = [ ...

0 0 -1 +1 -1 +1 -1 +1 +1 +1 -1 +1 +1 -1 +1 -1 -1 -1 -1 +1 -1 -1 +1 -1 -1 +1 +1 -1 -1 -1 -1 -1 -1 -1 +1 ...

+1 -1 +1 -1 +1 +1 -1 +1 -1 +1 -1 -1 -1 -1 -1 +1 +1 +1 -1 +1 +1 -1 -1 +1 +1 -1 +1 -1 +1 -1 +1 -1 -1 +1 -1 ...

+1 +1 +1 +1 -1 +1 +1 -1 +1 -1 -1 -1 +1 +1 -1 +1 -1 -1 +1 -1 -1 -1 -1 -1 -1 +1 -1 +1 -1 -1 +1 +1 -1 +1 +1 ...

-1 +1 +1 -1 +1 +1 -1 +1 -1 +1 -1 +1 -1 -1 +1 -1 0 0 0 -1 +1 -1 +1 -1 -1 +1 -1 -1 -1 +1 -1 +1 -1 -1 -1 ...

+1 +1 +1 -1 +1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 +1 +1 -1 +1 -1 -1 -1 -1 +1 +1 +1 +1 +1 -1 -1 +1 -1 -1 +1 ...

+1 -1 -1 -1 -1 +1 -1 +1 +1 -1 -1 +1 +1 +1 -1 -1 +1 -1 -1 -1 -1 +1 -1 +1 +1 -1 -1 +1 -1 +1 +1 -1 +1 +1 -1 ...

+1 +1 -1 +1 +1 -1 +1 -1 +1 -1 -1 +1 +1 -1 -1 -1 -1 +1 +1 +1 -1 -1 -1 -1 +1 -1 -1 -1 +1 +1 +1 -1 +1 0 0 ];

Move: Rethna Pulikkoonattu Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/15*](https://mentor.ieee.org/802.11/dcn/24/11-24-1567-00-00bn-ltf-design-for-dru.pptx)*67]. SP result: 59Y, 13 N, 21A.*

* + **Motion 108 (PHY)**

Move to add to the TGbn SFD the following:

* + - The following design for 80MHz 4xLTF for DRU



Move: Rethna Pulikkoonattu Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/15*](https://mentor.ieee.org/802.11/dcn/24/11-24-1567-00-00bn-ltf-design-for-dru.pptx)*67]. SP result: 74Y 8N, 30A.*

* + **Motion 109 (PHY)**

Move to add to the TGbn SFD the following:

* + - The 40MHz DBW 4xLTF sequence design for DRU is the following.
			* LTF-244:244=[-1 1 -1 -1 -1 1 -1 -1 1 1 1 -1 1 1 1 1 1 1 1 -1 -1 1 1 -1 1 -1 -1 1 1 -1 -1 1 -1 1 -1 1 1 -1 1 1 1 1 -1 -1 1 -1 -1 1 1 1 -1 -1 -1 -1 -1 1 1 1 1 -1 1 -1 -1 1 -1 1 -1 1 -1 1 1 1 1 1 1 -1 1 -1 -1 1 -1 -1 -1 -1 1 -1 -1 -1 1 -1 -1 1 -1 -1 -1 -1 -1 1 -1 1 -1 1 -1 1 1 -1 -1 -1 1 1 -1 -1 1 1 -1 -1 1 -1 1 -1 1 -1 1 1 1 1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 1 1 1 1 1 1 1 -1 -1 1 -1 -1 1 -1 -1 -1 -1 1 1 -1 -1 1 -1 1 -1 1 -1 -1 1 -1 1 1 1 1 1 1 1 1 -1 -1 1 -1 -1 1 -1 1 1 -1 1 1 1 1 1 -1 1 1 1 -1 1 -1 1 1 -1 -1 -1 -1 1 -1 -1 1 -1 1 1 1 -1 -1 -1 -1 1 -1 -1 1 1 -1 1 1 1 1 1 1 1 1 1 -1 1 1 1 1 -1 -1 1 -1 1 -1 1 -1 0 0 0 0 0 -1 -1 -1 -1 1 -1 1 -1 -1 1 -1 1 1 -1 -1 1 1 -1 1 1 1 -1 1 1 -1 1 1 -1 -1 -1 -1 1 -1 -1 -1 -1 -1 1 1 -1 1 1 1 -1 -1 -1 -1 -1 -1 -1 -1 1 -1 -1 1 -1 1 1 1 -1 1 -1 1 -1 -1 -1 -1 1 -1 1 1 -1 1 1 1 -1 -1 -1 -1 -1 1 1 -1 1 1 1 1 -1 -1 -1 1 1 1 1 -1 -1 1 -1 -1 -1 -1 1 -1 1 -1 -1 1 -1 -1 -1 -1 -1 1 -1 1 -1 1 1 1 -1 -1 1 -1 1 1 -1 -1 -1 1 -1 1 -1 1 -1 -1 -1 1 1 1 -1 -1 -1 -1 1 1 1 -1 1 -1 1 1 1 -1 -1 -1 1 1 1 1 -1 -1 1 1 -1 1 -1 -1 1 1 -1 1 -1 -1 -1 1 1 1 -1 1 1 -1 1 -1 1 -1 -1 1 1 1 1 -1 1 -1 1 1 1 1 -1 -1 -1 -1 -1 1 -1 -1 -1 -1 1 1 1 1 -1 -1 1 1 -1 1 1 1 1 -1 1 -1 1 1 -1 1 1 -1 -1 -1 -1 -1 1 -1 1 1 1 -1 -1 1 -1]

Move: Chenchen Liu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[[*24/1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1567-00-00bn-ltf-design-for-dru.pptx)*901r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1901-00-00bn-dru-ltf-sequence-design-for-40mhz-dbw.pptx)*]. SP result: No objection.*

* + **Motion 110 (PHY)**

Move to add to the TGbn SFD the following:

* + - Pilot values and mapping rules of ELR-SIG and Data symbols in ELR PPDU are the same as that of four RRU52 in DL OFDMA

Move: Shengquan Hu Second: Lin Yang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[[*24/1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1567-00-00bn-ltf-design-for-dru.pptx)*488r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1488-01-00bn-elr-ppdu-transmission-design.pptx)*]. SP result: No objection.*

* + **Motion 111 (PHY)**

Move to add to the TGbn SFD the following:

* + - The pre-UHR portion (the portion up-to and including UHR-SIG) of the COBF PPDU shall be transmitted in a non-beamformed (omni) manner.

Move: Sameer Vermani Second: You-Wei Chen

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[[*24/1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1567-00-00bn-ltf-design-for-dru.pptx)*822r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1822-03-00bn-cobf-design-for-uhr.pptx)*]. SP result: No objection.*

* + **Motion 112 (PHY)**

Move to add to the TGbn SFD the following:

* + - The pre-UHR portion of a COBF PPDU shall have identical content across two APs.

Move: Sameer Vermani Second: Juan Fang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[[*24/1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1567-00-00bn-ltf-design-for-dru.pptx)*822r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1822-03-00bn-cobf-design-for-uhr.pptx)*]. SP result: No objection.*

* + **Motion 113 (PHY)**

Move to add to the TGbn SFD the following:

* + - COBF data transmission shall be indicated in the U-SIG for IEEE802.11bn.

Move: Sameer Vermani Second: Alice J. Chen

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[[*24/1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1567-00-00bn-ltf-design-for-dru.pptx)*822r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1822-03-00bn-cobf-design-for-uhr.pptx)*]. SP result: No objection.*

* + **Motion 114 (PHY)**

Move to add to the TGbn SFD the following:

* + - In a COBF transmission, the maximum number of spatial streams given to one user will be 2.

Move: Sameer Vermani Second: Juan Fang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[[*24/1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1567-00-00bn-ltf-design-for-dru.pptx)*822r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1822-03-00bn-cobf-design-for-uhr.pptx)*]. SP result: No objection.*

* + **Motion 115 (PHY)**

Move to add to the TGbn SFD the following:

* + - For the maximum number of spatial streams supported for reception of sounding NDP in UHR and the maximum total number of streams (across all users) supported for reception in UHR DL MU-MIMO and COBF PPDUs:
			* 4 is mandatory except for a non-AP STA with 20 MHz-Only Limited Capabilities Support subfield equal to 1.
			* 8 is optional for DL MU-MIMO and sounding NDP (Note: More than 4 is not allowed for COBF PPDUs

Move: You-Wei Chen Second: Sameer Vermani

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[[*24/1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1567-00-00bn-ltf-design-for-dru.pptx)*582r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1582-02-00bn-coordinated-sounding-for-cobf.pptx)*]. SP result: No objection.*

* + **Motion 116 (PHY)**

Move to add to the TGbn SFD the following:

* + - The COBF sequential sounding support to be conditional mandatory if the device supports COBF.

Move: You-Wei Chen Second: Sameer Vermani

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[[*24/1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1567-00-00bn-ltf-design-for-dru.pptx)*582r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1582-02-00bn-coordinated-sounding-for-cobf.pptx)*]. SP result: No objection.*

* + **Motion 117 (PHY)**

Move to add to the TGbn SFD the following:

* + - UHR defines unequal modulation which uses joint LDPC encoding across multiple spatial streams while at least one spatial stream uses a different modulation order compared to the first spatial stream, and is applicable only to non-MU-MIMO beamformed transmissions using 2 to 4 spatial streams in a UHR MU PPDU.

Move: Alice Chen Second: Shengquan Hu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-24/474*](https://mentor.ieee.org/802.11/dcn/24/11-24-0474-03-00bn-uhr-unequal-modulation-pattern-and-new-mcs.pptx)*,* [*11-24/498r4*](https://mentor.ieee.org/802.11/dcn/24/11-24-0498-04-00bn-unequal-modulation-in-mimo-txbf-and-new-mcs-for-11bn.pptx)*,* [*11-24/507*](https://mentor.ieee.org/802.11/dcn/24/11-24-0507-02-00bn-ueqm-further-details.pptx)*]. SP result: No objection.*

* + **Motion 118 (PHY)**

Move to add to the TGbn SFD the following:

* + - For sequential NDP based sounding, one AP will frequency synchronize to the other for both of its NDP transmissions
		- For both its NDPs, the AP doing the correction brings its frequency within a certain TBD range of the reference AP.

Move: Sameer Vermani Second: Rethna Pulikkoonattu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-24/1542r5*](https://mentor.ieee.org/802.11/dcn/24/11-24-1542-05-00bn-sounding-schemes-for-coordinated-beamforming.pptx)*]. SP result: No objection.*

(Note: Motion number 119 was intentionally blank.)

* + **Motion 120 (MAC)**

Move to add to the TGbn SFD the following:

* + - A UHR AP shall indicate to another AP its capability to respond in a TB PPDU or not

Move: Sanket Kalamkar Second: George Cherian

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*23/1895*](https://mentor.ieee.org/802.11/dcn/23/11-23-1895-02-00bn-c-tdma-frame-sequence.pptx)*,* [*24/0423*](https://mentor.ieee.org/802.11/dcn/24/11-24-0423-00-00bn-nav-rules-in-c-tdma.pptx)*,* [*24/1016*](https://mentor.ieee.org/802.11/dcn/24/11-24-1016-02-00bn-c-tdma-follow-up-additional-details-on-framing-sequence.pptx)*,* [*24/1017*](https://mentor.ieee.org/802.11/dcn/24/11-24-1017-00-00bn-mechanism-for-txop-return-in-c-tdma.pptx)*,* [*24/1225*](https://mentor.ieee.org/802.11/dcn/24/11-24-1225-00-00bn-initial-control-frames-in-c-tdma.pptx)*]. SP result: 120(Y)/33(N)/44(A).*

* + **Motion 121 (MAC)**

Move to add to the TGbn SFD the following:

* + - As part of the C-TDMA procedure, a sharing AP may solicit a poll response in a TB PPDU from another AP only if the other AP has indicated support for responding via a TB PPDU

Move: Sanket Kalamkar Second: Abhishek Patil

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*23/1895*](https://mentor.ieee.org/802.11/dcn/23/11-23-1895-02-00bn-c-tdma-frame-sequence.pptx)*,* [*24/0423*](https://mentor.ieee.org/802.11/dcn/24/11-24-0423-00-00bn-nav-rules-in-c-tdma.pptx)*,* [*24/1016*](https://mentor.ieee.org/802.11/dcn/24/11-24-1016-02-00bn-c-tdma-follow-up-additional-details-on-framing-sequence.pptx)*,* [*24/1017*](https://mentor.ieee.org/802.11/dcn/24/11-24-1017-00-00bn-mechanism-for-txop-return-in-c-tdma.pptx)*,* [*24/1225*](https://mentor.ieee.org/802.11/dcn/24/11-24-1225-00-00bn-initial-control-frames-in-c-tdma.pptx)*]. SP result: 137(Y)/21(N)/42(A).*

* + **Motion 122 (MAC)**

Move to add to the TGbn SFD the following:

* + - If a UHR STA (UHR non-AP STA or UHR Mobile AP) operates with the power save mode where the STA transitions from a lower capability mode to a higher capability mode upon reception of an initial control frame (that we call power save mode DPS), then its associated peer UHR STA shall include an intermediate FCS, if needed by the STA, in the initial control frame that it transmits to the STA.
			* Note: intermediate FCS may not be needed, for instance, if the STA requires no padding.

Move: Sherief Helwa Second: Abhishek Patil

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-23/1873*](https://mentor.ieee.org/802.11/dcn/23/11-23-1873-01-00bn-post-fcs-mac-padding.pptx)*,* [*11- 23/1875*](https://mentor.ieee.org/802.11/dcn/23/11-23-1875-01-00bn-power-save-proposal-for-non-ap-mobile-ap.pptx)*,* [*11- 23/1965*](https://mentor.ieee.org/802.11/dcn/23/11-23-1965-02-00bn-dynamic-power-save-follow-up.pptx)*,* [*11- 23/2003*](https://mentor.ieee.org/802.11/dcn/23/11-23-2003-01-00bn-client-power-save.pptx)*,* [*11-24/544*](https://mentor.ieee.org/802.11/dcn/24/11-24-0544-01-00bn-power-save-protocols-for-uhr-follow-up.pptx)*,* [*11-24/1129*](https://mentor.ieee.org/802.11/dcn/24/11-24-1129-01-00bn-discussion-on-intermediate-fcs-signaling.pptx)*,* [*11-24/1227*](https://mentor.ieee.org/802.11/dcn/24/11-24-1227-01-00bn-some-usage-of-intermediate-fcs.pptx)*,* [*11-24/1246*](https://mentor.ieee.org/802.11/dcn/24/11-24-1246-00-00bn-low-power-listening-mode-for-clients-follow-up.pptx)*,* [*11-24/1256*](https://mentor.ieee.org/802.11/dcn/24/11-24-1256-00-00bn-the-padding-after-intermediate-fcs.pptx)*]. SP result: 129Y / 21N / 58A.*

* + **Motion 123 (MAC)**

Move to add to the TGbn SFD the following:

* + - TGbn improves EDCA to reduce tail access delay of Low Latency traffic in multi-BSS dense scenarios in presence of best effort traffic
			* The solution to improve EDCA is distributed
			* The impact on legacy device has to be balanced
			* Low Latency traffic is treated as AC\_VO traffic. Other cases are TBD

Move: Dmitry Akhmetov Second: Peshal Nayak

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-24/114r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-0114-01-00bn-thoughts-on-power-control-for-csr.pptx)*,* [*11-23/2126r0*](https://mentor.ieee.org/802.11/dcn/23/11-23-2126-00-00bn-low-latency-channel-access-follow-up.pptx)*,* [*11-23/1065r0*](https://mentor.ieee.org/802.11/dcn/23/11-23-1065-00-0uhr-low-latency-channel-access.pptx)*,* [*11-24/0467r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-0467-01-00bn-hip-edca-follow-up-legacy-impact.pptx) *and* [*11-24/0840r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-0840-00-00bn-hip-edca-proposal.pptx)*,* [*24/0864r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-0864-01-00bn-edca-enhancement-for-low-latency-traffic.pptx)*,* [*24/733r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-0733-01-00bn-considerations-for-low-latency-application-support-in-next-generation-wlans.pptx)*]. SP result:152Y, 39N, 36A.*

* + **Motion 124 (MAC)**

Move to add to the TGbn SFD the following:

* + - An NPCA STA shall indicate the following to its peer NPCA STA
			* NPCA switching delay
			* time it needs to switch from the BSS Primary channel to the NPCA Primary channel
			* NPCA switch back delay
			* time it needs to switch from the NPCA Primary channel to the BSS Primary channel
			* Delay values range between 0 and 256 us with a 4 us resolution

Move: Gaurang Naik Second: Liwen Chu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-24/1218r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1218-01-00bn-npca-next-level-discussions.pptx)*,* [*11-24/1155r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1155-00-00bn-further-discussions-on-npca.pptx)*,* [*11-24/1260r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1260-01-00bn-further-considerations-on-npca.pptxhttps%3A/mentor.ieee.org/802.11/dcn/24/11-24-1260-01-00bn-further-considerations-on-npca.pptx)*,* [*11-24/1104r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1104-03-00bn-some-details-on-npca.pptx)*,* [*23/1913r2*](https://mentor.ieee.org/802.11/dcn/23/11-23-1913-02-00bn-secondary-channel-access-operation.pptx)*]. SP result: No objection.*

* + **Motion 125 (MAC)**

Move to add to the TGbn SFD the following:

* + - An NPCA STA shall initiate frame exchange on the NPCA Primary channel with an NPCA Initial Control Frame in the non-HT PPDU or non-HT duplicate PPDU format using a rate of 6 Mb/s, 12 Mb/s, or 24 Mb/s
			* Details on NPCA ICF are TBD

Move: Gaurang Naik Second: Insun Jang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-24/1218r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1218-01-00bn-npca-next-level-discussions.pptx)*,* [*11-24/1155r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1155-00-00bn-further-discussions-on-npca.pptx)*,* [*11-24/1260r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1260-01-00bn-further-considerations-on-npca.pptxhttps%3A/mentor.ieee.org/802.11/dcn/24/11-24-1260-01-00bn-further-considerations-on-npca.pptx)*,* [*11-24/1104r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1104-03-00bn-some-details-on-npca.pptx)*,* [*23/1913r2*](https://mentor.ieee.org/802.11/dcn/23/11-23-1913-02-00bn-secondary-channel-access-operation.pptx)*]. SP result:148Y/12N/50A.*

* + **Motion 126 (MAC)**

Move to add to the TGbn SFD the following:

* + - An NPCA STA shall initiate a TXOP on the NPCA Primary channel following the rules defined in 10.23.2.2 (EDCA backoff procedure) and 10.23.2.4 (Obtaining an EDCA TXOP) with the following exception:
			* Every time the STA switches to the NPCA Primary channel, it shall initialize CW\_NPCA[AC] to TBD value and pick a new backoff counter (BO\_NPCA) randomly between 0 and CW\_NPCA[AC]. QSRC\_NPCA[AC] shall be set to 0.
			* NOTE – Baseline EDCA procedure is followed on the BSS Primary channel. The values of CW\_NPCA and BO\_NPCA are discarded by the NPCA STA when it switches back to the BSS Primary channel.

Move: Gaurang Naik Second: George Cherian

* + - Discussion:

C: The clause 10.23.2.2 and the following one regarding channel access, what will be the energy detection threshold or is it will be the same as primary?

A: Those subclauses actually d now talk about the energy detection threshold.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-24/1218r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1218-01-00bn-npca-next-level-discussions.pptx)*,* [*11-24/1155r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1155-00-00bn-further-discussions-on-npca.pptx)*,* [*11-24/1260r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1260-01-00bn-further-considerations-on-npca.pptxhttps%3A/mentor.ieee.org/802.11/dcn/24/11-24-1260-01-00bn-further-considerations-on-npca.pptx)*,* [*11-24/1104r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1104-03-00bn-some-details-on-npca.pptx)*,* [*24/0426r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-0426-00-00bn-edca-for-non-primary-channel-access.pptx)*]. SP result: No objection.*

* + **Motion 127 (MAC)**

Move to add to the TGbn SFD the following:

* + - After an NPCA STA has gained the right to initiate a TXOP on the NPCA Primary channel, it can transmit on a set of channels that:
			* Includes the NPCA Primary channel, and
			* are within the AP’s BSS bandwidth, and
			* do not include the channels in the bandwidth occupied by the OBSS traffic that caused the NPCA STA to switch from the BSS primary channel to the NPCA primary channel, and
			* do not include the channels that are indicated as punctured in the Disabled Subchannel Bitmap subfield in the EHT Operation element,
			* It is TBD whether a frame that does not solicit TB PPDUs can puncture 20 MHz subchannels not indicated as punctured in the Disabled Subchannel Bitmap subfield of the EHT Operation element

Move: Gaurang Naik Second: Sindhu Verma

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-24/1218r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1218-01-00bn-npca-next-level-discussions.pptx)*,* [*11-24/1155r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1155-00-00bn-further-discussions-on-npca.pptx)*,* [*11-24/1260r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1260-01-00bn-further-considerations-on-npca.pptxhttps%3A/mentor.ieee.org/802.11/dcn/24/11-24-1260-01-00bn-further-considerations-on-npca.pptx)*]. SP result: No objection.*

* + **Motion 128 (MAC)**

Move to add to the TGbn SFD the following:

* + - When transmitting a Trigger frame on the NPCA Primary channel, the NPCA AP shall signal the RU index considering the NPCA Primary channel as the reference primary channel
			* The Trigger frame shall explicitly indicate that it is transmitted via the NPCA Primary channel (details TBD)

Move: Gaurang Naik Second: Shawn Kim

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-24/1218r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1218-01-00bn-npca-next-level-discussions.pptx)*,* [*11-24/1155r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1155-00-00bn-further-discussions-on-npca.pptx)*,* [*24/1093r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1093-00-00bn-special-scenarios-in-non-primary-channel-access.pptx)*,* [*11-24/1260r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1260-01-00bn-further-considerations-on-npca.pptxhttps%3A/mentor.ieee.org/802.11/dcn/24/11-24-1260-01-00bn-further-considerations-on-npca.pptx)*,* [*24/1104r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1104-03-00bn-some-details-on-npca.pptx)*,* [*24/1842r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1842-01-00bn-consideration-on-cascading-channel-switching-for-npca.pptx)*]. SP result: No objection.*

* + **Motion 129 (MAC)**

Move to add to the TGbn SFD the following:

* + - TGbn defines a mode of operation in NPCA where the NPCA non-AP does not use untriggered UL transmissions on the NPCA primary channel
			* This mode can be enabled/disabled by the AP
			* Whether the mode is for all associated non-APs or per non-AP is TBD
			* TBD whether MU EDCA parameters mechanism is used for this or not

Move: Gaurang Naik Second: Xiangxin Gu

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-24/1218r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1218-01-00bn-npca-next-level-discussions.pptx)*,* [*11-24/1155r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1155-00-00bn-further-discussions-on-npca.pptx)*,* [*24/1093r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1093-00-00bn-special-scenarios-in-non-primary-channel-access.pptx)*,* [*24/1842r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1842-01-00bn-consideration-on-cascading-channel-switching-for-npca.pptx)*,* [*24/1842r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1842-01-00bn-consideration-on-cascading-channel-switching-for-npca.pptx)*]. SP result: No objection.*

* + **Motion 130 (MAC)**

Move to add to the TGbn SFD the following:

* + - An AP that is capable of Non-Primary Channel Access (NPCA) announces at most one NPCA Primary channel
			* NPCA Primary channel is in AP's BSS operating channel width
			* NPCA Primary channel is not a punctured 20 MHz subchannel (as indicated in EHT Operation element)
			* Details on signaling is TBD

Move: DongJu Cha Second: Guarang Naik

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*23/1913*](https://mentor.ieee.org/802.11/dcn/23/11-23-1913-02-00bn-secondary-channel-access-operation.pptx)*,* [*23/2005*](https://mentor.ieee.org/802.11/dcn/23/11-23-2005-01-00bn-non-primary-channel-access-npca.pptx)*,* [*23/2023*](https://mentor.ieee.org/802.11/dcn/23/11-23-2023-01-00bn-further-discussion-on-non-primary-channel-access.pptx)*,* [*24/0070*](https://mentor.ieee.org/802.11/dcn/24/11-24-0070-02-00bn-some-details-about-non-primary-channel-access.pptx)*,* [*24/0495*](https://mentor.ieee.org/802.11/dcn/24/11-24-0495-00-00bn-non-primary-channel-access-npca-follow-up.pptx)*,* [*24/0538*](https://mentor.ieee.org/802.11/dcn/24/11-24-0538-01-00bn-sp-based-non-primary-channel-access.pptx)*,* [*24/1104*](https://mentor.ieee.org/802.11/dcn/24/11-24-1104-03-00bn-some-details-on-npca.pptx)*,* [*24/1115*](https://mentor.ieee.org/802.11/dcn/24/11-24-1115-01-00bn-channel-switching-rules-for-npca.pptx)*,* [*24/1155*](https://mentor.ieee.org/802.11/dcn/24/11-24-1155-00-00bn-further-discussions-on-npca.pptx)*,* [*24/1218*](https://mentor.ieee.org/802.11/dcn/24/11-24-1218-01-00bn-npca-next-level-discussions.pptx)*]. SP result:109Y, 10N, 54A.*

* + **Motion 131 (MAC)**

Move to add to the TGbn SFD the following:

* + - All the APs in a multiple BSSID set that enable NPCA announce the same NPCA primary channel

Move: Liwen Chu Second: Guarang Naik

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/0858r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-0858-00-00bn-npca-and-virtual-aps.pptx)*]. SP result: No objection.*

* + **Motion 132 (MAC)**

Move to add to the TGbn SFD the following:

* + - When an NPCA STA switches to the NPCA Primary channel, it shall not initiate a transmission to its peer NPCA STA until the peer STA’s switching delay has elapsed since TBD switch start time

Move: Liwen Chu Second: Guarang Naik

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1222r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1222-01-00bn-npca-follow-up.pptx)*,* [*24/1218r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1218-01-00bn-npca-next-level-discussions.pptx)*,* [*23/1913r2*](https://mentor.ieee.org/802.11/dcn/23/11-23-1913-02-00bn-secondary-channel-access-operation.pptx)*]. SP result: No objection.*

* + **Motion 133 (MAC)**

Move to add to the TGbn SFD the following:

* + - An AP that enables NPCA announces the minimum duration threshold of the BSS primary channel busyness because of OBSS activity for switching to NPCA primary channel
			* If the duration of the OBSS activity that makes the primary channel busy is smaller than the duration threshold, the NPCA STAs (AP and non-AP) do not switch to the NPCA primary channel.

Move: Liwen Chu Second: Vishnu Ratnam

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1222r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1222-01-00bn-npca-follow-up.pptx)*,* [*24/1218r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1218-01-00bn-npca-next-level-discussions.pptx)*,* [*24/1104r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1104-03-00bn-some-details-on-npca.pptx)*,* [*11-24/1115r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1115-01-00bn-channel-switching-rules-for-npca.pptx)*]. SP result: No objection.*

* + **Motion 134 (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 TBD MHz, where TBD = 40 MHz or 80 MHz

Move: Liwen Chu Second: Shawn Kim

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1563r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1563-02-00bn-npca-follow-up.pptx)*]. SP result: No objection.*

* + **Motion 135 (MAC)**

Move to add to the TGbn SFD the following:

* + - The sharing AP, that transmits a Trigger frame as part of a transmission sequence in a M-AP coordinated transmission scheme, identifies the shared AP via an AP ID carried in the AID12 field of the User Info field of the frame
			* Note: the name of "sharing AP" and "shared AP" are TBD
			* Note: M-AP coordinated transmission schemes are C-SR, COBF and C-TDMA

Move: Jay Yang Second: Giovanni Chisci

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*23/1837r2*](https://mentor.ieee.org/802.11/dcn/23/11-23-1837-02-00bn-map-group-set-up-operation-discussion.pptx)*,* [*24/1389r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1389-00-00bn-coordinated-spatial-reuse-design-details.pptx)*,* [*24/1217r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1217-02-00bn-multi-ap-coordination-setup-scheme.pptx)*,* [*24/842r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-0842-00-00bn-multi-ap-set-configuration-for-c-tdma.pptx)*,* [*24/843r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-0843-00-00bn-some-details-on-txop-sharing-in-c-tdma.pptx)*,* [*24/1016r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-1016-02-00bn-c-tdma-follow-up-additional-details-on-framing-sequence.pptx)*,* [*24/1017*](https://mentor.ieee.org/802.11/dcn/24/11-24-1017-00-00bn-mechanism-for-txop-return-in-c-tdma.pptx)*,* [*23/1895*](https://mentor.ieee.org/802.11/dcn/23/11-23-1895-02-00bn-c-tdma-frame-sequence.pptx)*,* [*24/0423*](https://mentor.ieee.org/802.11/dcn/24/11-24-0423-00-00bn-nav-rules-in-c-tdma.pptx)*,* [*24/1225*](https://mentor.ieee.org/802.11/dcn/24/11-24-1225-00-00bn-initial-control-frames-in-c-tdma.pptx)*,* [*24/1220*](https://mentor.ieee.org/802.11/dcn/24/11-24-1220-00-00bn-a-framework-for-coordinated-access-points.pptx)*]. SP result:110Y, 13N, 25A.*

* + **Motion 136 (MAC)**

Move to add to the TGbn SFD the following:

* + - TGbn defines a mechanism that allows a STA to provide an update to its peer STA of specific operational Tx/Rx parameters using management frame exchanges (which parameters is TBD, focusing generally on local constraints (for example, coexistence constraints))

Move: Sherief Helwa Second: Abdel K. Ajami

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*23/1934*](https://mentor.ieee.org/802.11/dcn/23/11-23-1934-00-00bn-in-device-interference-mitigation-follow-up.pptx)*,* [*23/1964*](https://mentor.ieee.org/802.11/dcn/23/11-23-1964-01-00bn-coexistence-protocols-for-uhr.pptx)*,* [*23/2002*](https://mentor.ieee.org/802.11/dcn/23/11-23-2002-02-00bn-in-device-coexistence-and-interference-follow-up.pptx)*,* [*23/2078*](https://mentor.ieee.org/802.11/dcn/23/11-23-2078-05-00bn-coex-enhancement-for-xr-use-cases.pptx)*]. SP result: No objection.*

* + **Motion 137 (MAC)**

Move to add to the TGbn SFD the following:

* + - The parameter update mechanism, done using management frame exchanges, allows a non-AP STA to transition in/out of a limited operation/capability mode
			* A STA in limited operation/capability mode changes one or more of the following TX/RX parameters: Maximum PPDU duration, Maximum MCS, use of LDPC, use of HT-immediate BlockAck, Disabled Subchannel bitmap, etc.
			* Optional/mandatory TBD

Move: Sherief Helwa Second: Abdel K. Ajami

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*23/1934*](https://mentor.ieee.org/802.11/dcn/23/11-23-1934-00-00bn-in-device-interference-mitigation-follow-up.pptx)*,* [*23/1964*](https://mentor.ieee.org/802.11/dcn/23/11-23-1964-01-00bn-coexistence-protocols-for-uhr.pptx)*,* [*23/2002*](https://mentor.ieee.org/802.11/dcn/23/11-23-2002-02-00bn-in-device-coexistence-and-interference-follow-up.pptx)*,* [*23/2078*](https://mentor.ieee.org/802.11/dcn/23/11-23-2078-05-00bn-coex-enhancement-for-xr-use-cases.pptx)*]. SP result: 112Y / 8N / 67A.*

* + **Motion 138 (MAC)**

Move to add to the TGbn SFD the following:

* + - TGbn uses Multi-STA BA for Initial Control Response frame (ICR) for DL and UL, at least when carrying the unavailability information

Move: Liwen Chu Second: Qi Wang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/857r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-0857-01-00bn-icr-consideration.pptx)*,* [*24/494r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-0494-02-00bn-in-device-coexistence-follow-up.pptx)*,* [*24/1226r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1226-00-00bn-icf-icr-design.pptx)*,* [*24/1558r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1558-01-00bn-in-device-coexistence-follow-up.pptx)*,* [*24/1504*](https://mentor.ieee.org/802.11/dcn/24/11-24-1504-00-00bn-considerations-on-aperiodic-in-device-coexistence.pptx)*,* [*24/543*](https://mentor.ieee.org/802.11/dcn/24/11-24-0543-01-00bn-coexistence-protocols-for-uhr-follow-up.pptx)*,* [*24/834*](https://mentor.ieee.org/802.11/dcn/24/11-24-0834-01-00bn-some-details-on-in-device-coexistence.pptx)*,* [*24/1490*](https://mentor.ieee.org/802.11/dcn/24/11-24-1490-01-00bn-more-consideration-of-icr-crf-for-in-device-coexistence.pptx)*]. SP result:108Y, 13N, 42A.*

* + **Motion 139 (MAC)**

Move to add to the TGbn SFD the following:

* + - From an AP for soliciting response in TB PPDU format from one or more scheduled STAs to allow a Multi-STA BA frame to be included in the TB PPDU sent by the UHR scheduled STAs in response, when carrying unavailability information
			* BSRP Trigger frame follows baseline rules for the solicited TB PPDU

Move: Liwen Chu Second: Abdel K. Ajami

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/494r2*](https://mentor.ieee.org/802.11/dcn/24/11-24-0494-02-00bn-in-device-coexistence-follow-up.pptx)*,* [*24/1226r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1226-00-00bn-icf-icr-design.pptx)*,* [*24/1558r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1558-01-00bn-in-device-coexistence-follow-up.pptx)*,* [*24/1562r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1562-00-00bn-in-device-coexistence-follow-up.pptx)*]. SP result:138Y, 7N, 52A.*

* + **Motion 140 (MAC)**

Move to add to the TGbn SFD the following:

* + - TGbn defines the following fields for unavailability indication in M-STA BA frames:
			* an Unavailability Target Start Time field defined as the TSF time at which the STA becomes unavailable (range and resolution TBD, expectation is to use a portion of the TSF)
			* an Unavailability Duration field defined as the time during which the STA is unavailable (field may be not present or set to an unknown value)

Move: Sherief Helwa Second: Peshal Nayak

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/543*](https://mentor.ieee.org/802.11/dcn/24/11-24-0543-01-00bn-coexistence-protocols-for-uhr-follow-up.pptx)*,* [*24/857*](https://mentor.ieee.org/802.11/dcn/24/11-24-0857-01-00bn-icr-consideration.pptx)*,* [*24/1226*](https://mentor.ieee.org/802.11/dcn/24/11-24-1226-00-00bn-icf-icr-design.pptx)*,* [*24/1247*](https://mentor.ieee.org/802.11/dcn/24/11-24-1247-00-00bn-icf-icr-design-for-coex.pptx)*,* [*24/1558*](https://mentor.ieee.org/802.11/dcn/24/11-24-1558-02-00bn-in-device-coexistence-follow-up.pptx)*,* [*24/1848*](https://mentor.ieee.org/802.11/dcn/24/11-24-1848-00-00bn-frame-exchange-sequences-for-in-device-coexistence.pptx)*]. SP result:121Y / 9N / 45A.*

* + **Motion 141 (MAC)**

Move to add to the TGbn SFD the following:

* + - 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

Move: Sherief Helwa Second: Abdel K. Ajami

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/543*](https://mentor.ieee.org/802.11/dcn/24/11-24-0543-01-00bn-coexistence-protocols-for-uhr-follow-up.pptx)*,* [*24/857*](https://mentor.ieee.org/802.11/dcn/24/11-24-0857-01-00bn-icr-consideration.pptx)*,* [*24/1226*](https://mentor.ieee.org/802.11/dcn/24/11-24-1226-00-00bn-icf-icr-design.pptx)*,* [*24/1247*](https://mentor.ieee.org/802.11/dcn/24/11-24-1247-00-00bn-icf-icr-design-for-coex.pptx)*,* [*24/1558*](https://mentor.ieee.org/802.11/dcn/24/11-24-1558-02-00bn-in-device-coexistence-follow-up.pptx)*,* [*24/1848*](https://mentor.ieee.org/802.11/dcn/24/11-24-1848-00-00bn-frame-exchange-sequences-for-in-device-coexistence.pptx)*,* [*24/834*](https://mentor.ieee.org/802.11/dcn/24/11-24-0834-01-00bn-some-details-on-in-device-coexistence.pptx)*,* [*24/1490*](https://mentor.ieee.org/802.11/dcn/24/11-24-1490-01-00bn-more-consideration-of-icr-crf-for-in-device-coexistence.pptx)*]. SP result:114Y / 17N / 63A.*

* + **Motion 142 (MAC)**

Move to add to the TGbn SFD the following:

* + - TGbn defines the following:
			* Unavailability Target Start Time is indicated using 9 bits with a granularity of 64us
			* Unavailability Duration is indicated using 9 bits with a granularity of 64us

Move: Sherief Helwa Second: Abdel K. Ajami

* + - Discussion:

C: It is the calculated the maximum length of such a selection of PPDU and granularity. Is there any evaluation of that? Because it is quite a short time.

A: It should be at 32 milliseconds. We envision 32 milliseconds is more than enough. But I am also curios if you have like any specific use case in mind that exceeds that amount.

C: If the first STA know that it is incoming SP of another AP and such SP will work the STA’s TXOP, it could be more than several number of TXOP. We know the maximum TXOP time could be four milliseconds and we modify two or three, four TXOPs, that is about tens of milliseconds. But this duration will not be covered by current design.

A: You mentioned multiples of duration, which is typically around 4 milliseconds, so we are taking about that this current configuration can support multiple TXOP duration.

C: It is a clarification question. Are those reference contributions evaluate this length?

A: Maybe I can double check, but I think the document 1558 should highlight that.

 (Counting vote was requested by the commentor.)

**Preliminary Result: 134Y, 7N, 63A (preliminary passed.)**

**Result: 131Y, 7N, 60A (passed.)**

*Reference documents: [*[*24/543*](https://mentor.ieee.org/802.11/dcn/24/11-24-0543-01-00bn-coexistence-protocols-for-uhr-follow-up.pptx)*,* [*24/857*](https://mentor.ieee.org/802.11/dcn/24/11-24-0857-01-00bn-icr-consideration.pptx)*,* [*24/1226*](https://mentor.ieee.org/802.11/dcn/24/11-24-1226-00-00bn-icf-icr-design.pptx)*,* [*24/1247*](https://mentor.ieee.org/802.11/dcn/24/11-24-1247-00-00bn-icf-icr-design-for-coex.pptx)*,* [*24/1558*](https://mentor.ieee.org/802.11/dcn/24/11-24-1558-02-00bn-in-device-coexistence-follow-up.pptx)*,* [*24/1848*](https://mentor.ieee.org/802.11/dcn/24/11-24-1848-00-00bn-frame-exchange-sequences-for-in-device-coexistence.pptx)*]. SP result: No objection.*

* Recessed at 15:30.

# November 14th, Thursday (16:00-18:00 PST) - 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) & Alfred Asterjadhi (aasterja@qti.qualcomm.com)
		- PHY: Sigurd Schelstraete (sschelstraete@maxlinear.com), Tianyu Wu (tianyu@apple.com), and Dongguk Lim (dongguk.lim@lge.com)
		- MAC: Xiaofei Wang (xiaofei.wang@interdigital.com), and Srinivas Kandala (srini.k1@samsung.com), Jeongki Kim (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); 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 ([11-24/1667r1](https://mentor.ieee.org/802.11/dcn/24/11-24-1667-14-00bn-tgbn-nov-2024-meeting-agenda.pptx)4.)
* Agenda
	+ Chair reviewed proposed agenda found in [11-24/1667r1](https://mentor.ieee.org/802.11/dcn/24/11-24-1667-14-00bn-tgbn-nov-2024-meeting-agenda.pptx)4.
	+ Discussion:

C: If time permits, I would like to run a motion on NPCA directly. It was presented, but there was no time to run the SP. We have discussed with many colleagues and hopefully there are no objection.

(Chair added the SP regarding NPCA on the agenda.)

* + The modified agenda was approved with unanimous consent.
* Motions
	+ The following motions were conducted according to the motion list ([11-24/0171r](https://mentor.ieee.org/802.11/dcn/24/11-24-0171-20-00bn-tgbn-motions-list-part-1.pptx)20).

(continued from the previous joint session)

* + **Motion 143 (MAC)**

Move to add to the TGbn SFD the following:

* + - The AP maintains up to one dynamic unavailability report per STA
		- And the most recent dynamic unavailability report is the valid one

Move: Sindhu Verma Second: Qi Wang

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-24/1559r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1559-01-00bn-in-device-coexistence-next-steps.pptx)*]. SP result:95Y, 23N, 41A.*

* + **Motion 144 (MAC)**

Move to add to the TGbn SFD the following:

* + - The event that triggers switching to the NPCA primary channel shall be
			* OBSS Control frame exchange (e.g., (MU-)RTS/CTS) or
			* OBSS HE/EHT/UHR PPDU
			* Note: Other conditions TBD

Move: Laurent Cariou Second: Gaurang Naik

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/0495r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-0495-00-00bn-non-primary-channel-access-npca-follow-up.pptx)*,* [*11-24/1218r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1218-01-00bn-npca-next-level-discussions.pptx)*]. SP result: No objections.*

* + **Motion 145 (MAC)**

Move to add to the TGbn SFD the following:

* + - The NPCA operation shall use the same EDCA parameters ((MU) EDCA Parameter Set, EPCS EDCA Parameters), on both the BSS primary channel and the NPCA primary channel.

Move: Laurent Cariou Second: Gaurang Naik

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/0495r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-0495-00-00bn-non-primary-channel-access-npca-follow-up.pptx)*,* [*11-24/1218r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1218-01-00bn-npca-next-level-discussions.pptx)*]. SP result: No objections.*

* + **Motion 146 (MAC)**

Move to add to the TGbn SFD the following:

* + - A non-AP STA that is a TXOP responder can indicate in a response frame 1) for how long it will be available, if known and/or 2) whether it will be unavailable after a specific point in time and, if known, for how long
			* The response frame is a multi-STA BlockAck frame sent by the non-AP STA in response to the initial control frame or to MPDUs that solicit an immediate response

Move: Laurent Cariou Second: Matthew Fischer

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*23-2002*](https://mentor.ieee.org/802.11/dcn/23/11-23-2002-02-00bn-in-device-coexistence-and-interference-follow-up.pptx)*,* [*23/816*](https://mentor.ieee.org/802.11/dcn/23/11-23-0816-01-0uhr-enhancements-for-latency-sensitive-traffic-and-in-device-coexistence.pptx)*,* [*24/834*](https://mentor.ieee.org/802.11/dcn/24/11-24-0834-01-00bn-some-details-on-in-device-coexistence.pptx)*,* [*24/1490*](https://mentor.ieee.org/802.11/dcn/24/11-24-1490-01-00bn-more-consideration-of-icr-crf-for-in-device-coexistence.pptx)*,* [*23/1964*](https://mentor.ieee.org/802.11/dcn/23/11-23-1964-01-00bn-coexistence-protocols-for-uhr.pptx)*,* [*24/543*](https://mentor.ieee.org/802.11/dcn/24/11-24-0543-01-00bn-coexistence-protocols-for-uhr-follow-up.pptx)*,* [*24/1558*](https://mentor.ieee.org/802.11/dcn/24/11-24-1558-02-00bn-in-device-coexistence-follow-up.pptx)*,* [*24/0094*](https://mentor.ieee.org/802.11/dcn/24/11-24-0094-00-00bn-probe-before-talk-and-unsolicited-unavailability-announcement-for-co-ex-management.pptx)*]. SP result: No objections.*

* + **Motion 147 (MAC)**

Move to add to the TGbn SFD the following:

* + - APs that intend to participate in M-AP coordination can use management frames to advertise/discover the capabilities and/or parameters of individual schemes.

Move: Giovanni Chisci Second: George Cherian

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents:[*[*23/1871*](https://mentor.ieee.org/802.11/dcn/23/11-23-1871-05-00bn-m-ap-coordinated-transmission-framework.pptx)*,* [*23/1912*](https://mentor.ieee.org/802.11/dcn/23/11-23-1912-02-00bn-coordinated-tdma-procedure.pptx)*,* [*24/0842*](https://mentor.ieee.org/802.11/dcn/24/11-24-0842-00-00bn-multi-ap-set-configuration-for-c-tdma.pptx)*,* [*24/1217*](https://mentor.ieee.org/802.11/dcn/24/11-24-1217-02-00bn-multi-ap-coordination-setup-scheme.pptx)*,* [*24/1220*](https://mentor.ieee.org/802.11/dcn/24/11-24-1220-00-00bn-a-framework-for-coordinated-access-points.pptx)*,* [*24/1849r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1849-00-00bn-management-of-the-established-multi-ap-coordination.pptx)*]. SP result:137Y, 4N, 15A.*

* + **Motion 148 (MAC)**

Move to add to the TGbn SFD the following:

* + - APs that discovered each other and want to establish agreement(s) for M-AP coordination scheme(s), can use individually addressed management frames to establish the agreement(s) and negotiate parameters
			* Note: The management frame can be a Public Action and/or new Action frames, and so on.

Move: Giovanni Chisci Second: GeonHwan Kim

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents:[*[*23/1871*](https://mentor.ieee.org/802.11/dcn/23/11-23-1871-05-00bn-m-ap-coordinated-transmission-framework.pptx)*,* [*23/1912*](https://mentor.ieee.org/802.11/dcn/23/11-23-1912-02-00bn-coordinated-tdma-procedure.pptx)*,* [*24/0842*](https://mentor.ieee.org/802.11/dcn/24/11-24-0842-00-00bn-multi-ap-set-configuration-for-c-tdma.pptx)*,* [*24/1217*](https://mentor.ieee.org/802.11/dcn/24/11-24-1217-02-00bn-multi-ap-coordination-setup-scheme.pptx)*,* [*24/1220*](https://mentor.ieee.org/802.11/dcn/24/11-24-1220-00-00bn-a-framework-for-coordinated-access-points.pptx)*,* [*24/1849r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1849-00-00bn-management-of-the-established-multi-ap-coordination.pptx)*]. SP result: No objection.*

* + **Motion 149 (MAC)**

Move to add to the TGbn SFD the following:

* + - If an AP extends the protection of the rTWT schedule of another AP, following negotiation or through other means, then:
			* The AP shall ensure its TXOP ends before the start time of the corresponding OBSS rTWT SP(s)
			* The AP, if it has at least one associated STA that is capable of rTWT, shall advertise in the beacon frames it transmits the OBSS rTWT schedule so that its associated STAs supporting rTWT follow the baseline rTWT rules for the OBSS rTWT schedule.

Move: Giovanni Chisci Second: Binita Gupta

* + - Discussion:

C: I think that the second bullet says if all the associated STA with the capable of R-TWT should not contend the wireless medium or also show stop before the start time of the R-TWT SP of the OBSS. It is a kind of over protection. We need more time to discuss on the behavior of the STA on the far side.

A: I think it is fine as is. We had already several motions. and I checked already it works well.

(Recorded vote was requested by the mover.)

**Preliminary Result: 161Y, 21N, 58A (preliminary passed.)**

**Result: 156Y, 20N, 55A (passed.)**

*Reference documents: [*[*22/1530*](https://mentor.ieee.org/802.11/dcn/22/11-22-1530-01-0uhr-multi-ap-coordination-for-next-generation-wi-fi.pptx)*,* [*23/0250*](https://mentor.ieee.org/802.11/dcn/23/11-23-0250-00-0uhr-ap-coordination-with-r-twt.pptx)*,* [*23/860*](https://mentor.ieee.org/802.11/dcn/23/11-23-0860-00-0uhr-further-thoughts-on-coordinated-twt.pptx)*,* [*23/1871*](https://mentor.ieee.org/802.11/dcn/23/11-23-1871-05-00bn-m-ap-coordinated-transmission-framework.pptx)*,* [*23/1887*](https://mentor.ieee.org/802.11/dcn/23/11-23-1887-01-00bn-coordinated-medium-access-for-multi-ap-deployments.pptx)*,* [*23/1932*](https://mentor.ieee.org/802.11/dcn/23/11-23-1932-03-00bn-further-considerations-on-coordinated-twt.pptx)*,* [*23/1962*](https://mentor.ieee.org/802.11/dcn/23/11-23-1962-01-00bn-gain-analysis-for-coordinated-ap-transmissions.pptx)*,* [*23/2022*](https://mentor.ieee.org/802.11/dcn/23/11-23-2022-01-00bn-r-twt-for-multi-ap-follow-up.pptx)*,* [*24/0407*](https://mentor.ieee.org/802.11/dcn/24/11-24-0407-00-00bn-r-twt-multi-ap-coordination-follow-up.pptx)*,* [*24/0678*](https://mentor.ieee.org/802.11/dcn/24/11-24-0678-02-00bn-coordinated-r-twt-follow-up.pptx)*,* [*22/1556*](https://mentor.ieee.org/802.11/dcn/22/11-22-1556-01-0uhr-multi-ap-coordination-for-low-latency-traffic-delivery.pptx)*,* [*22/1899*](https://mentor.ieee.org/802.11/dcn/22/11-22-1899-00-0uhr-multi-ap-operation-for-low-latency-traffic-delivery-follow-up.pptx)*,* [*23/0046*](https://mentor.ieee.org/802.11/dcn/23/11-23-0046-02-0uhr-multi-ap-coordination-for-low-latency-traffic-delivery-usage-scenarios-and-potential-features.pptx)*,* [*23/1916*](https://mentor.ieee.org/802.11/dcn/23/11-23-1916-01-00bn-r-twt-coordination-in-multi-bss.pptx)*,* [*24/0160*](https://mentor.ieee.org/802.11/dcn/24/11-24-0160-01-00bn-r-twt-coordination-negotiation-in-multi-bss.pptx)*,* [*24/0161*](https://mentor.ieee.org/802.11/dcn/24/11-24-0161-01-00bn-r-twt-announcement-in-multi-bss.pptx)*,* [*24/1220*](https://mentor.ieee.org/802.11/dcn/24/11-24-1220-00-00bn-a-framework-for-coordinated-access-points.pptx)*,* [*23/0226*](https://mentor.ieee.org/802.11/dcn/23/11-23-0226-02-0uhr-coordination-of-r-twt-for-multi-ap-deployment.pptx)*]. SP result:89Y, 29N, 43A.*

* + **Motion 150 (MAC)**

Move to add to the TGbn SFD the following:

* + - 11bn defines or reuses/updates existing mechanism for a UHR AP to report long term (periodic) unavailability
			* Applies when non-AP STA(s) support the mechanism

Move: Hongwon Lee Second: Sherief Helwa

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1108*](https://mentor.ieee.org/802.11/dcn/24/11-24-1108-02-00bn-periodic-idc-signaling-for-mobile-ap.pptx)*,* [*23/1964*](https://mentor.ieee.org/802.11/dcn/23/11-23-1964-01-00bn-coexistence-protocols-for-uhr.pptx)*,* [*23/2040*](https://mentor.ieee.org/802.11/dcn/23/11-23-2040-01-00bn-enabling-ap-power-save-follow-up.pptx)*,* [*23/2078*](https://mentor.ieee.org/802.11/dcn/23/11-23-2078-05-00bn-coex-enhancement-for-xr-use-cases.pptx)*,* [*24/2002*](https://mentor.ieee.org/802.11/dcn/24/11-24-2002-00-00bp-low-complexity-backscatter-amp-sta.pptx)*]. SP result: 99Y, 22N, 57A.*

* + **Motion 151 (MAC)**

Move to add to the TGbn SFD the following:

* + - 11bn allows Multi-STA BA to carry one or more types of feedback (e.g., unavailability) information
			* How to include feedback information is TBD.

Move: Hongwon Lee Second: Sindhu Verma

* + - Discussion:

C: I think there is a contradiction to the previous motion, but it is up to a group.

A: This motion is taking about the different kinds of multiple control feedback information that can be carried in the multi-STA BA. So, it is not contradiction.

C: If there are much feedback there, while we use multi-STA BlockAck cannot create a new frame, what is the reason why you want to use some feedback something new?

Why did you consider extending multi-STA Block Ack at the just created?

A: It is because of the flexibility.

C: What do you mean types? You have one example on availability. That is one type but how about other types?

A: For example, we had a lot of discussion related to the information. It can be like a low latency information.

C: If you’ve got something in a motion, that is to be decided. The members cannot really decide whether that motion is binding or not it. It is a typical behavior in 802.11 not have TBD in a motion. It is fine in a SP, but this is motion.

A: We have several motions that we have TBDs.

C: Motions cannot promise future action, a TBD is future action It has been done in the past. It was wrong.

C: If we had a motion that was inserting draft text, I’m pretty sure that we have had TBD inside of drafts for years, and nobody is really objected. Putting a TBD into the draft text is extremely common. I don’t see a problem here. Let’s just go forward.

(Chair conducted the counting vote due to some discussions.)

**Preliminary Result: 144Y, 10N, 35A (preliminary passed.)**

**Result: 139Y, 10N, 35A (passed.)**

*Reference documents: [*[*24/834*](https://mentor.ieee.org/802.11/dcn/24/11-24-0834-01-00bn-some-details-on-in-device-coexistence.pptx)*,* [*24/1490*](https://mentor.ieee.org/802.11/dcn/24/11-24-1490-01-00bn-more-consideration-of-icr-crf-for-in-device-coexistence.pptx)*,* [*24/543*](https://mentor.ieee.org/802.11/dcn/24/11-24-0543-01-00bn-coexistence-protocols-for-uhr-follow-up.pptx)*,* [*24/1558*](https://mentor.ieee.org/802.11/dcn/24/11-24-1558-02-00bn-in-device-coexistence-follow-up.pptx)*,* [*24/1247*](https://mentor.ieee.org/802.11/dcn/24/11-24-1247-00-00bn-icf-icr-design-for-coex.pptx)*]. SP result: No objection.*

* + **Motion 152 (MAC)**

Move to add to the TGbn SFD the following:

* + - An individually addressed BSRP Trigger, used as an ICF, can indicate whether the responding PPDU is a non-HT (duplicate) PPDU and contains a multi-STA BA?
			* The indication (TBD whether reserved value or a reserved bit) is carried in the Common Info field of the BSRP Trigger frame

Move: Abdel K. Ajami Second: Sherief Helwa

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/1550*](https://mentor.ieee.org/802.11/dcn/24/11-24-1550-01-00bn-in-device-coexistence-follow-up.pptx)*,* [*24/1558*](https://mentor.ieee.org/802.11/dcn/24/11-24-1558-02-00bn-in-device-coexistence-follow-up.pptx)*]. SP result: No objection.*

* + **Motion 153 (MAC)**

Move to add to the TGbn SFD the following:

* + - A non-AP STA can request its associated AP to initiate TXOPs/frame exchanges with the STA with an initial control frame that enables the non-AP STA to include unavailability feedback in the initial response frame.

Move: Laurent Cariou Second: Qi Wang

* + - Discussion:

C: Is it for some asynchronous or immediate request? and availability request or something like that? It’s not a long-term step that is proposed here.

A: For the dynamic communication in the ICF/ICR, that can be done in every TXOP. You need to request in the long-term manner to your AP to always start every TXOP. That’s the long-term request response to enable the mode that will allow you to indicate dynamically every device.

(Counting vote was requested.)

**Preliminary Result: 144Y, 12N, 49A (preliminary passed.)**

**Result: 140Y, 12N, 48A (passed.)**

*Reference documents: [*[*23/2002*](https://mentor.ieee.org/802.11/dcn/23/11-23-2002-02-00bn-in-device-coexistence-and-interference-follow-up.pptx)*,* [*24/094r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-0094-00-00bn-probe-before-talk-and-unsolicited-unavailability-announcement-for-co-ex-management.pptx)*,* [*23/1964*](https://mentor.ieee.org/802.11/dcn/23/11-23-1964-01-00bn-coexistence-protocols-for-uhr.pptx)*,* [*24/543*](https://mentor.ieee.org/802.11/dcn/24/11-24-0543-01-00bn-coexistence-protocols-for-uhr-follow-up.pptx)*,* [*24/1558*](https://mentor.ieee.org/802.11/dcn/24/11-24-1558-02-00bn-in-device-coexistence-follow-up.pptx)*,* [*24/834*](https://mentor.ieee.org/802.11/dcn/24/11-24-0834-01-00bn-some-details-on-in-device-coexistence.pptx)*,* [*24/1490*](https://mentor.ieee.org/802.11/dcn/24/11-24-1490-01-00bn-more-consideration-of-icr-crf-for-in-device-coexistence.pptx)*,* [*24/1504r0*](https://mentor.ieee.org/802.11/dcn/24/11-24-1504-00-00bn-considerations-on-aperiodic-in-device-coexistence.pptx)*]. SP result: 101Y, 20N, 35A.*

* + **Motion 154 (MAC)**

Move to add to the TGbn SFD the following:

* + - If a UHR non-AP MLD operates in the eMLSR mode, then its associated UHR AP MLD, that supports transmitting intermediate FCS, shall include an intermediate FCS, if needed by the non-AP MLD, in every Initial Control Frames for eMLSR transmitted to the non-AP MLD through its affiliated APs on the eMLSR links
			* Mandatory/optional support for transmitting intermediate FCS is TBD
			* The field that carries the Intermediate FCS shall be designed to be ignored by legacy STAs if they are scheduled in the same initial control frame
			* Note: intermediate FCS may not be needed, for instance, if the STA requires no padding.

Move: Laurent Cariou Second: Sherief Helwa

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*23/1873*](https://mentor.ieee.org/802.11/dcn/23/11-23-1873-01-00bn-post-fcs-mac-padding.pptx)*,* [*24/1227r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1227-01-00bn-some-usage-of-intermediate-fcs.pptx)*]. SP result: No objection.*

* + **Motion 155 (MAC)**

Move to add to the TGbn SFD the following:

* + - Periodic unavailability announcements from a non-AP STA are performed in UHR by enhancing the P2P TWT mechanism.

Move: Laurent Cariou Second: Peshal Nayak

* + - Discussion:

C: Could you clarify what is P2P TWT mechanism? Do you mean the individual TWT or something else?

A: It is a mechanism like the exists currently in current aseline that is how it is called that …

**Result: Approved with unanimous consent.**

*Reference documents: [*[*23/2002*](https://mentor.ieee.org/802.11/dcn/23/11-23-2002-02-00bn-in-device-coexistence-and-interference-follow-up.pptx)*,* [*23/2078*](https://mentor.ieee.org/802.11/dcn/23/11-23-2078-05-00bn-coex-enhancement-for-xr-use-cases.pptx)*,* [*23/1964*](https://mentor.ieee.org/802.11/dcn/23/11-23-1964-01-00bn-coexistence-protocols-for-uhr.pptx)*,* [*23/2040*](https://mentor.ieee.org/802.11/dcn/23/11-23-2040-01-00bn-enabling-ap-power-save-follow-up.pptx)*,* [*24/1558*](https://mentor.ieee.org/802.11/dcn/24/11-24-1558-02-00bn-in-device-coexistence-follow-up.pptx)*,* [*24/834*](https://mentor.ieee.org/802.11/dcn/24/11-24-0834-01-00bn-some-details-on-in-device-coexistence.pptx)*]. SP result: No objection.*

* + **Motion 156 (MAC)**

Move to add to the TGbn SFD the following:

* + - A TXOP owner AP announces its intention of sharing a portion of the time resource of its TXOP for C-TDMA operation, in an Initial Control frame (exact ICF and name TBD) sent at the beginning of the TXOP. The frame polls AP(s) with whom it may share the TXOP to determine their interest
			* A TXOP owner AP that intends to share its TXOP is referred to as a sharing AP.
			* A candidate AP identified (polled) in the Initial Control frame is referred to as a polled AP.
			* The Duration field of the frame is set to the length of time required to transmit the solicited response frame plus one SIFS.
			* Whether or not the sharing AP is mandated to send the Initial Control frame that announces that intention is TBD.

Move: Sanket Kalamkar Second: Brian Hart

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-23/1895*](https://mentor.ieee.org/802.11/dcn/23/11-23-1895-02-00bn-c-tdma-frame-sequence.pptx)*,* [*11-23/1912*](https://mentor.ieee.org/802.11/dcn/23/11-23-1912-02-00bn-coordinated-tdma-procedure.pptx)*,* [*11-24/227*](https://mentor.ieee.org/802.11/dcn/24/11-24-0227-01-00bn-txop-protection-in-c-tdma.pptx)*,* [*11-24/411*](https://mentor.ieee.org/802.11/dcn/24/11-24-0411-00-00bn-txop-return-in-c-tdma.pptx)*,* [*11-24/0423*](https://mentor.ieee.org/802.11/dcn/24/11-24-0423-00-00bn-nav-rules-in-c-tdma.pptx)*,* [*11-24/842*](https://mentor.ieee.org/802.11/dcn/24/11-24-0842-00-00bn-multi-ap-set-configuration-for-c-tdma.pptx)*,* [*11-24/843*](https://mentor.ieee.org/802.11/dcn/24/11-24-0843-00-00bn-some-details-on-txop-sharing-in-c-tdma.pptx)*,* [*11-24/1016*](https://mentor.ieee.org/802.11/dcn/24/11-24-1016-02-00bn-c-tdma-follow-up-additional-details-on-framing-sequence.pptx)*,* [*11-24/1017*](https://mentor.ieee.org/802.11/dcn/24/11-24-1017-00-00bn-mechanism-for-txop-return-in-c-tdma.pptx)*,* [*11-24/1225*](https://mentor.ieee.org/802.11/dcn/24/11-24-1225-00-00bn-initial-control-frames-in-c-tdma.pptx)*]. SP result:134Y/29N/49A.*

* + **Motion 157 (MAC)**

Move to add to the TGbn SFD the following:

* + - As part of the C-TDMA procedure, a candidate AP that is polled by the sharing AP shall provide, via a response,
			* Its intention not to participate in TXOP sharing during the current TXOP.
			* Note: If the sharing AP doesn’t receive a response from a polled AP, it assumes that the polled AP is not interested in TXOP sharing during the current TXOP.
			* Its intention to participate in TXOP sharing during the current TXOP.
			* Signaling details (including traffic indication) are TBD.

Move: Sanket Kalamkar Second: Brian Hart

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-23/1895*](https://mentor.ieee.org/802.11/dcn/23/11-23-1895-02-00bn-c-tdma-frame-sequence.pptx)*,* [*11-23/1912*](https://mentor.ieee.org/802.11/dcn/23/11-23-1912-02-00bn-coordinated-tdma-procedure.pptx)*,* [*11-24/227*](https://mentor.ieee.org/802.11/dcn/24/11-24-0227-01-00bn-txop-protection-in-c-tdma.pptx)*,* [*11-24/411*](https://mentor.ieee.org/802.11/dcn/24/11-24-0411-00-00bn-txop-return-in-c-tdma.pptx)*,* [*11-24/0423*](https://mentor.ieee.org/802.11/dcn/24/11-24-0423-00-00bn-nav-rules-in-c-tdma.pptx)*,* [*11-24/842*](https://mentor.ieee.org/802.11/dcn/24/11-24-0842-00-00bn-multi-ap-set-configuration-for-c-tdma.pptx)*,* [*11-24/843*](https://mentor.ieee.org/802.11/dcn/24/11-24-0843-00-00bn-some-details-on-txop-sharing-in-c-tdma.pptx)*,* [*11-24/1016*](https://mentor.ieee.org/802.11/dcn/24/11-24-1016-02-00bn-c-tdma-follow-up-additional-details-on-framing-sequence.pptx)*,* [*11-24/1017*](https://mentor.ieee.org/802.11/dcn/24/11-24-1017-00-00bn-mechanism-for-txop-return-in-c-tdma.pptx)*,* [*11-24/1225*](https://mentor.ieee.org/802.11/dcn/24/11-24-1225-00-00bn-initial-control-frames-in-c-tdma.pptx)*]. SP result:134Y/29N/49A.*

* + **Motion 158 (MAC)**

Move to add to the TGbn SFD the following:

* + - Define a mechanism so that a non-AP STA as a TXOP holder can indicate in a BSRP as the ICF frame 1) for how long it will be available, if known and/or 2) whether it will be unavailable after a specific point in time and, if known, for how long
			* There are conditions under which such a BSRP can be sent, and those conditions are TBD.

Move: Sherief Helwa Second: Stephen Palm

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-24/1550*](https://mentor.ieee.org/802.11/dcn/24/11-24-1550-01-00bn-in-device-coexistence-follow-up.pptx)*,* [*11-24/1558*](https://mentor.ieee.org/802.11/dcn/24/11-24-1558-02-00bn-in-device-coexistence-follow-up.pptx)*,* [*24/834*](https://mentor.ieee.org/802.11/dcn/24/11-24-0834-01-00bn-some-details-on-in-device-coexistence.pptx)*,* [*24/1490*](https://mentor.ieee.org/802.11/dcn/24/11-24-1490-01-00bn-more-consideration-of-icr-crf-for-in-device-coexistence.pptx)*]. SP result: No objection.*

* + **Motion 159 (MAC)**

Move to add to the TGbn SFD the following:

* + - As part of the C-TDMA procedure, to share a time portion of its TXOP, a sharing AP shall send a MU-RTS TXS Trigger frame to another non-collocated AP.
			* The Allocation Duration field of the frame indicates the duration of that time portion.
			* The Duration field of the frame is set to the time required to transmit the solicited response frame plus one SIFS.

Move: GeonHwan Kim Second: Sanket Kalamkar

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-23/261*](https://mentor.ieee.org/802.11/dcn/23/11-23-0261-00-0uhr-tdma-for-wifi-8.pptx)*,* [*11-23/1895*](https://mentor.ieee.org/802.11/dcn/23/11-23-1895-02-00bn-c-tdma-frame-sequence.pptx)*,* [*11-23/1910*](https://mentor.ieee.org/802.11/dcn/23/11-23-1910-01-00bn-coordinated-tdma-follow-up.pptx)*,* [*11-23/1912*](https://mentor.ieee.org/802.11/dcn/23/11-23-1912-02-00bn-coordinated-tdma-procedure.pptx)*,* [*11-24/0227*](https://mentor.ieee.org/802.11/dcn/24/11-24-0227-01-00bn-txop-protection-in-c-tdma.pptx)*,* [*11-24/0382*](https://mentor.ieee.org/802.11/dcn/24/11-24-0382-00-00bn-further-considerations-on-coordinated-tdma.pptx)*,* [*11-24/0411*](https://mentor.ieee.org/802.11/dcn/24/11-24-0411-00-00bn-txop-return-in-c-tdma.pptx)*,* [*11-24/0423*](https://mentor.ieee.org/802.11/dcn/24/11-24-0423-00-00bn-nav-rules-in-c-tdma.pptx)*,* [*11-24/0719*](https://mentor.ieee.org/802.11/dcn/24/11-24-0719-00-00bn-map-set-operation.pptx)*,* [*11-24/0842*](https://mentor.ieee.org/802.11/dcn/24/11-24-0842-00-00bn-multi-ap-set-configuration-for-c-tdma.pptx)*,* [*11-24/0843*](https://mentor.ieee.org/802.11/dcn/24/11-24-0843-00-00bn-some-details-on-txop-sharing-in-c-tdma.pptx)*,* [*11-24/1016*](https://mentor.ieee.org/802.11/dcn/24/11-24-1016-02-00bn-c-tdma-follow-up-additional-details-on-framing-sequence.pptx)*,* [*11-24/1017*](https://mentor.ieee.org/802.11/dcn/24/11-24-1017-00-00bn-mechanism-for-txop-return-in-c-tdma.pptx)*,* [*11-24/1250*](https://mentor.ieee.org/802.11/dcn/24/11-24-1250-00-00bn-discussion-on-txop-allocation-in-c-tdma.pptx)*,* [*11-24/1225*](https://mentor.ieee.org/802.11/dcn/24/11-24-1225-00-00bn-initial-control-frames-in-c-tdma.pptx)*,* [*11-23/1327r0*](https://mentor.ieee.org/802.11/dcn/23/11-23-1327-00-0uhr-considerations-on-return-txop-between-aps.pptx)*,* [*11-23/1846*](https://mentor.ieee.org/802.11/dcn/23/11-23-1846-01-00bn-protection-of-extended-txop-sharing.pptx)*,* [*11-24/375*](https://mentor.ieee.org/802.11/dcn/24/11-24-0375-01-00bn-nav-protection-for-c-tdma.pptx)*,* [*11-24/1701*](https://mentor.ieee.org/802.11/dcn/24/11-24-1701-00-00bn-nav-protection-for-c-tdma-follow-up.pptx)*]. SP result: No objection.*

* + **Motion 160 (MAC)**

Move to add to the TGbn SFD the following:

* + - As part of the C-TDMA procedure, TGbn defines a mechanism for an AP, that received a time portion of a TXOP from a sharing AP, to return the remainder of the allocated time (if any) back to the sharing AP.
			* Signaling details and the condition(s) for TXOP return are TBD.

Move: GeonHwan Kim Second: Sanket Kalamkar

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-23/1895*](https://mentor.ieee.org/802.11/dcn/23/11-23-1895-02-00bn-c-tdma-frame-sequence.pptx)*,* [*11-23/1910*](https://mentor.ieee.org/802.11/dcn/23/11-23-1910-01-00bn-coordinated-tdma-follow-up.pptx)*,* [*11-23/1912*](https://mentor.ieee.org/802.11/dcn/23/11-23-1912-02-00bn-coordinated-tdma-procedure.pptx)*,* [*11-24/0227*](https://mentor.ieee.org/802.11/dcn/24/11-24-0227-01-00bn-txop-protection-in-c-tdma.pptx)*,* [*11-24/0382*](https://mentor.ieee.org/802.11/dcn/24/11-24-0382-00-00bn-further-considerations-on-coordinated-tdma.pptx)*,* [*11-24/0411*](https://mentor.ieee.org/802.11/dcn/24/11-24-0411-00-00bn-txop-return-in-c-tdma.pptx)*,* [*11-24/0423*](https://mentor.ieee.org/802.11/dcn/24/11-24-0423-00-00bn-nav-rules-in-c-tdma.pptx)*,* [*11-24/0719*](https://mentor.ieee.org/802.11/dcn/24/11-24-0719-00-00bn-map-set-operation.pptx)*,* [*11-24/0842*](https://mentor.ieee.org/802.11/dcn/24/11-24-0842-00-00bn-multi-ap-set-configuration-for-c-tdma.pptx)*,* [*11-24/0843*](https://mentor.ieee.org/802.11/dcn/24/11-24-0843-00-00bn-some-details-on-txop-sharing-in-c-tdma.pptx)*,* [*11-24/1016*](https://mentor.ieee.org/802.11/dcn/24/11-24-1016-02-00bn-c-tdma-follow-up-additional-details-on-framing-sequence.pptx)*,* [*11-24/1017*](https://mentor.ieee.org/802.11/dcn/24/11-24-1017-00-00bn-mechanism-for-txop-return-in-c-tdma.pptx)*,* [*11-24/1250*](https://mentor.ieee.org/802.11/dcn/24/11-24-1250-00-00bn-discussion-on-txop-allocation-in-c-tdma.pptx)*,* [*11-24/1225*](https://mentor.ieee.org/802.11/dcn/24/11-24-1225-00-00bn-initial-control-frames-in-c-tdma.pptx)*,* [*11-23/1327r0*](https://mentor.ieee.org/802.11/dcn/23/11-23-1327-00-0uhr-considerations-on-return-txop-between-aps.pptx)*,* [*11-23/1846*](https://mentor.ieee.org/802.11/dcn/23/11-23-1846-01-00bn-protection-of-extended-txop-sharing.pptx)*,* [*11-24/375*](https://mentor.ieee.org/802.11/dcn/24/11-24-0375-01-00bn-nav-protection-for-c-tdma.pptx)*,* [*11-24/1701*](https://mentor.ieee.org/802.11/dcn/24/11-24-1701-00-00bn-nav-protection-for-c-tdma-follow-up.pptx) *, [11-24/0941](https://mentor.ieee.org/802.11/dcn/23/11-23-0941-01-00bf-lb272-reporting-cid-resolution-part2.docx)]. SP result: No objection.*

* + **Motion 161 (MAC)**

Move to add to the TGbn SFD the following:

* + - Scheduled periodic power save on AP side is performed in UHR using Broadcast TWT with TWT ID=0 with Responder PM=1 as described in 26.8.3.2 (Rules for TWT scheduling AP)

Move: Sherief Helwa Second: Neel Krishnan

* + - Discussion:

C: Is this for the fixed APs or just for the mobile AP?

A: Any types of APs are assumed.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-23/1934*](https://mentor.ieee.org/802.11/dcn/23/11-23-1934-00-00bn-in-device-interference-mitigation-follow-up.pptx)*,* [*11-23/1964*](https://mentor.ieee.org/802.11/dcn/23/11-23-1964-01-00bn-coexistence-protocols-for-uhr.pptx)*,* [*11-23/2002*](https://mentor.ieee.org/802.11/dcn/23/11-23-2002-02-00bn-in-device-coexistence-and-interference-follow-up.pptx)*,* [*11-23/2040*](https://mentor.ieee.org/802.11/dcn/23/11-23-2040-01-00bn-enabling-ap-power-save-follow-up.pptx)*,* [*11-23/2078*](https://mentor.ieee.org/802.11/dcn/23/11-23-2078-05-00bn-coex-enhancement-for-xr-use-cases.pptx)*,* [*11-24/0509*](https://mentor.ieee.org/802.11/dcn/24/11-24-0509-01-00bn-thoughts-on-in-device-coexistence-and-p2p-for-11bn.pptx)*,* [*11-24/659*](https://mentor.ieee.org/802.11/dcn/24/11-24-0659-01-00bn-thoughts-on-ap-power-save.pptx)*,* [*11-24/1558*](https://mentor.ieee.org/802.11/dcn/24/11-24-1558-02-00bn-in-device-coexistence-follow-up.pptx)*,* [*11-23/1835*](https://mentor.ieee.org/802.11/dcn/24/11-24-1835-03-00bn-backward-compatible-sounding-for-cobf.pptx)*,* [*11-24/0097*](https://mentor.ieee.org/802.11/dcn/24/11-24-0097-00-00bn-ap-power-management-follow-up.pptx)*,* [*11-24/0813*](https://mentor.ieee.org/802.11/dcn/24/11-24-0813-00-00bn-discussions-on-ap-power-save.pptx)*]. SP result: No objection.*

* + **Motion 162 (MAC)**

Move to add to the TGbn SFD the following:

* + - As part of the seamless roaming procedure, before the request/response exchange requesting the roaming transition from a current AP MLD to a target AP MLD, a roaming preparation procedure can be performed that includes:
			* Transfer or renegotiation of the context to a target AP MLD, and
			* Setting up the link(s) with a target AP MLD.
			* Details on what context can be transferred or renegotiated is TBD

Move: Binita Gupta Second: Peshal Nayak

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*24/0052*](https://mentor.ieee.org/802.11/dcn/24/11-24-0052-00-00bn-seamless-roaming-details.pptx)*,* [*23/1884*](https://mentor.ieee.org/802.11/dcn/23/11-23-1884-02-00bn-seamless-roaming.pptx)*,* [*23/1937*](https://mentor.ieee.org/802.11/dcn/23/11-23-1937-01-00bn-smooth-roaming-follow-up-1.pptx)*,* [*23/1996*](https://mentor.ieee.org/802.11/dcn/23/11-23-1996-00-00bn-improve-roaming-between-mlds.pptx)*,* [*24/830*](https://mentor.ieee.org/802.11/dcn/24/11-24-0830-01-00bn-improve-roaming-between-mlds-follow-up.pptx)*,* [*24/0083*](https://mentor.ieee.org/802.11/dcn/24/11-24-0083-01-00bn-smooth-roaming-follow-up-2.pptx)*,* [*24/0101*](https://mentor.ieee.org/802.11/dcn/24/11-24-0101-03-00bn-mld-roaming.pptx)*,* [*24/0396*](https://mentor.ieee.org/802.11/dcn/24/11-24-0396-02-00bn-seamless-roaming-within-a-mobility-domain-follow-up.pptx)*,* [*24/0412*](https://mentor.ieee.org/802.11/dcn/24/11-24-0412-01-00bn-seamless-roaming-procedure-follow-up.pptx)*,* [*24/0655*](https://mentor.ieee.org/802.11/dcn/24/11-24-0655-00-00bn-thoughts-on-smd-roaming-and-ft-roaming.pptx)*,* [*23/2157*](https://mentor.ieee.org/802.11/dcn/23/11-23-2157-02-00bn-seamless-roaming-within-a-mobility-domain.pptx)*,* [*24/679*](https://mentor.ieee.org/802.11/dcn/24/11-24-0679-04-00bn-thoughts-on-functionality-and-security-architecture-for-uhr-seamless-roaming.pptx)*,* [*24/1425*](https://mentor.ieee.org/802.11/dcn/24/11-24-1425-00-00bn-considerations-for-context-transfer-in-11bn.pptx)*,* [*24/881*](https://mentor.ieee.org/802.11/dcn/24/11-24-0881-00-00bn-improving-stability-during-roaming-process.pptx)*,* [*24/1882*](https://mentor.ieee.org/802.11/dcn/24/11-24-1882-00-00bn-link-setup-for-seamless-roaming.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-00-00bn-seamless-roaming.pptx)*,* [*24/1897*](https://mentor.ieee.org/802.11/dcn/24/11-24-1897-00-00bn-control-frame-protection-keys.pptx)*,* [*24/0349*](https://mentor.ieee.org/802.11/dcn/24/11-24-0349-03-00bn-enhanced-fast-bss-transition.pptx)*,* [*24/0480*](https://mentor.ieee.org/802.11/dcn/24/11-24-0480-00-00bn-details-on-context-transfer-and-data-forwarding-under-ft-protocol.pptx)*]. SP result:187Y, 12N, 28A.*

* + **Motion 163 (MAC)**

Move to add to the TGbn SFD the following:

* + - A non-AP MLD in state 4 can initiate request/response exchange for roaming transition through the current AP MLD or with a target AP MLD

Move: Binita Gupta Second: Jarkko Kneckt

* + - Discussion:

C: I have some concern on this motion. The roaming transition here related to the switching the DS mapping change from the current AP ID to the target AP-MLD. It should be done over the targeted AP-MLD to confirm whether the link is reachable or not. Otherwise, the following the case will exist.

A: We had offline discussion on this. I think there are use cases for both to essentially send the request response through the current AP-MLD or the target AP-MLD. So, there are scenarios when both options are needed.

C: During the discussion in the MAC sessions, when we were on the call, I think the time is not given to the members enough time to vote.

A: Straw polls are for information purpose. But I echo again to the WG leadership regarding the Slido issues. I do that almost every CAC meeting, but I note it.

C: In current FT protocol, there are over the DS reassociation request and the response with the target AP-MLD directly. So, I also check with our implementation them if we change to roaming request response current MLD, there will be some compatibility with the legacy devices. So, I hope you can define it to translate to the current architecture.

C: I do not believe there is any compatibility issues we are discussing new devices in general. I also think there is some spaces and reasons why the STA might want to initiate this with the current AP. I do not support the direction that we restrict only to the target.

C: I am in favor of this motion. We have many submissions showing this operation. This is one of the key fundamental principles for the seamless roaming.

 (Counting vote was requested by the mover.)

**Preliminary Result: 145Y, 64N, 30A (preliminary failed.)**

**Result: 141Y, 64N, 28A (failed.)**

*Reference documents: [*[*24/0398*](https://mentor.ieee.org/802.11/dcn/24/11-24-0398-00-00bn-coordinated-roaming-through-target-ap-mld.pptx)*,* [*24/0052*](https://mentor.ieee.org/802.11/dcn/24/11-24-0052-00-00bn-seamless-roaming-details.pptx)*,* [*23/1884*](https://mentor.ieee.org/802.11/dcn/23/11-23-1884-02-00bn-seamless-roaming.pptx)*,* [*23/1937*](https://mentor.ieee.org/802.11/dcn/23/11-23-1937-01-00bn-smooth-roaming-follow-up-1.pptx)*,* [*23/1996*](https://mentor.ieee.org/802.11/dcn/23/11-23-1996-00-00bn-improve-roaming-between-mlds.pptx)*,* [*24/830*](https://mentor.ieee.org/802.11/dcn/24/11-24-0830-01-00bn-improve-roaming-between-mlds-follow-up.pptx)*,* [*24/0083*](https://mentor.ieee.org/802.11/dcn/24/11-24-0083-01-00bn-smooth-roaming-follow-up-2.pptx)*,* [*24/0101*](https://mentor.ieee.org/802.11/dcn/24/11-24-0101-03-00bn-mld-roaming.pptx)*,* [*24/0396*](https://mentor.ieee.org/802.11/dcn/24/11-24-0396-02-00bn-seamless-roaming-within-a-mobility-domain-follow-up.pptx)*,* [*24/0412*](https://mentor.ieee.org/802.11/dcn/24/11-24-0412-01-00bn-seamless-roaming-procedure-follow-up.pptx)*,* [*24/0655*](https://mentor.ieee.org/802.11/dcn/24/11-24-0655-00-00bn-thoughts-on-smd-roaming-and-ft-roaming.pptx)*,* [*23/2157*](https://mentor.ieee.org/802.11/dcn/23/11-23-2157-02-00bn-seamless-roaming-within-a-mobility-domain.pptx)*,* [*24/679*](https://mentor.ieee.org/802.11/dcn/24/11-24-0679-04-00bn-thoughts-on-functionality-and-security-architecture-for-uhr-seamless-roaming.pptx)*,* [*24/1425*](https://mentor.ieee.org/802.11/dcn/24/11-24-1425-00-00bn-considerations-for-context-transfer-in-11bn.pptx)*,* [*24/1883*](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-00-00bn-seamless-roaming.pptx)*]. SP result:120Y, 35N, 24A.*

* Submissions

* + [11-24/1499r3](https://mentor.ieee.org/802.11/dcn/24/11-24-1499-03-00bn-low-latency-bss-indication.pptx): Low Latency BSS Indication Akira Kishida (NTT)

(Only SP was conducted.)

(Recording SP was requested by the presenter.)

**SP:**

Do you agree to define one of the reserved values of the Access Network Type field in the Access Network Options field in the Interworking element as a low latency BSS?

* + - * Note: The name of the Meaning and Description are TBD.

**Result: 42Y, 79N, 91A**

* + [11-24/0864r1](https://mentor.ieee.org/802.11/dcn/24/11-24-0864-01-00bn-edca-enhancement-for-low-latency-traffic.pptx): EDCA Low Latency Traffic Yonggang Fang (MediaTek)

(Only Q+A session was conducted.)

C: In the slide 8, I am seeing that every time there is a collision of the RTS, no CTS comes back. Is that correct?

A: Yes. If the RTSs collide, there is no CTS.

C: But RTSs are typically very robust. So, there is a significant probability that if one STA is closed and the other is litter far and further away, then the STA of the AP in this case might be able to decode the RTS and then it will send the CTS.

A: We assume that the STA sends the CTS after the RTS.

C: If two different STAs send RTSs to the AP, then two RTS arrive at the AP at the same time. One may be stronger than the other, and it might be decoded. It’s pretty well possible that the AP is able to decode stronger reception. So, the collision, meaning two RTS arriving at the AP at the same time, doesn’t necessarily result in a failure at the AP. AP might still be able to extract an RTS from all this.

A: I am assuming PD based reception of RTS. It cannot be decoded or collided reception. You assume that is the whole entire thing.

C: I agree with your problem statements in the slide 3, but I would like to point out that the reducing the number of collisions are using some methods is to help to reduce the delay. I think it is good. In the slide 5, there is a TBD milliseconds. The transmitter after receiving the CTS response, RTS to the shall suspend the EDCA for TBD milliseconds. How do you detect the TBD milliseconds for the suspension?

A: The station sends out the RTS, and then the receiver responds the CTS. So, they assume that the station will work for getting TXOP. It can follow the PPDU data transmission. We need to provide is that a fair SP mechanism to the other stations. TBD milliseconds allow other stations to have a chance to share this channel access.

C: Do you know the percentage of these "collisions" where the AP would \*not\* be able to decode at least one of them?

A: We assume if it is RTS client so the AP will not be decoded it’s RTS, so they will retry the RTS.

* Straw Polls
	+ **SP:** NPCA

Do you agree that:

* + - * If an NPCA STA receives an OBSS RTS frame in a non-HT duplicate PPDU that does not include the bandwidth signaling TA, the NPCA STA shall not switch to the NPCA Primary channel,
			* If an NPCA STA receives an OBSS RTS frame in a non-HT duplicate PPDU that includes the bandwidth signaling TA and the signaled PPDU bandwidth is 320 MHz, the NPCA STA shall not switch to the NPCA Primary channel,
			* If an NPCA STA receives a CTS frame in a non-HT duplicate PPDU without receiving the soliciting OBSS RTS or MU-RTS frame, the NPCA STA shall not switch to the NPCA Primary channel

Supporting documents: [11-24/1093r3](https://mentor.ieee.org/802.11/dcn/24/11-24-1093-03-00bn-special-scenarios-in-non-primary-channel-access.pptx), [11-24/1115r1](https://mentor.ieee.org/802.11/dcn/24/11-24-1115-01-00bn-channel-switching-rules-for-npca.pptx), [11-24/1878](https://mentor.ieee.org/802.11/dcn/24/11-24-1878-00-00bn-obss-bandwidth-ambiguity-in-npca.pptx), [11-24/1394r1](https://mentor.ieee.org/802.11/dcn/24/11-24-1394-01-00bn-npca-operation-issues.pptx).

* + - * Discussion: None.

**Result: No objection.**

(The SP was proceeded to the motion 164(MAC).)

* + **Motion 164 (MAC)**

Move to add to the TGbn SFD the following:

* + - * If an NPCA STA receives an OBSS RTS frame in a non-HT duplicate PPDU that does not include the bandwidth signaling TA, the NPCA STA shall not switch to the NPCA Primary channel,
			* If an NPCA STA receives an OBSS RTS frame in a non-HT duplicate PPDU that includes the bandwidth signaling TA and the signaled PPDU bandwidth is 320 MHz, the NPCA STA shall not switch to the NPCA Primary channel,
			* If an NPCA STA receives a CTS frame in a non-HT duplicate PPDU without receiving the soliciting OBSS RTS or MU-RTS frame, the NPCA STA shall not switch to the NPCA Primary channel

Move: Shubhodeep Adhikari Second: Seongho Byeon

* + - Discussion: None.

**Result: Approved with unanimous consent.**

*Reference documents: [*[*11-24/1093r3*](https://mentor.ieee.org/802.11/dcn/24/11-24-1093-03-00bn-special-scenarios-in-non-primary-channel-access.pptx)*,* [*11-24/1115r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1115-01-00bn-channel-switching-rules-for-npca.pptx)*,* [*11-24/1878*](https://mentor.ieee.org/802.11/dcn/24/11-24-1878-00-00bn-obss-bandwidth-ambiguity-in-npca.pptx)*,* [*11-24/1394r1*](https://mentor.ieee.org/802.11/dcn/24/11-24-1394-01-00bn-npca-operation-issues.pptx)*]. SP result: No objection.*

* Teleconference Plan
	+ Discussion

C: For the joint motions, could you also share the motion list in advance?

A: The list will be available 10 day prior to the teleconference. If you would like to run a motion on the 19th December, you must inform before the 9th December.

* + The modified schedule was approved.
		- November 18-29 (Monday-Friday) Holiday
		- December 02 (Monday) – Joint 19:00-21:00 ET
		- December 05 (Thursday) – MAC/PHY 10:00-12:00 ET
		- December 9 (Monday) – MAC/PHY 19:00-21:00 ET
		- December 12 (Thursday) – MAC/PHY 10:00-12:00 ET
		- December 16 (Monday) – MAC/PHY 19:00-21:00 ET
		- December 19 (Thursday) - Joint (Motions)\* 10:00-12:00 ET
		- December 23-January 03 (Monday-Friday) Holiday
		- January 06 (Monday) – MAC/PHY 19:00-21:00 ET
		- January 09 (Thursday) – MAC/PHY 10:00-12:00 ET

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

* Goals for January 2025
	+ Discuss technical submissions
	+ Continue populating the TGbn SFD
	+ Deliver TGbn D0.1
* AoB
	+ [11-24/1933r2](https://mentor.ieee.org/802.11/dcn/24/11-24-1933-02-0arc-proposed-response-to-wba-on-implementation-guidelines-for-l4s.docx): Proposed Response to WBA on implementation Guidelines for L4S

Mark Hamilton (Rucks/CommScope)

* Adjourned at 17:37.

**Appendix**

* The record of the voting result for Motion 151

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name / Affiliation** | **Yes** | **No** | **Abs.** | **Note** |
| [NV] Woojin Ahn, KNUT | X |  |  | INVALID VOTE: NON VOTER |
| [PV] Ju Yan Pan, Huawei | X |  |  |  |
| [PV] Riemann Chen, Acer Inc | X |  |  | INVALID VOTE: NON VOTER |
| [PV] Rishabh Roy, Samsung Electronics | X |  |  |  |
| [PV] Toshizo Nogami, Sharp | X |  |  |  |
| [V] Abhishek Chaturvedi, Samsung Electronics | X |  |  |  |
| [V] Abhishek Patil | X |  |  |  |
| [V] Ahmed Mohamed, NXP |  |  | X |  |
| [V] Akira Kishida, NTT | X |  |  |  |
| [V] Al Petrick |  | X |  |  |
| [V] Albert Bredewoud, Broadcom | X |  |  |  |
| [V] Alice Jialing Li Chen | X |  |  |  |
| [V] Anton Karamyshev, self |  |  | X |  |
| [V] Arik Klein, Huawei | X |  |  |  |
| [V] Atsushi Shirakawa | X |  |  |  |
| [V] BIAN Tong, Panasonic |  |  | X |  |
| [V] Bin Tian | X |  |  |  |
| [V] Boon Loong Ng, Samsung Electronics | X |  |  |  |
| [V] Bruce HaoHua Kang, MediaTek Inc. | X |  |  |  |
| [V] Chaoming Luo | X |  |  |  |
| [V] Charlie Pettersson, |  |  | X |  |
| [V] Chung-Ta Ku, Mediatek | X |  |  |  |
| [V] Chunyu Hu |  | X |  |  |
| [V] Clark Carty | X |  |  |  |
| [v] Dana Ciochina Sony | X |  |  |  |
| [V] Daniel Verenzuela | X |  |  |  |
| [V] Denis Bykov, NXP | X |  |  |  |
| [V] Der-Zheng Liu, Realtek |  |  | X |  |
| [V] Dmitry Akhmetov, Intel | X |  |  |  |
| [V] Dong Wei | X |  |  |  |
| [V] Dongju Cha, LGE | X |  |  |  |
| [V] Duncan Ho | X |  |  |  |
| [V] Eugene Baik, Qualcomm | X |  |  |  |
| [V] Eunsung Park LGE | X |  |  |  |
| [V] Evgeny Khorov |  |  | X |  |
| [V] Franics Keshmiri, Huawei | X |  |  |  |
| [V] Frank Chien-Fang Hsu, Mediatek | X |  |  |  |
| [V] Fumihide Goto, DENSO | X |  |  |  |
| [V] GaborB, Mediatek | X |  |  |  |
| [V] Gaius Wee, Panasonic | X |  |  |  |
| [V] Gaurang Naik, Qualcomm Technologies, Inc. | X |  |  |  |
| [V] GeonHwan Kim, LGE | X |  |  |  |
| [V] George Cherian | X |  |  |  |
| [V] George Chih-Chun Kuo |  |  | X |  |
| [V] Giovanni Chisci, Qualcomm | X |  |  |  |
| [V] Hirohiko INOHIZA | X |  |  |  |
| [V] Hiroyuki Motozuka | X |  |  |  |
| [V] Hongwon Lee | X |  |  |  |
| [V] Hui Che, Ruijie | X |  |  |  |
| [V] Huizhao Wang, NXP | X |  |  |  |
| [V] Hyungjin Kim, Broadcom | X |  |  |  |
| [V] Ilya Levitsky, NRU HSE | X |  |  |  |
| [V] Insun Jang | X |  |  |  |
| [V] Ishaque Kadampot, Qualcomm | X |  |  |  |
| [V] Jack Lee, Samsung Electronics | X |  |  |  |
| [V] Jaheon Gu, Samsung Electronics | X |  |  |  |
| [V] Jason Yuchen Guo | X |  |  |  |
| [v] Jay Yang [ZTE] |  | X |  |  |
| [V] John Wullert, Peraton Labs |  |  | X |  |
| [V] Jonghoe Koo, Samsung Electronics | X |  |  |  |
| [V] Joseph Levy, Interdigital |  | X |  |  |
| [V] Jouni Malinen, Qualcomm | X |  |  |  |
| [V] Junghoon Suh, Huawei | X |  |  |  |
| [V] Jungjun Kim, Samsung Electronics | X |  |  |  |
| [V] Karim Nassiri Toussi, BRCM | X |  |  |  |
| [V] Karthik Srinivasa Gopalan, Samsung Electronics |  |  | X |  |
| [V] Kazuto Yano, ATR | X |  |  |  |
| [V] Ke Zhong, Ruijie Networks | X |  |  |  |
| [V] Klaus Doppler, Nokia |  |  | X |  |
| [V] Kosuke Aio, Sony | X |  |  |  |
| [V] Lei Wang, Futurewei/Huawei | X |  |  |  |
| [V] Leo Montreuil, Broadcom | X |  |  |  |
| [V] Li-Hsiang Sun | X |  |  |  |
| [V] Lili Hervieu | X |  |  |  |
| [V] Lin Yang | X |  |  |  |
| [V] Liuming Lu, OPPO | X |  |  |  |
| [v] Luis Gutierrez, Broadcom | X |  |  |  |
| [V] Mahmoud Hasabelnaby, Huawei | X |  |  |  |
| [V] Manasi Ekkundi, Samsung Electronics | X |  |  |  |
| [V] Maolin Zhang, Huawei | X |  |  |  |
| [V] Mark Hamilton (CommScope/Ruckus) | X |  |  |  |
| [V] Martin Eiger, Peraton Labs |  |  | X |  |
| [V] Massinissa Lalam, Sagemcom |  | X |  |  |
| [V] Matthew Fischer | X |  |  |  |
| [V] Mengshi Hu |  |  | X |  |
| [V] Mike Montemurro |  |  | X |  |
| [V] Naveen Kakani | X |  |  |  |
| [V] Neel Krishnan, Apple | X |  |  |  |
| [V] Oded Redlich, Huawei | X |  |  |  |
| [V] Okan Mutgan, Nokia |  |  | X |  |
| [V] Pascal Viger, Canon | X |  |  |  |
| [V] Patrice NEZOU, Canon | X |  |  |  |
| [V] Pei Zhou, TCL |  |  | X |  |
| [V] Po-Kai Huang Intel | X |  |  |  |
| [V] Pooya Monajemi, Apple | X |  |  |  |
| [V] Prabodh Varshney | X |  |  |  |
| [V] Qinglai Liu |  |  | X |  |
| [V] Rainer Strobel, MaxLinear |  |  | X |  |
| [V] Robert Sosack Molex |  |  | X |  |
| [V] Rolf de Vegt | X |  |  |  |
| [V] Ronny Yang-Hung Peng, Mediatek | X |  |  |  |
| [V] Ross Jian Yu Huawei | X |  |  |  |
| [V] Rubayet Shafin, Samsung Electronics | X |  |  |  |
| [V] Rui Yang, InterDigital |  | X |  |  |
| [V] Ryota Yamada |  |  | X |  |
| [V] Ryuichi Hirata | X |  |  |  |
| [V] Salvatore Talarico - Nokia | X |  |  |  |
| [V] Sameer Vermani | X |  |  |  |
| [V] Sang Kim LGE | X |  |  |  |
| [V] Sangho Seo, Broadcom | X |  |  |  |
| [V] Sanket Kalamkar | X |  |  |  |
| [V] Sara Norouzi | X |  |  |  |
| [v] Sean Coffey |  |  | X |  |
| [V] Serhat Erkucuk, Ofinno | X |  |  |  |
| [V] Seungho Choo, Senscomm |  |  | X |  |
| [V] Shawn(Sanghyun) Kim, WILUS Inc. | X |  |  |  |
| [V] Sherief Helwa, Qualcomm Technologies, Inc | X |  |  |  |
| [V] Shuntaro Suzuki, Yamaha |  |  | X |  |
| [V] Sigurd Schelstraete |  |  | X |  |
| [V] Sindhu Verma, Broadcom | X |  |  |  |
| [V] Siukai Mak, Broadcom | X |  |  |  |
| [V] Srinivas Kandala Samsung | X |  |  |  |
| [V] Steve Rodriguez | Cisco |  |  | X |  |
| [V] Steven Qi Wang | X |  |  |  |
| [V] Subharthi Banerjee, NXP | X |  |  |  |
| [V] SunHee Baek LGE | X |  |  |  |
| [V] Takuhiro Sato, Sharp |  |  | X |  |
| [V] Tuncer Baykas, Ofinno |  |  | X |  |
| [V] Vishnu Ratnam, Samsung Electronics | X |  |  |  |
| [V] William Carney, sony | X |  |  |  |
| [V] William Li | X |  |  |  INVALID VOTE: NO MATCH FOUND! |
| [V] Xiangxin Gu, Spreadtrum |  |  | X |  |
| [V] Yan Zhang, Apple | X |  |  |  |
| [V] Yaoshen Cui, TP-Link | X |  |  |  |
| [V] Yelin Yoon, LGE | X |  |  |  |
| [V] Ying Wang |  | X |  |  |
| [V] Yingqiao Quan, Spreadtrum |  | X |  |  |
| [V] Yongsen Ma | X |  |  |  |
| [V] Yoshio Urabe |  |  | X |  |
| [V] Youhan Kim (Qualcomm Technologies, Inc.) | X |  |  |  |
| [V] Yue Zhao | X |  |  |  |
| [v] Yuki Tsujimaru |  |  | X |  |
| [V] Yunbo Li | X |  |  |  |
| [V] Yusuke Asai, NTT |  |  | X |  |
| [V] Yusuke Tanaka | X |  |  |  |
| [V] Zheng Guo,NXP |  |  | X |  |
| [V] Zhenguo Du |  |  | X |  |
| [V] Zhongjiang Yan |  |  | X |  |
| [V]HanGyu Cho\_LGE | X |  |  |  |
| [V]Hanqing Lou, InterDigital |  | X |  |  |
| [V]Kazuyuki Tota Canon |  |  | X |  |
| [V]Shuling (Julia) Feng, Mediatek | X |  |  |  |
| [V} Jinsoo Choi, LGE | X |  |  |  |
| Abdel Ajami | X |  |  |  |
| Anonymous | X |  |  |  INVALID VOTE: NO MATCH FOUND! |
| Anonymous | X |  |  |  INVALID VOTE: NO MATCH FOUND! |
| Anuj Batra | X |  |  |  |
| Binita Gupta | X |  |  |  |
| Chris Young | X |  |  |  |
| Daniel Borges | X |  |  |  |
| Debashis Dash | X |  |  |  |
| Federico Lovison | X |  |  |  |
| Hitoshi MORIOKA |  |  | X |  |
| James Yee | X |  |  |  |
| Jarkko Kneckt | X |  |  |  |
| Javier Contreras | X |  |  |  |
| Jon Rosdahl IEEE 802 Executive Secretary | X |  |  |  |
| Kanke Wu | X |  |  |  |
| Lalit Garg | X |  |  |  |
| Malcolm Smith | X |  |  |  |
| Menzo Wentink | X |  |  |  |
| Minyoung Park | X |  |  |  |
| Nehru Bhandaru | X |  |  |  |
| Paul Cheng | X |  |  |  |
| Pelin Salem | X |  |  |  |
| Pooria Pakrooh | X |  |  |  |
| Qi Wang | X |  |  |  |
| Reza Hedayat | X |  |  |  |
| Robert Zhou | X |  |  |  |
| Shivesh Ganotra | X |  |  |  |
| Shubhodeep Adhikari | X |  |  |  |
| Sid Thakur | X |  |  |  |
| Stephen McCann |  | X |  |  |
| Tianyu Wu | X |  |  |  |
| tomo adachi | X |  |  |  |
| Ugo Campiglio | X |  |  |  |
| Wook Bong Lee | X |  |  |  |
| Yanjun Sun | X |  |  |  |
| Yong Liu | X |  |  |  |

* The record of the straw poll on Thurs day PM2 (from Akira Kishida)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name / Affiliation** | **Yes** | **No** | **Abs.** | **Note** |
| (V) Klaus Doppler, Nokia |  |  | X |  |
| [A]Jun Minotani, Panasonic Holdings Corporation |  |  | X |  |
| [A]Yasushi Takatori | X |  |  |  |
| [N] Javier Perez-Ramirez, Ofinno |  |  | X |  |
| [NV] - Marco Merlin, CEVA Rivierawaves |  |  | X |  |
| [NV] Cheng-Ming Chen |  | X |  |  |
| [NV] Zheng Wang |  | X |  |  |
| [P] Hank Hyeonjun Sung, WILUS Inc. |  |  | X |  |
| [P] Kerstin Johnsson |  |  | X |  |
| [PV] Boqi Jia, huawei |  | X |  |  |
| [PV] Kyosuke Inoue, SHARP | X |  |  |  |
| [PV] Rishabh Roy, Samsung Electronics |  |  | X |  |
| [PV] Tong Xiao, Xiaomi |  |  | X |  |
| [PV] Toshizo Nogami, Sharp | X |  |  |  |
| [PV] Zhenpeng Shi, Huawei |  |  | X |  |
| [V] Abhishek Chaturvedi, Samsung Electronics | X |  |  |  |
| [V] Abhishek Patil |  | X |  |  |
| [V] Akira Kishida, NTT | X |  |  |  |
| [V] Al Petrick |  | X |  |  |
| [V] Albert Bredewoud, Broadcom |  |  | X |  |
| [V] Alice Jialing Li Chen |  | X |  |  |
| [V] Arik Klein, Huawei |  | X |  |  |
| [V] Atsushi Shirakawa | X |  |  |  |
| [V] Azin Neishaboori, GM |  | X |  |  |
| [V] Behnam Dezfouli | X |  |  |  |
| [V] BIAN Tong, Panasonic |  |  | X |  |
| [V] Bilal Sadiq, Samsung Electronics | X |  |  |  |
| [V] Bin Tian |  | X |  |  |
| [V] Bo Li |  | X |  |  |
| [V] Boon Loong Ng, Samsung Electronics |  |  | X |  |
| [V] Bruce HaoHua Kang, MediaTek Inc. | X |  |  |  |
| [V] Carol Ansley, Cox | X |  |  |  |
| [V] Chaoming Luo |  |  | X |  |
| [V] Chung-Ta Ku, Mediatek |  |  | X |  |
| [V] Chunyu Hu |  | X |  |  |
| [v] Dana Ciochina Sony |  |  | X |  |
| [V] Daniel Verenzuela |  |  | X |  |
| [V] Denis Bykov, NXP |  |  | X |  |
| [V] Der-Zheng Liu, Realtek |  |  | X |  |
| [V] Dong Wei |  | X |  |  |
| [V] Dongju Cha, LGE |  |  | X |  |
| [V] Duncan Ho |  | X |  |  |
| [V] Eugene Baik, Qualcomm |  | X |  |  |
| [V] Evgeny Khorov | X |  |  |  |
| [V] Franics Keshmiri, Huawei |  | X |  |  |
| [V] Frank Chien-Fang Hsu, Mediatek |  | X |  |  |
| [V] GaborB, Mediatek | X |  |  |  |
| [V] Gaius Wee, Panasonic |  |  | X |  |
| [V] Genadiy Tsodik Huawei |  |  | X |  |
| [V] GeonHwan Kim, LGE |  |  | X |  |
| [V] George Chih-Chun Kuo |  |  | X |  |
| [V] Guogang Huang |  | X |  |  |
| [V] Hirohiko INOHIZA |  |  | X |  |
| [V] Hiroyuki Motozuka | X |  |  |  |
| [V] Hitoshi MORIOKA, SRC Software | X |  |  |  |
| [V] Hui Che, Ruijie |  | X |  |  |
| [V] Hui Yang |  |  | X |  |
| [V] Hyungjin Kim, Broadcom |  |  | X |  |
| [V] Ilya Levitsky, NRU HSE |  |  | X |  |
| [V] Insun Jang |  |  | X |  |
| [V] Ishaque Kadampot, Qualcomm |  | X |  |  |
| [V] Jaheon Gu, Samsung Electronics |  | X |  |  |
| [V] Jason Yuchen Guo |  |  | X |  |
| [v] Jay Yang [ZTE] |  |  | X |  |
| [V] Jiayi Zhang (Vincent), Ofinno |  |  | X |  |
| [V] Jinho Choi, Samsung Electronics |  | X |  |  |
| [V] John Wullert, Peraton Labs |  |  | X |  |
| [V] Jonathan Segev |  |  | X |  |
| [V] Joonsoo, Newracom |  |  | X |  |
| [V] Joseph Levy, Interdigital |  |  | X |  |
| [V] Jouni Malinen, Qualcomm |  | X |  |  |
| [V] Junghoon Suh, Huawei |  | X |  |  |
| [V] Jungjun Kim, Samsung Electronics |  | X |  |  |
| [V] Karim Nassiri Toussi, BRCM |  |  | X |  |
| [V] Karthik Srinivasa Gopalan, Samsung Electronics | X |  |  |  |
| [V] Kazuto Yano, ATR | X |  |  |  |
| [V] Ke Zhong, Ruijie Networks |  |  | X |  |
| [V] Kosuke Aio, Sony | X |  |  |  |
| [V] Lan Peng |  | X |  |  |
| [V] Lei Wang, Futurewei/Huawei | X |  |  |  |
| [V] Leo Montreuil, Broadcom |  |  | X |  |
| [V] Li-Hsiang Sun |  | X |  |  |
| [V] Liuming Lu, OPPO |  |  | X |  |
| [V] Mahmoud Hasabelnaby, Huawei |  | X |  |  |
| [V] Manasi Ekkundi, Samsung Electronics |  |  | X |  |
| [V] Mao Yang |  | X |  |  |
| [V] Mark Hamilton (CommScope/Ruckus) |  | X |  |  |
| [V] Martin Eiger, Peraton Labs |  |  | X |  |
| [V] Massinissa Lalam, Sagemcom |  |  | X |  |
| [V] Matthew Fischer | X |  |  |  |
| [V] Mengshi Hu |  | X |  |  |
| [V] Ming Gan Huawei |  | X |  |  |
| [V] Naveen Kakani |  | X |  |  |
| [V] Necati Canpolat, Intel | X |  |  |  |
| [V] Neel Krishnan, Apple |  | X |  |  |
| [V] Oded Redlich, Huawei |  | X |  |  |
| [V] Okan Mutgan, Nokia |  |  | X |  |
| [V] Pascal Viger, Canon |  |  | X |  |
| [V] Patrice NEZOU, Canon |  | X |  |  |
| [V] Pei Zhou, TCL |  |  | X |  |
| [V] Peshal Nayak, Samsung Electronics | X |  |  |  |
| [V] Pooya Monajemi, Apple |  | X |  |  |
| [V] Prabodh Varshney | X |  |  |  |
| [V] Qing Xia, Sony |  |  | X |  |
| [V] Qinglai Liu |  |  | X |  |
| [V] Rae Haorui Yang, China Mobile |  | X |  |  |
| [V] Renlong Zhou,Sanechips |  |  | X |  |
| [V] Robert Sosack Molex |  |  | X |  |
| [V] Rocco Di Taranto, Ericsson AB | X |  |  |  |
| [V] Ronny Yang-Hung Peng, Mediatek |  |  | X |  |
| [V] Ross Jian Yu Huawei |  | X |  |  |
| [V] Rui Yang, InterDigital |  |  | X |  |
| [V] Ryota Yamada | X |  |  |  |
| [V] Ryuichi Hirata |  |  | X |  |
| [V] Sameer Vermani |  | X |  |  |
| [V] Sang Kim LGE |  |  | X |  |
| [V] Sanket Kalamkar |  | X |  |  |
| [V] Seongho Byeon, Samsung Electronics |  | X |  |  |
| [V] Serhat Erkucuk, Ofinno |  |  | X |  |
| [V] Seungho Choo, Senscomm |  |  | X |  |
| [V] Sherief Helwa, Qualcomm Technologies, Inc |  | X |  |  |
| [V] Shuntaro Suzuki, Yamaha | X |  |  |  |
| [V] Sigurd Schelstraete |  |  | X |  |
| [V] Sindhu Verma, Broadcom |  |  | X |  |
| [V] Siukai Mak, Broadcom | X |  |  |  |
| [V] Srinath Puducheri, Broadcom |  |  | X |  |
| [V] Srinivas Kandala Samsung | X |  |  |  |
| [V] Steven Qi Wang |  | X |  |  |
| [V] Subharthi Banerjee, NXP | X |  |  |  |
| [V] SunHee Baek LGE |  |  | X |  |
| [V] Taeyoung Ha, Samsung |  |  | X |  |
| [V] Takuhiro Sato, Sharp | X |  |  |  |
| [V] Tuncer Baykas, Ofinno |  | X |  |  |
| [V] Vinko Erceg - Broadcom |  |  | X |  |
| [V] VK Jones |  | X |  |  |
| [V] William Carney, sony | X |  |  |  |
| [V] William Li |  |  | X |  |
| [V] Xiaofei Wang, Interdigital | X |  |  |  |
| [V] Yan Zhang, Apple |  | X |  |  |
| [V] Yanchun Li, Huawei | X |  |  |  |
| [V] Yang Hang, Ruijie |  |  | X |  |
| [V] Yang Yang |  | X |  |  |
| [V] Yelin Yoon, LGE |  |  | X |  |
| [V] Ying Wang |  |  | X |  |
| [V] Yingqiao Quan, Spreadtrum |  |  | X |  |
| [V] Yonggang Fang |  |  | X |  |
| [V] Yongsen Ma | X |  |  |  |
| [V] Yoshio Urabe |  |  | X |  |
| [V] Youhan Kim (Qualcomm Technologies, Inc.) |  | X |  |  |
| [V] Yue Zhao |  | X |  |  |
| [v] Yuki Tsujimaru |  |  | X |  |
| [V] Yuki Yoshikawa | X |  |  |  |
| [V] Yunbo Li |  |  | X |  |
| [V] Yusuke Asai, NTT | X |  |  |  |
| [V] Yusuke Tanaka | X |  |  |  |
| [V] Yuxin Lu |  |  | X |  |
| [V] Zhengchun Zhou |  | X |  |  |
| [V] Zhenguo Du |  | X |  |  |
| [V] Zhongjiang Yan |  | X |  |  |
| [V] Zhuqing Tang, Huawei |  | X |  |  |
| [V], Yanchao Xu, Amlogic |  |  | X |  |
| [V]Bo Xiao,ZTE |  |  | X |  |
| [V]HanGyu Cho\_LGE |  |  | X |  |
| [V]Hanqing Lou, InterDigital |  |  | X |  |
| [V]Jenzel, iTenest | X |  |  |  |
| [V]Manish Kumar-NXP | X |  |  |  |
| [V]Shuling (Julia) Feng, Mediatek |  |  | X |  |
| [V]Yun Li,ZTE |  |  | X |  |
| [V} Jinsoo Choi, LGE |  |  | X |  |
| Abdel Ajami |  | X |  |  |
| Al Dumdei |  | X |  |  |
| Anonymous |  |  | X |  |
| Anonymous |  | X |  |  |
| Anonymous |  | X |  |  |
| Anonymous |  |  | X |  |
| Anuj Batra |  | X |  |  |
| Binita Gupta |  | X |  |  |
| Brian Hart |  |  | X |  |
| Daniel Borges |  |  | X |  |
| Debashis Dash |  | X |  |  |
| Dong Han |  | X |  |  |
| Federico Lovison |  | X |  |  |
| Ian Sherlock | X |  |  |  |
| James Yee |  | X |  |  |
| Jarkko Kneckt |  |  | X |  |
| Javier Contreras |  | X |  |  |
| Jinjing Jiang |  | X |  |  |
| Jon Rosdahl IEEE 802 Executive Secretary |  | X |  |  |
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