IEEE P802.11  
Wireless LANs

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| Minutes for TGbn MAC Ad-Hoc sessions in March 2025 | | | | |
| Date: 2025-03-10 | | | | |
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Abstract

This document contains the meeting minutes for the TGbn MAC ad hoc sessions in March 2025.

Revisions:

* Rev0: Added the minutes from the MAC ad hoc sessions held on March 10 (AM1), 11 (AM2, PM1, and PM2), 12 (AM1 and PM2) and 13 (AM1).
* Rev1: Added the recorded voting results in appendix.

**March 10, 2025, AM1 (TGbn MAC ad hoc session)**

Chairman: Srinivas Kandala (Samsung)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex and in Atlanta (in-person).

**Introduction**

1. The Chair (Srinivas Kandala, Samsung) calls the meeting to order at 08:00. The Chair introduces himself and the Secretary (Jeongki Kim, Ofinno).
2. The Chair reminded the members that they need to register for the plenary in order to attend the meeting.
3. The Chair recommends using IMAT for recording the attendance.
   * 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 Plenary Session” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click the “TGbn (MAC)”” meeting 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 Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com)), Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.com)), and Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com))
4. The Chair goes through the 802 and 802.11 IPR policy and procedures and asks if there is anyone that is aware of any potentially essential patents.
   1. Nobody responds.
5. The Chair goes through the IEEE copyright policy.
6. The Chair asked whether there is comment about agenda in 11-25/0221r1.

**Review/Finalize Comment Assignments for CC50 – MAC tab (TGbn D0.1) –** [**25/0296r1**](https://mentor.ieee.org/802.11/dcn/25/11-25-0296-01-00bn-ieee-802-11bn-cc50-comments-on-d0-1.xlsx)

Deferred.

**Submissions – P2P + NPCA Part 1**

1. [24/1750](https://mentor.ieee.org/802.11/dcn/24/11-24-1750-00-00bn-managed-on-channel-p2p-communication-and-simulations-follow-up.pptx) Managed on-channel P2P communication and simulations - Follow up Iñaki Val

C: slide 4, the second mainbullet, you could have bi direction traffic going on in more two. You mad is not accurate.

A: The first one is high performance.

C: is it the throughput … This is application point view.

C: slide 4, RDG to do bi directional with TX mode. This would give you at least two users.

C: The bigger problem is a lot of time the P2P communication are happening with users that is nothing associated to the AP. That’s by itself.

A: How do you get it?

1. [24/2076](https://mentor.ieee.org/802.11/dcn/24/11-24-2076-00-00bn-tdls-over-off-channel.pptx) TDLS-over-off-channel Liangxiao Xin

C: Yan, slide 5, you want to setup to perform there discovery. Non-AP legacy STA does not support multi-link. I’m a little bit confused about it.

C: In TDLS setup procuedure is one of roles of AP .

C: SP 1, We can already do TDLS over the off channel. What the first subbullet means? I find they may not associate. In the last the subbullet very confusing shall not or how can we.

A: for second, if we have a non-AP MLD, in example, we only have legacy AP which only has one single link and what we can do for non-AP MLD is to let.

C: In baseline, TDLS STA need to require association with AP.

SP is deferred.

1. [24/1838](https://mentor.ieee.org/802.11/dcn/24/11-24-1838-00-00bn-considerations-on-coordinated-npca.pptx) Considerations on Coordinated NPCA Mahmoud Hasabelnaby

C: I wonder how to define their bandwidths wireless switch to primary channel. We can define the bandwdiths of their NPCA operation, by puncturing for some on available channel.

1. [24/1867](https://mentor.ieee.org/802.11/dcn/24/11-24-1867-00-00bn-further-consideration-for-npca-operation.pptx) Further Consideration for NPCA Operation Jeongki Kim

C:what kind of P2P communications do you consider? intra-BSS, or OBSS P2P? What assumptions on initiation of these P2P comm?

A: TDLS. That can be the Intra-BSS PPDU

C: If AP already knows, another approach would be easier than NPCA

A: can further discuss

1. [24/1914](https://mentor.ieee.org/802.11/dcn/24/11-24-1914-00-00bn-further-considerations-on-npca.pptx) Further Considerations on NPCA DongJu Cha

The session was adjourned at 10:00.

**March 11, 2025, AM2 (TGbn MAC ad hoc session)**

Chairman: Srinivas Kandala (Samsung)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex and in Atlanta (in-person).

**Introduction**

1. The Chair (Srinivas Kandala, Samsung) calls the meeting to order at 10:30. The Chair introduces himself and the Secretary (Jeongki Kim, Ofinno).
2. The Chair reminded the members that they need to register for the plenary in order to attend the meeting.
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4. The Chair goes through the 802 and 802.11 IPR policy and procedures and asks if there is anyone that is aware of any potentially essential patents.
   1. Nobody responds.
5. The Chair goes through the IEEE copyright policy.
6. The Chair asked whether there is comment about agenda in 11-25/221r3.
7. **Straw Polls (45 mins) – Channel Access, NPCA**

**SP1: Dmitry Akhmetov, Channel Access: 24/1918r1 – Result:**

* + Do you support to define CTS as Defer Signal to start protected short contention for the pending LL data?

C: why don’t you consider RTS? Why only CTS? RTS looks better.

A: 1918 provided the reasons. We want to send the very short frame. RTS need a negotiation by receiving CTS. Simplest.

C: I prefer using CTS. Can we use non-HT PPDU?

A: I already mentioned the details in PDT.

C: SP2, The second bullet should be the subbulet of the first bullet.

C: In D0.1, we already have P-EDCA. Is it same as HIP EDCA? What is the difference between them?

A: Yes, same.

**99Y, 18N, 51A**

**SP2: Dmitry Akhmetov, Channel Access: 24/1918r1 – Result:**

* + Do you support that a STA may use P-EDCA
    - If HIP EDCA option is enabled by the AP to which that STA is associated to
      * Enablement procedure TBD
    - May transmit up to TBD but no more than 50 transmissions of DS and up to 2.5 ms of total transmission time to start HIP EDCA contention over 50ms interval
      * Note: ETSI regulation of Short Control Signaling transmission
    - Shall not initiate more than TBD number of transmissions of DS to start HIP EDCA consecutively.
      * Note: consecutive DS transmission are multiple attempts to perform HIP EDCA contention w/o falling back to regular EDCA operation

C: Do you want to make some changes based on comments?

A: Third bullet should be shifted. STA should be non-AP STA. HiP EDCA should be P-EDCA.

C: up to 2.5ms is total transmission in part individually attempt or 2.5ms includes 50 transmission max?

C: this whole feature is basically optional and it’s AP controlled?

C: I want to make a general rather than non-AP.

A: Ok. Go back to STA

C: Any STA can use P-EDCA on TBD conditions. I’d like to change the STA should be eligible STA.

A: UHR STA ok?

C: Yes

C: If you think STA is not non-AP STA but all STA, then you need to delete to which is associated to.

**72Y, 41N, 58A**

**SP3: Dmitry Akhmetov, Channel Access: 24/1918r1 – Result:**

•Do you support to use the reference value for the Protected Duration of the protected short contention   
•The default value is equal to AIFSN[2] + 7 slots (97 us)   
•The Defer Signal frame carry that Protected Duration in the Duration field   
•UHR AP may advertise values other than default

**101Y, 15N, 49A**

1. **PDTs/CRs (5 mins) –**
   1. [25/244r3](https://mentor.ieee.org/802.11/dcn/25/11-25-0244-03-00bn-pdt-mac-ap-id-assignment.docx) PDT-mac-AP ID assignment Jay Yang (SP)

C: You can remove the TBD at the end of text.

C: These subbullet should be reorganized. Do you have any plan for it?

A: Yes I can do

C: What does the when necessary mean?

A: It’s based on the motion text.

C: when necessary means it’s optional. Sometimes AP ID may not be needed.

SP is deferred.

1. **Submissions – NPCA Part 2**
   1. [24/2061](https://mentor.ieee.org/802.11/dcn/24/11-24-2061-00-00bn-usage-of-npca-in-m-ap-coordination.pptx) Usage of NPCA in M-AP coordination Si-Chan Noh

C: slide 6, I agree with it’s better not to switch to NPCA primary channel if the sharing AP is going to share checks with another Aps or if the sharing AP indicates that.

C: the same slides, what is the assumption on the shared Aps frame exchange sequence> its not clear to me why the sharing AP BSS is performing NCPA beyond the sharing AP frame exchanges.

A: Terminate these frame exchange earlier than the shared sharing AP and its associated. Shared Aps its terminating ist TXOP sooner than expected.

* 1. [24/2088](https://mentor.ieee.org/802.11/dcn/24/11-24-2088-01-00bn-npca-primary-channel-access.pptx) NPCA Primary Channel Access Yuxin Lu

C: SP 1, non-AP STA shares wireless resources to AP on NPCA PCH? What is the special about NPCA?

A: because some AP may have limited capabilities. After they switch to the NPCA primary channel, then they may have some synchronization issue in the carrier frequency. So, it’s better for AP to send a trigger on the NPCA primary channel. Non-AP STA can adjust the frequency offset.

C: SP 1 deferred is ok.

A: ok

* 1. [24/2089](https://mentor.ieee.org/802.11/dcn/24/11-24-2089-01-00bn-npca-primary-channel-selection.pptx) NPCA Primary Channel Selection Yuxin Lu

C: I want to run SP 1 and 3.

C: We need to discuss AP is supposed to do with this information. NPCA channel should be in secondary half of the BSS bandwidth. I’m not sure what the AP is supposed to do with this kind of indication.

C: Are you referring to OM control? To enable or disable the NPCA operation. Not sure whether OMI is the right way to do it. We have several thing DPS enabling/disable or DSO. We can make it more general.

C: Not sure why this assistance is needed.

C: Slide 6, I was wondering whether you can provide the definition of this parameter and explain why it’s needed in this context.

C: What is the context?

* 1. [24/2092](https://mentor.ieee.org/802.11/dcn/24/11-24-2092-00-00bn-considerations-on-npca-follow-up.pptx) Considerations on NPCA Follow Up Maolin Zhang

No discussion.

* 1. [24/2110](https://mentor.ieee.org/802.11/dcn/24/11-24-2110-00-00bn-impact-of-hidden-nodes-on-npca-performance.pptx) Impact of hidden nodes on NPCA performance Iñaki Val Beitia

C: with hidden node, I’m surprised that you didn’t see any degradation here

C: why do yo our what’s the reationale behind station on behind the Aps not switching to NPCA upon here in the CTS from STA or the RTS from the STA.

C: surprised that you don’t see any gains.

The session was recessed at 12:30.

**March 11, 2025, PM1 (TGbn MAC ad hoc session)**

Chairman: Srinivas Kandala (Samsung)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex and in Atlanta (in-person).

**Introduction**

1. The Chair (Srinivas Kandala, Samsung) calls the meeting to order at 13:30. The Chair introduces himself and the Secretary (Jeongki Kim, Ofinno).
2. The Chair reminded the members that they need to register for the plenary in order to attend the meeting.
3. The Chair recommends using IMAT for recording the attendance.
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4. The Chair goes through the 802 and 802.11 IPR policy and procedures and asks if there is anyone that is aware of any potentially essential patents.
   1. Nobody responds.
5. The Chair goes through the IEEE copyright policy.
6. The Chair asked whether there is comment about agenda in 11-25/221r4.
7. **Straw Polls (45 mins) – Discovery, Roaming, Coexistence, ICF**

**SP1: Guogang Huang, Discovery: – Result:**

* Do you support to define a mechanism in 11bn to retrieve probe response content for neighboring AP MLD(s) of the current AP MLD, through the current AP MLD?
* Note. The neighboring AP MLD and the current AP MLD are in the same ESS

*Reference documents:[23/1897r0, 24/1879r0, 24/658].*

**SP1 result: No objection**

**SP2: Sindhu Verma, Coex: 24/1559r1 – Result:**

* Do you agree to the following conditions for transmitting unsolicited unavailability indications that can be sent by a non-AP as a TXOP holder in a BSRP GI3 trigger frame:
  + No restriction when sent with QoS data transmitted in the TXOP
  + When sent without QoS data transmitted in the TXOP, not more than *MaxStandaloneDuoBSRP* number of times every beacon interval where *MaxStandaloneDuoBSRP* is a non-zero value and part of the DUO parameter set indicated by the AP

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

C: what’s the GI3?

C: what is there is no QoS data in the second bullet? What about QoS null frame without QoS data?

A: QoS null would include that.

**SP 2 result: No objection**

**SP3: Sindhu Verma, ICF: – Result:**

* Do you agree that the I-FCS in a Trigger frame is included as part of 2 contiguous User Info fields known as I-FCS User Info fields

Supporting documents: 23/1873r0, 23/2003r1, 25/0144, 24/497r0, 24/1129r1

C: Can you defer the SP after I present my contribution related to this SP?

A: We already discussed several times and have consensus.

C: 25/0450 I-FCS discussion

Motion to amend

Move to add the agenda document 25/0450 i-FCS discussion

Moved by Avner Seconded by Martinez

82Y, 55N, 38A

***Not passed.***

C: 25/0144 is not presented. Can we remove this?

A: It contains the motivation of the SP although

C: What’s the rule of supporting SP document?

C: Want to ask unpresented documents be supporting documents.

C: This is just SP to ask members their opinions. Any format can be possible.

Recorded voting requested. (See appendix)

SP3: 92Y, 65N, 60A

**Copy from PM2**

**SP1: Binita Gupta, DBE: – Result:**

* Do you agree to define in 11bn a mechanism for dynamic bandwidth expansion (DBE) that enables a UHR AP to modify (expand/reset) its Dynamic UHR operating BSS bandwidth for UHR STAs that support the DBE operation
  + The dynamic bandwidth change is signaled using management frames and is announced for multiple beacon intervals in advance, and the AP shall stay on the expanded bandwidth until a subsequent dynamic bandwidth change occurs
  + The primary channel does not change as part of the dynamic BW expansion.
  + TBD on DBE signaling details

*Supporting documents: 11-24/88, 11-24/815*

Result: No objection

**SP2: Gwangho Lee, NPCA: 24/1885r4 – Result:**

* Do you agree to include the following into the 11bn SFD?
  + When an NPCA STA receives a RTS frame with bandwidth signaling TA and a CTS frame in non-HT (duplicate) PPDU, identification of the channel occupied by the received frames is determined by examining the bandwidth of the non-HT (duplicate) PPDU containing the CTS frame.

**C: If STA receives the PPDU following the RTS frame, the STA can switch. There is still on-going discussion. I’d like to defer the SP.**

**SP is deferred.**

**SP3: Laurent Cariou, Coex: ???– Result:**

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

**Supporting list: 24/1226r0, 24/1261r3**

C: does accept a request, mean it is mandate for AP to accept unconditionally?

A: Condition is AP support this feature.

C: Revise or notify rather than accept

A: Frame is still request or response frames.

No objection

1. **PDTs/CRs (10 mins) –**
   1. [**24/2007r4**](https://mentor.ieee.org/802.11/dcn/24/11-24-2007-04-00bn-pdt-mac-p-edca.docx) **PDT-MAC-P EDCA Akhmetov, Dmitry**

C: During morning discussion, we discussed CTS frame? You have TBD data rate. Did we discuss it this morning? We can remove TBD rates.

SP: Do you support incorporating the document 24/2007r4 into the next Tgbn draft?

86Y, 46N, 50A

1. **Submissions – NPCA Part 3**
   1. [**24/2125**](https://mentor.ieee.org/802.11/dcn/24/11-24-2125-00-00bn-handling-asymmetric-switching-for-non-primary-channel-access.pptx) **Handling-Asymmetric-Switching-for-Non-Primary-Channel-Access Jason Yuchen Guo**

C: wonder if solution is scalable? There’s going to be a lot of density located BSS or desity located STAs. Do you have any thoughts?

C: solution 2, solution 1, non-AP STA may be moving. Solution 2, non-AP STA may not keep moving. Non-AP STA may be changing. I think we can use ICF/ICR to check whether it switch or not.

C: I have a concern on general direction. Scalability. It’s not very straightforward thing to do.

A: more information can provided the accuracy you do switching. There is trade off between information reporting and accuracy.

* 1. [**~~24/2141~~**](https://mentor.ieee.org/802.11/dcn/24/11-24-2141-00-00bn-npca-operation-with-multi-link-device.pptx) **~~NPCA Operation with Multi-link Device Longlong Hong~~**
  2. [**25/0001**](https://mentor.ieee.org/802.11/dcn/25/11-25-0001-00-00bn-discussion-on-different-view-problem-of-npca.pptx) **Discussion-on-different-view-problem-of-NPCA Liangxiao Xin**

C: Do we have already something related to SP1? Like ICF/ICR exchange.

A: ICF/ICR happens after switching. We can consider before the switching.

C: ICF/ICR is used for this purpose.

C: What’s the impact of the specification?

A: We have several contributions related to issues. If we agree this, we can have more details.

SP: •Do you support to include the following in SFD?  
•11bn shall define a mechanism to mitigate different view problem of NPCA

C: SP text is too broad. What part of the spec is the impact on?

44Y, 82N, 43A

* 1. [**25/0003**](https://mentor.ieee.org/802.11/dcn/25/11-25-0003-00-00bn-npca-follow-up.pptx) **NPCA follow up Jay Yang**

C: slide 4, Do you assume DTIM is sent only on primary channel or NPCA primary channel?

A: Primary channel

C: What’s the TBD conditions in mind?

A: No

C: You can remove it.

C: This SP is a little bit conflicted with baseline in a few cases.

* 1. [**25/0008**](https://mentor.ieee.org/802.11/dcn/25/11-25-0008-00-00bn-an-optimization-for-npca.pptx) **An-optimization-for-NPCA Xiangxin Gu**

C: Does the STA need to wait for some signaling or some indication form AP before? They switch to NPCA primary channel.

C: So sending the CTS on primary channel when there is OBSS on primary channel?

C: Does it create any problem to the ongoing OBSS if you try to send.

C: I have concern about this transmission over an existing OBSS PPDU. It’s there’s little harm.

A: It as a kind of a special use transmission.

C: Do you want to modify CTS? It is supposed to be understood by legacy STAs also. So cause backward compatibility.

A: We have a reserved bit in frame control.

C: I don’t see any reserved bit in CTS frame.

C: Do you mean that STA determine that there is an OBSS PPDU ongoing or do they only determine that the channel is occupied?

A: Wifi signal cannot trigger STA to switch to NPCA primary channel.

The session was recessed

**March 11, 2025, PM2 (TGbn MAC ad hoc session)**

Chairman: Srinivas Kandala (Samsung)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex and in Atlanta (in-person).

**Introduction**

1. The Chair (Srinivas Kandala, Samsung) calls the meeting to order at 16:00. The Chair introduces himself and the Secretary (Jeongki Kim, Ofinno).
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4. The Chair goes through the 802 and 802.11 IPR policy and procedures and asks if there is anyone that is aware of any potentially essential patents.
   1. Nobody responds.
5. The Chair goes through the IEEE copyright policy.
6. The Chair asked whether there is comment about agenda in 11-25/221r4.
7. **Straw Polls (45 mins) – ICF, DBE, NPCA, Coex, DSO, and MAP**

**SP4: Morteza Mehrnoush, DSO: – Result:**

* Do you support that TGbn will define a mechanism where a non-AP STA can be allocated resources dynamically (i.e., on a per-TXOP basis) outside of its current operating bandwidth and within the associated AP’s BSS bandwidth

*Supporting list: [11-22/2204, 11-23/2141 (Sindhu & Shubho), 11-23/843 (Liuming), 11-23/1496 (Kaiying), 11-23/1892 (Gaurang), 11-23/1913 (DongJu), 11-23/1935 (Liwen), 11-23/2027 (Vishnu), 11-24/591 (Morteza), 11-24/1157r1 (Hank Sung)], 24/1863r1*

C: During the detailed DSO discussion, 20MHz operation STA should be considered as well.

No objection

**SP5: Jay Yang, MAP: – Result:**

* Do agree that TGbn defines a procedure using pre-association security negotiation (PASN ) to derive the key(s) needed to protect individually addressed management frames exchanged between two APs as part of the MAPC operation
  + Note – it is TBD whether any extensions will be needed for PASN.

*Supporting list: 24/1693r3, 23/1836r3, 24/1220r2*

C: shall use is too strong. May use may be better.

C: For the same administration domain, we’d want a different mechanism. Let’s are you and in your case, the person also supported authentication for the open authentication.

C: If you protect the frames, then you shall use that’s what you’re saying. An unprotected individual address frame is also possible. But looks like you have different interpretation going on.

Recorded voting requested. (See appendix)

Result: 77Y, 30N, 70A

**SP6: Dmitry Akhmetov, Channel Access: 24/1918r1 – Result:**

* Do you support to define default parameters for P-EDCA for AC\_VO to be used during protected short contention period as follows:
  + P-EDCA CWmin=7, P-EDCA CWmax=7
  + P-EDCA AIFSN=2
  + An UHR AP may advertise values other than default

C: I wonder how we can set default EDCA parameters Its seems like the value of those defaults would depend highly on. How many STA are competing and that sort of thing. It seems like we’re getting the cart ahead of the horse.

A: If it is disabled, then it doesn’t really matter which default parameters. This feature is disabled, you cannot use it. But if it’s enabled, then you as a station. You’re gonna be unified across every body inside the BSS

No objection

**SP7: Dmitry Akhmetov, Channel Access: 24/1918r1 – Result:**

* Do you support to define a default AIFSN value equal to 2 and CW\_DS (contention window for DS) default value equal to 0 for the transmission of Defer Signal frame of HIP EDCA
  + A STA transmit DS on a slot boundary equal to AIFSN + CW, where CW is selected uniformly in (0.. CW\_DS) interval each time for the transmission of DS frame
  + UHR AP may advertise values other than default and if advertised, the associated STAs follow the advertised values
  + The transmission of the Defer Signal frame occurs after detecting medium IDLE using both PHY and virtual CS mechanisms

C: I think there is a whole mechanism is based on this synchronizing synchronize the DS transmission. I’m not sure if you have synchronize. Whether you have a simulation result on it.

C: I’m wondering with this if we have just a single value for CW DS isn’t that nullifying the thing like MUEDCA and EPCS where they allow alternative value EDCA value?

50Y, 33N, 84A

1. **PDTs/CRs (Y mins) –**
2. **Submissions – DSO + Channel Access**
   1. [24/1863](https://mentor.ieee.org/802.11/dcn/24/11-24-1863-00-00bn-performance-benefits-of-dso.pptx) Performance Benefits of DSO Kerstin Johnsson

C: after receiving the indication, does the non-AP STA need to inform AP that it has returned to the primary channel?

A: Yes, that’s true. 1 bit flag in BA can indicate whether STA returns to the primary channel earlier. Then AP do not send me any more downlink data.

C: if you need both data and BA indicates it? What’s the motivation for having something in the BA?

C: Does the STA indicat to it is return?

A: no it doesn’t because the flag indicates that.

C: is there some kind of a request and confirm or?

C: If it’s in BA and gets lost, I think there’s a lot of sync between AP and STA.

C: DSO controls by AP. But your thing is STA is asking it.

* 1. [25/0123](https://mentor.ieee.org/802.11/dcn/25/11-25-0123-00-00bn-further-considerations-on-npca-follow-up.pptx) Further Considerations on NPCA - Follow up Liuming Lu

No discussion due to time limit.

C: I was wondering if you consider this kind of assumption in your cases. how does the presentation position?

C: what is the BSS is capable means.even if one STA is not capable, the BSS is not capable or what we have in mind.

C: Do we need R-TWT or regular TWT? General direction is TWT as well.

C: Is there any use case of TXOP truncation to perform this NPCA on NPCA primary channel?

* [25/0056](https://mentor.ieee.org/802.11/dcn/25/11-25-0056-00-00bn-on-the-interoperability-between-npca-and-cr-twt.pptx) On The Interoperability Between NPCA and CR-TWT                                                      Salvatore Talarico
  1. [25/0125](https://mentor.ieee.org/802.11/dcn/25/11-25-0125-00-00bn-interoperability-of-npca-primary-channel-switching-conditions.pptx) Interoperability of NPCA primary channel switching conditions Thomas Handte

C: option 2 slide, one comment is assumption is Tnht is RTS and CTS. In spec, that is TBD. Both STA should switch very earlier of the following PPDU. Aligned with option 2. We need to have further discussion. Not CTS but L-SIG.

C: slide 8, during the waiting time, STA C do back off?

A: How to use waiting time is open. We could also consider start back off count down

C: do you prefer option? Maybe option 2.

A: Option 2.

* 1. [25/0138](https://mentor.ieee.org/802.11/dcn/25/11-25-0138-00-00bn-further-considerations-on-npca-switching-operation.pptx) Further Considerations on NPCA Switching Operation Serhat Erkucuk

C: If Switching back at the end of the OBSS, it can avoid the medium synchronization. In yours, need medium synchronization after switching back.

The session was recessed at 18:00.

**March 12, 2025, AM1 (TGbn MAC ad hoc session)**

Chairman: Srinivas Kandala (Samsung)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex and in Atlanta (in-person).

**Introduction**

1. The Chair (Srinivas Kandala, Samsung) calls the meeting to order at 08:00. The Chair introduces himself and the Secretary (Jeongki Kim, Ofinno).
2. The Chair reminded the members that they need to register for the plenary in order to attend the meeting.
3. The Chair recommends using IMAT for recording the attendance.
   * 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 Plenary Session” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click the “TGbn (MAC)”” meeting 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 Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com)), Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.com)), and Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com))
4. The Chair goes through the 802 and 802.11 IPR policy and procedures and asks if there is anyone that is aware of any potentially essential patents.
   1. Nobody responds.
5. The Chair goes through the IEEE copyright policy.
6. The Chair asked whether there is comment about agenda in 11-25/221r4.

* **PDTs/CRs (Y mins) –**
  + [25/454r0](https://mentor.ieee.org/802.11/dcn/25/11-25-0454-00-00bn-pdt-mac-dso.docx) PDT-MAC-DSO Morteza Mehrnoush

C: Please add the referred SPs and related CIDs to top of the document if there are any relevant CIDs that were.

C: Now we only have a high level idea and straw poll and need more time to discuss details about this.

A: Several people have a lot of contribution that I did list it at the start of this. They’er ok with the direction in general.

C: There is no reference for 80MHz. SP is very high level.

SP deferred.

All SPs are deferred. Alfred will include the request SPs in PM 2 and tomorrow AM1.

* **Submissions – Roaming Part 1**
  + [24/1874](https://mentor.ieee.org/802.11/dcn/24/11-24-1874-01-00bn-further-details-on-improving-roaming-between-mlds.pptx) Further Details on Improving Roaming between MLDs Po-kai Huang

C: slide 5, there were discussions on multiple Target Aps. But you only considered one target AP.

A: If there are multiple target Aps, non-AP MLD can transmit multiple preparation request frames exchange.

C: Non-AP MLD can cancel the DL data transmission during time out

C: During transient period, non-AP MLD can transmit UL frame ?

A: I don’t focus on it in this contribution.

C: slide 5, whether we can use the current time because this SMD belong to.

SP: Do you support the following for roaming preparation request/response exchange?

* After the roaming preparation request/response exchange, there is an indicated timeout
  + If there is no successful transmission of the roaming execution request frame from the non-AP MLD within the indicated timeout, then the target AP MLD may delete all preparation information related to the non-AP MLD
    - NOTE - This includes security context, i.e., new derived TK if new TK is derived
  + if the roaming preparation request for a target AP MLD is accepted in the roaming preparation response, and the non-AP MLD sends a following roaming execution request for the target AP MLD received within the indicated timeout, then the roaming execution request shall be accepted in the roaming execution response
  + TBD on indication of the timeout
* After the latest roaming preparation request/response exchange, the setup links with the target AP MLD is not modified until after the roaming execution request/response exchange is finished.

No objection

* SP: Do you support the following for roaming preparation request/response exchange?
  + There is only one target AP MLD indicated in the roaming preparation request frame from a non-AP MLD

No objection

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

No objection.

* SP: Do you support that after the roaming execution request/response exchange with the current AP MLD, the TBD period to receive DL data from the current AP MLD ends after the indicated timeout in the roaming execution response?

No objection

* + [24/1875](https://mentor.ieee.org/802.11/dcn/24/11-24-1875-00-00bn-mlmd-architecture.pptx) MLMD Architecture Jarkko Kneckt

C: you refer to PTK rekeying, do you think we need to worry about PTK rekeying or does anybody use it? Is anybody going to do it in the future?

C: slide 5, two level PMK R1, I think there are difference? This is different the MPK R1?

C: PMK-R1 is derived from PMK R0?

A: Yes.

C: SP need more clarification. Not clear. Defer.

C: We should not imply that legacy rekeying mechanisms would be used for.

* + [24/1879](https://mentor.ieee.org/802.11/dcn/24/11-24-1879-02-00bn-proposals-for-expeditious-discovery-of-aps-for-initial-association-and-roaming.pptx) Proposals for Expeditious Discovery of APs for Initial Association and Roaming Neel Krishnan
  + [24/1882](https://mentor.ieee.org/802.11/dcn/24/11-24-1882-00-00bn-link-setup-for-seamless-roaming.pptx) Link Setup for Seamless Roaming Chittabrata Ghosh

C: The problem, is there proposal for what PTK is based on this proposal?

C: You want to protect the PTK from the current AP MLD? Can you clarify how using the PTK design? How are you going to authenticate the public key?

How are you going to prevent the current AP MLD if that’s the query you have? How are you going to prevent an active attack where the curren AP MLD?

**Do you support that**

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

C: I’m wondering if you want to run this SP after mine.

SP is deferred.

* + [24/1883](https://mentor.ieee.org/802.11/dcn/24/11-24-1883-00-00bn-seamless-roaming.pptx) Seamless-Roaming Giovanni Chisci

C: optimzing the cutoff time too much. I would make I would rather make it as related as possble. I would prefer if that is as relaxed as possbile and then there’s always the early termination option.

C: First bullet, seamless roaming can be applied to the FT. We also wanted to enable the link setup during the roaming preparation.

C: If the STA has communication with the current AP MLD, shall it do the execution phase with the current AP MLD or is it allowed to do it with the target AP MLD?

The session was recessed at 10:00.

**March 12, 2025, PM2 (TGbn MAC ad hoc session)**

Chairman: Srinivas Kandala (Samsung)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex and in Atlanta (in-person).

**Introduction**

1. The Chair (Srinivas Kandala, Samsung) calls the meeting to order at 16:00. The Chair introduces himself and the Secretary (Jeongki Kim, Ofinno).
2. The Chair reminded the members that they need to register for the plenary in order to attend the meeting.
3. The Chair recommends using IMAT for recording the attendance.
   * 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 Plenary Session” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click the “TGbn (MAC)”” meeting 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 Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com)), Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.com)), and Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com))
4. The Chair goes through the 802 and 802.11 IPR policy and procedures and asks if there is anyone that is aware of any potentially essential patents.
   1. Nobody responds.
5. The Chair goes through the IEEE copyright policy.
6. The Chair asked whether there is comment about agenda in 11-25/221r5.

Agenda is changed by Abhi’s request. The presentation order is changed from original agenda.

* + [24/1884](https://mentor.ieee.org/802.11/dcn/24/11-24-1884-00-00bn-signaling-considerations-for-seamless-roaming.pptx) Signaling considerations for seamless roaming Abhishek Patil

C: the discovery phase associated and nonassociated I think that’s needed. The recommendation phase, I think that’s needed as well.

C: Link reconfiguration, It’s not a good idea to reuse the reconfiguration request/response because the just needed to indicate.

C: I like the idea of the recommendation phase. I wonder if you were thinking that PTM provides sufficient information or …

SP 1.

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

No objection

SP2

* Do you support that the Link Reconfiguration Request/Response frames (with necessary extensions) shall be used as the roaming preparation Request/Response frames?
  + The Per-STA Profile subelement of the Multi-Link shall be present and each corresponds to the requested/accepted links
  + TBD signaling to indicate that the request is to initiate roaming preparation
  + Other extension (if needed) TBD

No objection

SP3

* Do you support that the Link Reconfiguration Request/Response frames (with necessary extensions) shall be used as the roaming execution Request/Response frames?
  + The Per-STA Profile subelement of Multi-Link element is not required to be present.
  + TBD signaling to indicate that the request is to initiate roaming execution transition
  + Other extension (if needed) TBD

Discussion

C: I have some concerns about Link reconfiguration request/response frame for roaming execution because we don’t need to indicate which should be removed with the current AP MLD. What’s the exact concern.

C: Can you defer to address this concern?

A: what you want accommodated.

69Y 17N 45A

* **Straw Polls (60 mins) –**
  + **SP4: Liwen Chu, NPCA: 24/1891– Result:**
  + Do you agree that an AP shall not allow the use of NPCA within its BSS if the BSS operating bandwidth is less than or equal to 40 MHz?

No objection

* + **SP5: Liwen Chu, NPCA : 24/1891 – Result:**
  + Do you support that:
  + If a TXOP on the NPCA Primary channel overlaps with the TBTT, the AP shall not transmit the Beacon frame or group addressed frames until it switches back to the BSS Primary channel.
  + NOTE – The NPCA AP and non-AP STA participating in frame exchanges must not switch back to the BSS Primary channel at the TBTT and can continue operating on NPCA Primary until the OBSS transmission ends on BSS Primary channel.
  + NOTE2- The group addressed frame will be buffered and delivered immediately following the next DTIM Beacon

C: Note, AP and non-AP STA must not switch back , not clear. What is the intention here?

C: can continue do not like grammatically they do not again.

C: In Note 2, in such cases, the group addressed frame will... is it ok for the clarification?

No objection

* + **SP6: Hongwon Lee, Control : 24/1490r2 – Result:**
  + Do you agree to include the following into the 11bn SFD?
  + 11bn allows a Multi-STA BA frame to include both Block Ack Bitmap and Feedback information if the preceding PPDU includes QoS Data frame(s) that solicit an immediate response (e.g., Ack or BlockAck context) and the non-AP STA is operating in a mode that allows inclusion of feedback information(e.g. DUO mode)

No objection

* + **SP7: Jeongki Kim, NPCA: 24/1867r1 – Result:**
  + An NPCA AP shall not switch to the NPCA primary channel for NPCA operation if all NPCA non-AP STAs associated with the NPCA AP disabled the NPCA mode?

Deferred

* + **SP8: Jeongki Kim, NPCA: 24/1867r1 – Result:**
  + An NPCA AP shall not switch to the NPCA primary channel for NPCA operation if there is no NPCA non-AP STA associated with the NPCA AP?

Deferred

* + **SP9: Jeongki Kim, NPCA: 24/1867r1 – Result:**
  + An NPCA STA may switch to the NPCA primary channel when it receives an intra-BSS HE/EHT/UHR DL PPDU on the primary channel
  + Detailed conditions and procedures are TBD

Deferred

**SP1: Binita Gupta, Roaming: 24/656 – Result:**

* For seamless roaming, do you support to allow a non-AP MLD to request preparing more than one candidate target AP MLDs in an SMD during the roaming preparation phase?
  + Preparation with multiple AP MLDs is performed using a separate roaming preparation request for each AP MLD
  + If successful roaming preparation was performed with multiple candidate target AP MLDs, then the non-AP MLD shall attempt roaming execution with only one of those target AP MLDs at a time.
    - Retries with other target AP MLDs are permitted for roaming execution
  + TBD on policy indication from the AP on multiple target AP MLDs preparation
* 86y 30n 34abs

**SP2: Binita Gupta, Roaming: 24/656 – Result:**

* Do you agree to define an SMD element, that provides identification for the SMD and SMD level capabilities for a seamless mobility domain?
  + The SMD element is advertised in Probe Response frames
  + The SMD element is included in Authentication frame when performing authentication with an SMD

No objection.

* + **SP3: Binita Gupta, Roaming: 24/656 – Result:**
  + Do you agree to enhance Neighbor Report element to provide SMD related information
  + Add a ‘Same SMD’ indication in the BSSID Information in the NR element, to signal whether the reported neighboring AP is part of the same SMD as the reporting AP
  + · Allow including the SMD element as a subelement in the Optional Subelements of the Neighbor Report element, when reported neighboring AP is not part of the same SMD

No objection

* + **SP10: Javier Perez-Ramirez, Roaming: 24/1824r1 – Result:**
  + Do you agree the non-AP MLD may perform R-TWT context renegotiation with the target AP MLD during the roaming procedure?
  + Renegotiation can be initiated after preparation response is successfully received by the non-AP MLD (i.e., the link between the non-AP MLD and the target AP MLD has been successfully set up).
  + Details on how to perform renegotiations are TBD.

Deferred

* + **SP11: Jay Yang, MAP: 24/1693r3, 23/1836r3, 24/1220r2 – Result:**
  + Do agree that TGbn defines a procedure using pre-association security negotiation (PASN ) to derive the key(s) needed to protect individually addressed management frames exchanged between two APs as part of the MAPC operation
  + Note – it is TBD whether any extensions will be needed for PASN.

Deferred

* + **SP12: Pooya Monajemi, Roaming: 24/1898r1 – Result:**
  + Do you support that during a roaming transition, the current AP MLD shall be capable of signaling termination of downlink data transmission to the non-AP MLD before the transient period ends?
  + Signaling TBD
  + NOTE: AP sends the indication when there is no more pending DL data (all TIDs). TBD other conditions
  + No objection
  + **SP13: Pooya Monajemi, Roaming: 24/1898r1 – Result:**
  + Do you support that in the seamless roaming procedure, non-AP MLD can request not to transfer from the current AP MLD to the target AP MLD any of the following as part of the context transfer?
  + The next SN for existing DL BA agreements of all TIDs
  + The latest SN that has been passed up for existing UL BA agreements of all TIDs
  + No objection
  + **SP14: Jarkko Kneckt, Roaming: 24/2118r0 – Result:**
  + An AP (referred to as the reporting AP) affiliated with an AP MLD includes a TPC Report element in the Per-STA Profile subelement of the Basic Multi-link element in probe response frame for each reported AP affiliated with the same AP MLD

Deferred

**SP15: Giovanni Chisci, Roaming: 24/1883r3 – Result:**

* Do you support allowing a second mode for security in roaming (in addition to the first mode with single TK used across all AP MLDs of the SMD) where a non-AP MLD can derive a new TK under the same PTKSA with the target AP MLD?
  + The new TK is derived as part of the single PTKSA
  + The PN is maintained per PTKSA: The new TK negotiated with the target AP MLD shares the same PN space with the TK of the current AP MLD (PN is monotonically increasing)

*Supporting list: [24/1882, 24/1883, 24/1884, 24/1898, 24/1874]*

**No objection**

**SP16: Giovanni Chisci, Roaming: 24/1883r3 – Result:**

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

No objection

**From Thursday AM1**

**SP13: Chittabrata Ghosh, Roaming: 24/1882r2 – Result:**

* Do you support that
  + TBD request frame initiating roaming preparation carries the DH parameter element of the non-AP MLD when new PTK is derived
  + TBD response frame during roaming preparation carries DH parameter element generated by the target AP MLD when new PTK is derived
  + Non-AP MLD and the target AP MLD derive the PTK based on the shared PMK and DHss in TBD request and TBD response frames?

No objection

* **PDTs/CRs (5 mins) –**
  + [25/244r5](https://mentor.ieee.org/802.11/dcn/25/11-25-0244-05-00bn-pdt-mac-ap-id-assignment.docx) PDT-mac-AP ID assignment Jay Yang (SP)

SP: Do you agree to incorporate 25/0244r5 into the next TGbn draft?

No objection

* **Submissions – Roaming Part 2**
  + [24/1889](https://mentor.ieee.org/802.11/dcn/24/11-24-1889-00-00bn-seamless-roaming-follow-up-1.pptx) Seamless roaming follow up 1 Liwen Chu

In the neighbor report is this recommendation bit really . we recommend you the non AP MLD to move this, is it something a bobut you have an extra, you have to need to have two bits or one bit?

SP 1

No objection.

Recess

**March 13, 2025, AM1 (TGbn MAC ad hoc session)**

Chairman: Srinivas Kandala (Samsung)

Secretary: Jeongki Kim (Ofinno)

This meeting took place using a webex and in Atlanta (in-person).

**Introduction**

1. The Chair (Srinivas Kandala, Samsung) calls the meeting to order at 08:00. The Chair introduces himself and the Secretary (Jeongki Kim, Ofinno).
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3. The Chair recommends using IMAT for recording the attendance.
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     + 1) login to [imat](https://imat.ieee.org/attendance), 2) select “802 Wireless Plenary Session” entry, 3) select “C/LM/WG802.11 Attendance” entry, 4) click the “TGbn (MAC)”” meeting 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 Jeongki Kim ([jeongki.kim.ieee@gmail.com](mailto:jeongki.kim.ieee@gmail.com)), Xiaofei Wang ([xiaofei.wang@interdigital.com](mailto:xiaofei.wang@interdigital.com)), and Srinivas Kandala ([srini.k1@samsung.com](mailto:srini.k1@samsung.com))
4. The Chair goes through the 802 and 802.11 IPR policy and procedures and asks if there is anyone that is aware of any potentially essential patents.
   1. Nobody responds.
5. The Chair goes through the IEEE copyright policy.
6. The Chair asked whether there is comment about agenda in 11-25/221r6.

* **Straw Polls (60 mins) –**

**SP1-4 skip**

**SP5: Po-Kai Huang, Roaming: 24/1874r1 – Result:**

* Do you support to enable the following contexts to be transferred to target AP MLD to preserve the data exchange context for the non-AP MLD?
  + Block Ack Parameters and Block Ack Timeout Value indicated by the non-AP MLD for existing BA agreement of a TID
  + Next SN to be assigned for DL individually addressed data frame of each TID
  + Latest duplicate receiver cache for TID without BA agreement
  + latest SN that has been pass up for TID with UL BA agreement
  + Starting PN to be assigned for DL individually addressed frame by the target AP MLD
  + Initial value to be used by each replay counter of the target AP MLD for UL individually addressed frame
  + WinStartO of an existing DL BA agreement so that the target AP MLD does not exceed reordering buffer window of the non-AP MLD
  + TBD for other contexts

No objection

**SP6: Giovanni Chisci, MAP: 24/1220r1, 24/0407r0 – Result:**

Do you support to define new actions for Public Action frames for MAPC communications such as discovery and negotiations?

* A new action is defined for MAPC Discovery
* An action is defined for MAPC Negotiation Request
* An action is defined for MAPC Negotiation Response
* Others are TBD

No objection

**SP7: Giovanni Chisci, MAP: 24/1220r1 – Result:**

Do you support that when an AP use Management frames to discover the capabilities and/or parameters of individual M-AP coordination schemes, the AP shall use the defined MAPC Public Action frame with the following setting:

* The action field is set to MAPC Discovery

No objection

**SP8: Giovanni Chisci, MAP: 24/1220r1, 25/0378r0 – Result:**

* Do you support that, when an AP (AP1) uses an individually addressed Management frame to initiate a negotiation to establish agreements for M-AP coordination schemes (if enabled by another AP (AP2)), the AP (AP1) shall use the defined MAPC Public Action frame with the following setting:
  + The action field is set to MAPC Negotiation Request
* If new negotiations are disabled by another AP (AP2) the AP (AP1) shall not send a negotiation request the other AP (AP2)

TBD details of ‘new negotiations disabled

Note: Existing agreements can be updated. This does not impact the parameter updates.

* + C: you want individual management frame to to establish agreement for MAP schemes?
  + C: in the second bullet, what is the negotiation are disabled?
  + C: The second bullet, disabling is per scheme or for all scheme?
  + A: Details are TBD.
  + C: New negotiation is for updating existing?
  + A: It’s just for new negotiation
  + C: there is no new agreement about the parameter still can be updated
  + A: Add note: existing agreements can be updated
  + A: This is just new agreement. We can delete note.
  + C: You don’t allow the update?
  + A: This is for new negotiations, Regarding the update, we can discuss further.

No objection

**SP9: Giovanni Chisci, MAP: 24/1220r1 – Result:**

* Do you support that when an AP (AP2) receives an individually addressed Management frame that initiates a negotiation to establish agreements for M-AP coordination schemes, the AP (AP2) shall respond by using the defined MAPC Public Action frame with the following setting, if the negotiations are enabled:
  + The action field is set to MAPC Negotiation Response

C: is it better if any of negotiations is enabled?

No objection

**SP10: Giovanni Chisci, MAP: 24/1220r1, 23/1887r1, 24/160r1, 24/908r0, 24/0407r0 – Result:**

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

* Target Wake Time field, Broadcast TWT ID field, Broadcast TWT Persistence,
* TWT Wake Interval Mantissa, TWT Wake Interval Exponent, Nominal Minimum TWT Wake Duration

TBD other fields

C: the last bullet in the last parameter I’m not still clear about usage. Could you put it to TBD for now?

C: Can you clarify some example how we can use this parameters for CTWT operation?

C: Let’s run SP.

A: This is baseline parameters. What is the breaking?

C: some people have some use case. Maybe we can discuss later

Recorded voting requested. (See appendix)

97Y, 28N,66A

**SP11: Binita Gupta, L4S: – Result:**

* Do you agree to define in 11bn an optional mechanism for L4S support on the AP as below?
  + Define an MLME primitive that provides congestion notification from the MAC layer to the higher layer at the AP, to enable the upper layer to mark ECN bits on subsequent packets for L4S congestion signaling.
  + Enhance the MA-UNITDATA.request primitive to provide an indication whether the MSDU carries the packet of L4S flow
  + TBD on whether and how AP’s L4S capability is advertised.
  + NOTE - The conditions and criteria based on which the MAC layer determines to signal L4S congestion experienced notification to the upper layer is implementation specific and is outside the scope of this specification.

*Supporting documents: 24/0399, 24/0384, 24/0818, 25/459*

C: in favor of this SP, this is only works within their AP enity

C: what is the reason for making this AP only? Because in principle, congestion could be experiencedby STA when he tries to put a packet on the air.

C: Singaling. Is that no longer considered a concern?

C: in favoer of this SP.

C: Not sure Note 1 and Note 3 should be included in the SFD? We can remove them.

A: I’m fine with removing them.

120Y, 45N, 63A

**SP12-15 are deferred because the documents (25/416 and 415) were not uploaded before the SP.**

**SP16: Do you support that if the SMD is part of an FT mobility domain the following applies?**   
**- the single PMKSA to be used in the SMD is the PMK-R1 SA and is bound to the SMD-ME.**

Deferred Need offline discussion.

**SP17: Liwen Chu, Low Latency: 421r0 – Result:**

* Do you agree to amend Motion #273 as following?
  + TGbn defines or improves an existing mechanism so that a non-AP STA that is a TXOP responder can indicate its buffered ~~low latency~~ LL traffic needs (for traffic from the ~~TxOP~~ TXOP responder to the TxOP TXOP Holder) in a Multi-STA BA frame. The TXOP holder should consider the indication in determining subsequent actions. Subsequent actions related to this indication are out of the scope of the standard.
    - ~~Note: whether an AP can Indicate indicate its low latency needs is TBD~~
    - The Low Latency Indication is included in the Feedback field of the Feedback Per AID TID Info field (the one that carries control feedback).
    - The Feedback Type field is set to 1
      * Note: Feedback Type field set to 0 is used for DUO feedback
    - TBD bits in the Feedback field is defined to provide the low latency need.

C: I have a question regarding the location of the feedback type field. So why we have to set this type field ?

A: other fields are reserved in the this start sequence control as sequence number.

C: Can you remove paranthesis just?

No objection

**SP18: Liwen Chu, Control: 25/425 – Result:**

* Do you support that an UHR STA that sets its NAV timer per the BSRP Trigger frame may reset its NAV timer if the following condition is true
  + No PHY-RXEARLYSIG.indication or PHYRXSTART.indication primitive is received from the PHY during a NAVTimeout period.
  + The NAVTimeout period is equal to (2 × aSIFSTime) + T\_PREAMBLE + T\_SIGNAL + UL\_Length + aRxPHYStartDelay + (2 × aSlotTime).

(see Table 17-5—Timing-related parameters)

Deferred

**SP19: Jay Yang, MAP: 24/1693r3, 23/1836r3, 24/1220r2 – Result:**

* Do agree that TGbn defines a procedure using pre-association security negotiation (PASN ) to derive the key(s) needed to protect individually addressed management frames exchanged between two APs as part of the MAPC operation
* •Note – it is TBD whether any extensions will be needed for PASN .

*Supporting list: 24/1693r3, 23/1836r3, 24/1220r2*

Defer to PM1

**SP20: Dmitry Akhmetov, Channel Access: 24/1918 – Result:**

Do you support that a UHR STA may use P-EDCA

* If P-EDCA option is enabled by the AP to which that STA is associated to
  + Enablement procedure TBD
* May transmit up to TBD but no more than 50 transmissions of DS and up to 2.5 ms of total transmission time to start P-EDCA contention over 50ms interval
  + Note: ETSI regulation of Short Control Signaling transmission
* Shall not initiate more than TBD number of transmissions of DS to start P-EDCA consecutively.
  + Note: consecutive DS transmission are multiple attempts to perform P-EDCA contention w/o falling back to regular EDCA operation

C:First bullet, I’m Not clear P-EDCA option . Can you remove option?

C: Concern on Last bullet, Last bullet is trying toset a lower boundary to start the EDCA the second way is trying to have a higher boundary.

C: For the first bullet, P-EDCA is enabled in the BSS

A I prefer to keep it that as

56Y 87N 22A

DSO PDT

**Do you support to incorporate the proposed text changes for DSO in 11-25/0454r6 into the latest TGbn draft**

No objection

**SP21: Binita Gupta, Roaming: 24/0656 – Result:**

* For seamless roaming, do you support to allow a non-AP MLD to request preparing more than one candidate target AP MLDs in an SMD during the roaming preparation phase?
  + Preparation with multiple AP MLDs is performed using a separate roaming preparation request for each AP MLD
  + If successful roaming preparation was performed with multiple candidate target AP MLDs, then the non-AP MLD shall attempt roaming execution with only one of those target AP MLDs at a time.
    - Retries with other target AP MLDs are permitted for roaming execution

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

No objection

**Abhi’s SP.**

**Do you agree that t**he Co-TDMA sharing AP and the Co-TDMA coordinated AP shall have the same primary 20 MHz channel?

No objection

SP: Do you support that for a Seamless Mobility Domain (SMD), the SMD and the 802.1X Authenticator component in the corresponding SMD-ME are uniquely identified by an SMD Identifier?  
• The SMD identifier is in the format of a 48-bit MAC address  
• The SMD Identifier is used in establishing single PMKSA and PTKSA for a non-AP MLD that associates with the SMD-ME  
 24/1894 24/656 11-24/1889, 11-23/1937, 24/1883

No objection

Adjourned

**Appendix – Recorded votes**

**TUE PM1**

**SP3: Sindhu Verma, ICF: – Result:**

* Do you agree that the I-FCS in a Trigger frame is included as part of 2 contiguous User Info fields known as I-FCS User Info fields

Supporting documents: 23/1873r0, 23/2003r1, 25/0144, 24/497r0, 24/1129r1

|  |  |
| --- | --- |
| Javier Contreras | YES |
| Anirban Karmakar | YES |
| [V] Rocco Di Taranto, Ericsson | NO |
| [v] Necati Canpolat, Intel | YES |
| [V] Rakesh Taori |  |
| Ugo Campiglio | YES |
| [N] Javier Perez-Ramirez, Ofinno | ABSTAIN |
| Chanwoo Allan Kim | YES |
| Blanca Wong Mosquera | YES |
| [V] Kiseon Ryu | YES |
| Mohamed Abouelseoud | YES |
| [PV] Mikhail Liubogoshchev | ABSTAIN |
| Jarkko Kneckt |  |
| Chitto Ghosh | YES |
| [V] Jeongki Kim, Ofinno | ABSTAIN |
| Ethan Zimmer | YES |
| Mamun | YES |
| Matt Swartz |  |
| [V] Marcos Martinez |  |
| [V] Mike Montemurro | NO |
| [V] Greg White - CableLabs | ABSTAIN |
| [V] Clark Carty | YES |
| [V] Wen-Di Shen, National Taiwan University | NO |
| [V] Sang Kim LGE |  |
| [V] Chaoming Luo | ABSTAIN |
| [V] Shubhodeep Adhikari Broadcom | YES |
| Binita Gupta | YES |
| Lalit Garg | YES |
| [V]Ryunosuke Sakamoto, Sharp | YES |
| [V] Yuki Tsujimaru |  |
| [V] Tong Xiao,Xiaomi | NO |
| [V] Qing Xia, Sony | ABSTAIN |
| [V] Xiangxin Gu, Spreadtrum | NO |
| [V] Stephen McCann | NO |
| [V] Hang Su Broadcom | YES |
| [V] Chenchen Liu | NO |
| [V] Siukai Mak, Broadcom | YES |
| [V] Ryuichi Hirata | YES |
| James Yee | ABSTAIN |
| [V] Si-Chan Noh, Newracom | ABSTAIN |
| [V] Woojin Ahn, KNUT | ABSTAIN |
| [V] Shawn(Sanghyun) Kim, WILUS Inc. | YES |
| Veerendra Boodannavar | YES |
| [V] Thomas Derham | YES |
| [V]Kazuyuki Tota Canon | ABSTAIN |
| [V] Frank Chien-Fang Hsu, Mediatek |  |
| [V] David Boldy, Broadcom | YES |
| [V] Yonggang Fang MediaTek | NO |
| [V] M. Kumail Haider | YES |
| [V] Alice Jialing Li Chen | YES |
| [V] Leo Montreuil | YES |
| [V] Hongwon Lee | YES |
| [V]Hanqing Lou, InterDigital | ABSTAIN |
| [V] Laurent Cariou, Intel | YES |
| [V] Xiaofei Wang, InterDigital | NO |
| [V] Serhat Erkucuk, Ofinno | ABSTAIN |
| Federico Lovison | ABSTAIN |
| [V] Youhan Kim (Qualcomm Technologies, Inc.) | YES |
| [V] Yajun Cheng, Xiaomi | NO |
| [V] Dignus-Jan Moelker, Broadcom | YES |
| [V] Wilson Tsao, Mediatek | YES |
| [V] Atsushi Shirakawa | ABSTAIN |
| [V]Jeff Liu, Broadcom | YES |
| [V], Liwen Chu, NXP | YES |
| [V] Tzu-Hsuan Chou | YES |
| Maulik Vaidya | ABSTAIN |
| [v] Jay Yang [ZTE] | NO |
| [V] Jouni Malinen, Qualcomm | YES |
| [V] Hyungjin Kim, Broadcom | YES |
| [V] Renlong Zhou,Sanechips | NO |
| [V] Giovanni Chisci, Qualcomm | YES |
| [V] Genadiy Tsodik | NO |
| [V] Liuming Lu, OPPO |  |
| [V] Mahmoud Hasabelnaby, Huawei | NO |
| [V] Chen-Yi Chang, MediaTek |  |
| [V] Eugene Baik, Qualcomm | YES |
| [NV] Jihye Lee, Samsung | ABSTAIN |
| Samat Shabdanov | NO |
| [V] Duncan Ho | YES |
| [V] Sherief Helwa, Qualcomm Technologies, Inc | YES |
| [V] John Wullert, Peraton Labs | NO |
| [V] George Cherian | YES |
| [V] Jungjun Kim, Samsung Electronics | ABSTAIN |
| Gaius Wee | ABSTAIN |
| [V] Mark RISON | NO |
| Aditi Singh | YES |
| [V] Peyush Agarwal |  |
| [V} Kazuto Yano | ABSTAIN |
| Shivesh Ganotra | YES |
| [V] William Li, Spreadtrum | YES |
| [V] Dmitry Akhmetov, Intel | YES |
| [V] Ronny Yongho Kim, KNUT | ABSTAIN |
| Yunbo Li | NO |
| [V] Subrahmanyam Yanamandra, Broadcom | YES |
| [V] Ashish Shukla, Amazon | ABSTAIN |
| Yongho Seok | YES |
| [V] Dibakar Das, Intel | YES |
| [V] Chung-Ta Ku, Mediatek | YES |
| [V] BIAN Tong, Panasonic | ABSTAIN |
| [V] Albert Bredewoud, Broadcom | YES |
| [V] Huizhao Wang, NXP | YES |
| [V] Hiroyuki Motozuka | ABSTAIN |
| [V] GeonHwan Kim, LGE | YES |
| [V] Martin Eiger, Peraton Labs | ABSTAIN |
| [V] Prabodh Varshney | YES |
| [V] Sanket Kalamkar | YES |
| [V] Zhenpeng Shi, Huawei | NO |
| [V] Yelin Yoon, LGE | YES |
| Wei-Han Chen |  |
| [V] George Chih-Chun Kuo | ABSTAIN |
| [V] Michael Grigat, Deutsche Telekom | ABSTAIN |
| [V] Gaurang Naik, Qualcomm Technologies, Inc. | YES |
| [V] Yan Xin, Huawei | NO |
| [V] Helene Ralle | NO |
| [V] Sangho Seo, Broadcom | YES |
| [PV] Peng Yan, Wi-Fi Alliance | ABSTAIN |
| [V] Rakshith Rajashekar, Broadcom | YES |
| [V] Bin Tian | YES |
| [V] Kyosuke Inoue, SHARP | ABSTAIN |
| [V] Manasi Ekkundi, Samsung Electronics | ABSTAIN |
| Jegan Manoharan | YES |
| [V]Abhijit Bhattacharya, Qualcomm | YES |
| [V] Jason Yuchen Guo | NO |
| [V] Julien SEVIN | YES |
| [V] Romain GUIGNARD Canon | ABSTAIN |
| [A] Shravan | NO |
| [V] Yongsen Ma, Samsung | ABSTAIN |
| [V] Qingwei Fu, TP-Link | ABSTAIN |
| [V] Po-Kai Huang Intel |  |
| [V] Cheng Chen, Intel | YES |
| [V] Subir Das [Peraton Labs] | ABSTAIN |
| [V] Vishnu Ratnam, Samsung Electronics | ABSTAIN |
| [V] Jaheon Gu, Samsung Electronics | NO |
| [V] Jinho Choi, Samsung Electronics | NO |
| Chunyu Hu | ABSTAIN |
| [V] Yue Zhao | NO |
| [V] Abhishek Patil | YES |
| [V] Yue Qi, Samsung Electronics |  |
| [V] Mikael LORGEOUX Canon | YES |
| [V] Patrice NEZOU, Canon | ABSTAIN |
| [V] Yoshio Urabe | ABSTAIN |
| [V] Ming Gan | NO |
| [V] Yen-Hsiung Tseng, MediaTek |  |
| Ankur [Samsung] | ABSTAIN |
| Zach Georgiev | YES |
| [V] Charlie Pettersson, | NO |
| [V] Insun Jang | YES |
| [V] Shimi Shilo | NO |
| [V]Yan Li,ZTE | NO |
| [V] Rishabh Roy, Samsung Electronics | ABSTAIN |
| [V] Li Quan , ZTE | NO |
| [V] Vinko Erceg - Broadcom | YES |
| [V] SunHee Baek, LGE | YES |
| Rani Keren - Huawei | NO |
| [V] Matthew Fischer | YES |
| [V] Seongho Byeon, Samsung Electronics | ABSTAIN |
| [V] Yingqiao Quan, Spreadtrum | ABSTAIN |
| [V] OsamaAboul-Magd[Huawei] | NO |
| [V] Dongju Cha, LGE | YES |
| [V] Guogang Huang | NO |
| [V] Lan Peng | NO |
| [V] Zhongjiang Yan | NO |
| [NV] Tristan HALNA du FRETAY | ABSTAIN |
| [V] Pei Zhou, TCL | ABSTAIN |
| [V] Ross Jian Yu Huawei | NO |
| [V] Arik Klein, Huawei | NO |
| Patil Sandhya [Synaptics Inc.] | YES |
| [V] Zhuqing Tang, Huawei | NO |
| [V] Ezer Melzer, Huawei | NO |
| [V] Ning Gao | YES |
| [V] Yang Hang, Ruijie |  |
| [V] Bo Gong |  |
| [V] Gaurav Patwardhan, HPE | ABSTAIN |
| [V] Behnam Dezfouli | YES |
| 【nv】JianQiang Chen | NO |
| [v]Luis Guitierrez-Broadcom | YES |
| [nv]xu.haidong |  |
| 【nv】Yuanjian Zhang | NO |
| [V] Li-Hsiang Sun | YES |
| [nv]zhigang zhang |  |
| [V] Hui Che, Ruijie | NO |
| [V] Bo Li | NO |
| 【nv】QingLiang Shou | NO |
| [PV]Yi Jiang, ZTE | NO |
| [PV]Zhongyi Wang, ZTE | NO |
| 2338 216 7833 | NO |
| [V] Shuang Fan, Sanechips | NO |
| [V] Steven Qi Wang | NO |
| [V] Domenico Ficara, Cisco | YES |
| [V] Shinya MIWA | ABSTAIN |
| [V] Salvatore Talarico, Nokia | NO |
| Carlos Alcantara |  |
| [V] Pooya Monajemi, Apple |  |
| [V] Rojan Chitrakar, Huawei | NO |
| [V] Abhishek Chaturvedi, Samsung Electronics | ABSTAIN |
| [V] Hank Hyeonjun Sung, WILUS | ABSTAIN |
| [V]Maolin Zhang, Huawei |  |
| [V] Karthik Srinivasa Gopalan, Samsung Electronics | ABSTAIN |
| [V] Claudio da Silva, Meta | YES |
| [v] Manoj Raveendranath [broadcom] | YES |
| Pooria Pakrooh | YES |
| (V) Klaus Doppler, Nokia | YES |
| [V] Mengshi Hu | NO |
| Javier | ABSTAIN |
| [V] Srinath Puducheri, Broadcom | YES |
| [V] Sindhu Verma, Broadcom | YES |
| [V] Lin Yang | YES |
| Minyoung Park | YES |
| [V] Rubayet Shafin, Samsung Electronics | ABSTAIN |
| Morteza Mehrnoush | YES |
| [V] Yusuke Tanaka | ABSTAIN |
| Jinjing Jiang | YES |
| [V] Preston Hunt | ABSTAIN |
| [V]Ravi Gidvani, Samsung | NO |
| [V] Akira Kishida, NTT | ABSTAIN |
| [V] Jonghoe Koo, Samsung Electronics | NO |
| [V] Naveen Kakani | YES |
| [V] Stephane Baron, | ABSTAIN |
| [V] Oded Redlich | NO |
| [PV] Chun Huang, ZTE | NO |
| [V] Zisheng Wang, ZTE | NO |
| [V] Denis Bykov, NXP | YES |
| [V] BO CAO, ZTE | NO |
| Al Dumdei | YES |
| Yanjun Sun | YES |
| [V] John Juhyung Son, WILUS | ABSTAIN |
| Abdalla Hussein | NO |
| [V] Ian Bajaj, Huawei | NO |
| Anonymous | ABSTAIN |
| Anonymous | ABSTAIN |
| Anonymous | NO |
| Anonymous | ABSTAIN |
| Anonymous | NO |
| Anonymous | NO |
| Anonymous | ABSTAIN |
| Anonymous | ABSTAIN |
| Anonymous | YES |
| Anonymous | NO |

**TUE – PM2**

**SP5: Jay Yang, MAP: – Result:**

* Do agree that TGbn defines a procedure using pre-association security negotiation (PASN ) to derive the key(s) needed to protect individually addressed management frames exchanged between two APs as part of the MAPC operation
  + Note – it is TBD whether any extensions will be needed for PASN.

*Supporting list: 24/1693r3, 23/1836r3, 24/1220r2*

|  |  |
| --- | --- |
| [V] Rocco Di Taranto, Ericsson |  |
| Anirban Karmakar | YES |
| Matt Swartz |  |
| [PV] Mikhail Liubogoshchev | YES |
| Chanwoo Allan Kim | YES |
| [N] Javier Perez-Ramirez, Ofinno |  |
| Qi Wang | ABSTAIN |
| Aditi Singh | YES |
| Blanca Wong Mosquera | YES |
| Reza Hedayat | ABSTAIN |
| [V] Ryuichi Hirata | ABSTAIN |
| Minyoung Park | ABSTAIN |
| Yong Liu | ABSTAIN |
| [V] Tong Xiao,Xiaomi | ABSTAIN |
| [V] Yusuke Tanaka | YES |
| [V] Xiangxin Gu, Spreadtrum | YES |
| [V] Martin Eiger, Peraton Labs | ABSTAIN |
| [V] William Li, Spreadtrum | ABSTAIN |
| [V] Liuming Lu, OPPO | YES |
| Mohamed Abouelseoud | NO |
| [V] Serhat Erkucuk, Ofinno | ABSTAIN |
| [V]Hanqing Lou, InterDigital | ABSTAIN |
| [V] Akira Kishida, NTT | ABSTAIN |
| [NV] Tristan HALNA du FRETAY | ABSTAIN |
| [V] Renlong Zhou,Sanechips | YES |
| [V] Mark RISON | ABSTAIN |
| [V] Sherief Helwa, Qualcomm Technologies, Inc | YES |
| [V] Ronny Yongho Kim, KNUT | NO |
| [V] John Wullert, Peraton Labs | ABSTAIN |
| [V] Siukai Mak, Broadcom | YES |
| [V] Youhan Kim (Qualcomm Technologies, Inc.) | YES |
| [V] Hyungjin Kim, Broadcom | ABSTAIN |
| [V] Jungjun Kim, Samsung Electronics | NO |
| Gaius Wee | ABSTAIN |
| Lalit Garg | ABSTAIN |
| [V] Laurent Cariou, Intel |  |
| Brian Hart | YES |
| Phoebe Cheng (鄭淑敏) | NO |
| [V] Yelin Yoon, LGE | ABSTAIN |
| [V] Duncan Ho | YES |
| [V] GeonHwan Kim, LGE | ABSTAIN |
| YH Tseng (曾彥雄) | ABSTAIN |
| [V] Jaheon Gu, Samsung Electronics | NO |
| Anuj Dharap | YES |
| [V] Romain GUIGNARD Canon | ABSTAIN |
| Binita Gupta | YES |
| Maulik Vaidya | ABSTAIN |
| [V] Junbin Chen, TP-Link | ABSTAIN |
| [V]Yan Li,ZTE | YES |
| [V] Hongwon Lee | ABSTAIN |
| Zach Georgiev |  |
| [V] George Cherian | YES |
| [V]Qisheng Huang, ZTE |  |
| [V] Rishabh Roy, Samsung Electronics | ABSTAIN |
| [V]Abhijit Bhattacharya, Qualcomm | YES |
| [V] Mahmoud Hasabelnaby, Huawei | YES |
| [V] BIAN Tong, Panasonic | ABSTAIN |
| [V] Seongho Byeon, Samsung Electronics | NO |
| [V] Li Quan , ZTE | YES |
| [V] Zhongjiang Yan | YES |
| [V] Mikael LORGEOUX Canon | ABSTAIN |
| [A] Shravan | YES |
| [V] Sanket Kalamkar | YES |
| [V] Zhenpeng Shi, Huawei | YES |
| [V] Shinya MIWA | ABSTAIN |
| [V] Jason Yuchen Guo | ABSTAIN |
| Pooria Pakrooh | YES |
| [V] Hank Hyeonjun Sung, WILUS | ABSTAIN |
| Jegan Manoharan | YES |
| James Yee | NO |
| Jarkko Kneckt | ABSTAIN |
| Yanjun Sun | ABSTAIN |
| Morteza Mehrnoush | ABSTAIN |
| [P] Kerstin Johnsson |  |
| Kaiying Lu | NO |
| [V] Zisheng Wang, ZTE |  |
| Chitto Ghosh | ABSTAIN |
| [V] Alice Jialing Li Chen |  |
| Al Dumdei | ABSTAIN |
| [V] Dongju Cha, LGE | ABSTAIN |
| Jinjing Jiang | ABSTAIN |
| [V] Stephen Rodriguez | YES |
| [V] Klaus Doppler | YES |
| [V] Charlie Pettersson, | YES |
| [V] Hui Luo, Infineon |  |
| [V] Jeongki Kim, Ofinno | ABSTAIN |
| [V] Kiseon Ryu | ABSTAIN |
| [V] John Juhyung Son, WILUS | ABSTAIN |
| [V]Ravi Gidvani, Samsung | NO |
| [P] Eda Genc, Nokia | YES |
| Mamun | ABSTAIN |
| [V] Clark Carty | YES |
| [V] Hang Su Broadcom | YES |
| [V] Greg White - CableLabs | ABSTAIN |
| [V]Kazuyuki Tota Canon | ABSTAIN |
| [V] Nehru Bhandaru | YES |
| [V] Woojin Ahn, KNUT | ABSTAIN |
| [V] Atsushi Shirakawa | ABSTAIN |
| [V] M. Kumail Haider | YES |
| [V] Wen-Di Shen, National Taiwan University | ABSTAIN |
| [V] Mike Montemurro | YES |
| [V] David Boldy, Broadcom |  |
| [V] Chaoming Luo | YES |
| [V]Ryunosuke Sakamoto, Sharp | YES |
| Veerendra Boodannavar | ABSTAIN |
| [V]Jeff Liu, Broadcom | ABSTAIN |
| [V] Yuki Tsujimaru | ABSTAIN |
| [V] Stephen McCann | ABSTAIN |
| [V] Qing Xia, Sony | ABSTAIN |
| [v] Necati Canpolat, Intel | NO |
| [v] Jay Yang [ZTE] | YES |
| Ian Procyk | YES |
| [V] Yonggang Fang MediaTek |  |
| [PV]Yi Jiang, ZTE | YES |
| [V] Jonghoe Koo, Samsung Electronics | NO |
| [V] Ning Gao | YES |
| [V] Giovanni Chisci, Qualcomm | YES |
| [V] Frank Chien-Fang Hsu, Mediatek | NO |
| [V] Denis Bykov, NXP | ABSTAIN |
| [V] Robert Sosack Molex | ABSTAIN |
| [PV] Chun Huang, ZTE | YES |
| [V] Yurong Qian, ZTE | YES |
| [V] Vishnu Ratnam, Samsung Electronics | NO |
| [V] Junghoon Suh, Huawei | ABSTAIN |
| [V] Sang Kim LGE | ABSTAIN |
| [PV]Zhongyi Wang, ZTE | YES |
| Yaodong Zhang ,ZTE | YES |
| [V] Prabodh Varshney | YES |
| [V] Dmitry Akhmetov, Intel | ABSTAIN |
| [V] Dignus-Jan Moelker, Broadcom | ABSTAIN |
| [V] Shuyu Shi, TP-Link | NO |
| [V] Paul Cheng, MediaTek Inc | NO |
| Başak Ak Özbakış | YES |
| [V] Hiroyuki Motozuka | ABSTAIN |
| [V] Lili Hervieu | ABSTAIN |
| [V] Chung-Ta Ku, Mediatek |  |
| [V] Yoshio Urabe | YES |
| [V] Wayne ChengYing Wu, Mediatek | NO |
| [V] Tuncer Baykas, Self | ABSTAIN |
| [V] Jinho Choi, Samsung Electronics | NO |
| [V] Naveen Kakani | YES |
| [V] Abhishek Patil | YES |
| [V] Wilson Tsao, Mediatek | NO |
| [V] BO CAO, ZTE | YES |
| [V] Gaurang Naik Qualcomm | YES |
| Rani Keren - Huawei | YES |
| [V] Kyosuke Inoue, SHARP |  |
| [V] Taeyoung Ha, Samsung Electronics | NO |
| [V] Guogang Huang | YES |
| 【nv】Yuanjian Zhang | YES |
| [V] Helene Ralle | YES |
| 2338 216 7833 | YES |
| [V] Huizhao Wang, NXP | YES |
| [V] Yingqiao Quan, Spreadtrum | YES |
| [A] Abdalla Hussein, Huawei | YES |
| [V] Qingwei Fu, TP-Link | ABSTAIN |
| Yunbo Li | YES |
| Bo Xiao ,ZTE |  |
| [V] Shuang Fan, Sanechips | YES |
| [V] Hank ChiHan Huang | NO |
| [V] Manasi Ekkundi, Samsung Electronics | NO |
| [V] Li-Hsiang Sun | ABSTAIN |
| [V] YUN LI, ZTE | YES |
| [V] Sai [Synaptics Inc] | YES |
| [V] Gaurav Patwardhan, HPE | ABSTAIN |
| [V] Lan Peng | YES |
| [V} Kazuto Yano | YES |
| [V] Yue Zhao | YES |
| [V] Cheng Chen, Intel | ABSTAIN |
| [V] Kosuke Aio, Sony | YES |
| [V] SunHee Baek, LGE | ABSTAIN |
| [V] GaborB, Mediatek | NO |
| [V] OsamaAboul-Magd[Huawei] | ABSTAIN |
| 【nv】QingLiang Shou | YES |
| [V] Ming Gan | YES |
| [V] Dibakar Das, Intel |  |
| 【nv】JianQiang Chen | YES |
| [V] Rubayet Shafin, Samsung Electronics | NO |
| [V] Insun Jang | ABSTAIN |
| [V] Salvatore Talarico, Nokia | NO |
| [V] Subir Das [Peraton Labs] | ABSTAIN |
| [V] Arik Klein, Huawei | YES |
| [V] Abhishek Chaturvedi, Samsung Electronics | NO |
| [V] Pei Zhou, TCL |  |
| [V] Karthik Srinivasa Gopalan, Samsung Electronics | NO |
| [V] Steven Qi Wang | YES |
| [V] Pooya Monajemi, Apple | ABSTAIN |
| [V] Karim Nassiri Toussi, BRCM | ABSTAIN |
| [V] Yongsen Ma, Samsung | NO |
| Daniel Borges |  |
| （V）Dong Han, Apple |  |
| [V] Bo Li | YES |
| [V] Yanchun Li, Huawei | YES |
| [V] Behnam Dezfouli |  |
| [V] Yuki Tsujimaru |  |
| [V] Prabodh Varshney |  |
| [V] Al Petrick, |  |
| [V] Peshal Nayak, Samsung Electronics |  |
| Stephan Friedl |  |
| [V] Dave Cavalcanti |  |
| [V] Inaki Val, MaxLinear |  |
| Javier |  |
| [v] Sean Coffey |  |
| Anonymous | NO |
| Anonymous |  |
| Anonymous | NO |
| Anonymous |  |
| Anonymous | NO |
| Anonymous |  |
| Anonymous |  |

**THUR AM1**

**SP10: Giovanni Chisci, MAP: 24/1220r1, 23/1887r1, 24/160r1, 24/908r0, 24/0407r0 – Result:**

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

* Target Wake Time field, Broadcast TWT ID field, Broadcast TWT Persistence,
* TWT Wake Interval Mantissa, TWT Wake Interval Exponent, Nominal Minimum TWT Wake Duration

TBD other fields

|  |  |
| --- | --- |
| Anirban Karmakar | YES |
| [P] Eda Genc, Nokia |  |
| [V] Kiseon Ryu | ABSTAIN |
| [V] Yurong Qian, ZTE |  |
| [V] Leo Montreuil | ABSTAIN |
| [V] Nehru Bhandaru |  |
| [V] Pooya Monajemi, Apple | YES |
| (NV) Yuta Mizuno, Sharp | YES |
| [V] Yun Li, ZTE |  |
| [V] Wen-Di Shen, National Taiwan University | NO |
| [V] Guogang Huang | NO |
| [V] Jiyang Bai, TCL | ABSTAIN |
| [V] Stephen Rodriguez | YES |
| [V] Rocco Di Taranto, Ericsson | ABSTAIN |
| Blanca Wong Mosquera | YES |
| [V] Rolf de Vegt | YES |
| [V] Serhat Erkucuk, Ofinno | YES |
| Jinjing Jiang | YES |
| [V] Stephen McCann | NO |
| Jarkko Kneckt | YES |
| [V]Ravi Gidvani, Samsung | YES |
| [V] Mike Montemurro | NO |
| Yan (ATG) Zhang |  |
| Nima Namvar |  |
| [V] Shawn(Sanghyun) Kim, WILUS Inc. | YES |
| [N] Javier Perez-Ramirez, Ofinno |  |
| Mamun | YES |
| [V] Jiayi Zhang (Vincent), Ofinno | ABSTAIN |
| Ethan Zimmer | YES |
| [V] Marcos Martinez |  |
| Anuj Batra | YES |
| [V] Xiaofei Wang, InterDigital | YES |
| [V] Rui Yang, InterDigital | ABSTAIN |
| Morteza Mehrnoush | YES |
| [V]Hanqing Lou, InterDigital | ABSTAIN |
| Binita Gupta | YES |
| [V] Charlie Pettersson, | NO |
| Chanwoo Allan Kim | YES |
| [V] Ryuichi Hirata | YES |
| [A] Menanor Samuel Kwamena, Hanbat National University |  |
| [V] Bo Cao, ZTE | ABSTAIN |
| [V] Toshizo Nogami | YES |
| [V] Sang Kim LGE | YES |
| Yanjun Sun | YES |
| [V] Xiangxin Gu, Spreadtrum | YES |
| Wook Bong Lee | YES |
| [V] Hank Hyeonjun Sung, WILUS | YES |
| Qi Wang | YES |
| [NV] Jihye Lee, Samsung |  |
| [V] Ying Wang | ABSTAIN |
| [V] Mike Davis, Nordic Semiconductor | ABSTAIN |
| [V] Ashish Shukla, Amazon | ABSTAIN |
| [V] Dignus-Jan Moelker, Broadcom | ABSTAIN |
| [V] Leonardo Lanante, Ofinno | NO |
| Yong Liu | YES |
| [V] Lili Hervieu |  |
| Mehdi Ganji |  |
| Samat Shabdanov |  |
| [V] Gaurang Naik Qualcomm | YES |
| [NV] Yusuke Okumoto | ABSTAIN |
| [V] Chenchen Liu | NO |
| [V] Seongho Byeon, Samsung Electronics | YES |
| Reza Hedayat | ABSTAIN |
| [V] Shuntaro Suzuki, Yamaha | ABSTAIN |
| [V] Robert Sosack Molex | YES |
| [V] Jonghoe Koo, Samsung Electronics | ABSTAIN |
| [V] Mark RISON | ABSTAIN |
| [V] Mor Reich Huawei |  |
| [V] Sherief Helwa, Qualcomm Technologies, Inc | YES |
| [V] Michael Grigat, Deutsche Telekom | ABSTAIN |
| [V] Ning Gao | ABSTAIN |
| Mohamed Abouelseoud | YES |
| [v] Sai [Synaptics] | ABSTAIN |
| Wei-Han Chen |  |
| [V] John Wullert, Peraton Labs | ABSTAIN |
| Matthew Chappell, Cox Communications | YES |
| [V] Tong Xiao,Xiaomi | ABSTAIN |
| [V] Buki Adakeja, Teradyne Inc | ABSTAIN |
| [v], Liwen Chu, NXP |  |
| [V] Ju Yan Pan, Huawei | ABSTAIN |
| [V] Mao Yu, Ripple | ABSTAIN |
| [V] Joonsoo, Newracom | ABSTAIN |
| [V] Shachar Shayovitz |  |
| [V] Samith Abeywickrama - Huawei | NO |
| [NV] Tristan HALNA du FRETAY | ABSTAIN |
| Avner Epstein |  |
| [V] Yusuke Tanaka | ABSTAIN |
| [V]Kazuyuki Tota Canon | ABSTAIN |
| [V] Alireza Ghaderipoor, MediaTek |  |
| [V] Tuncer Baykas, Self | YES |
| [V] Paul Cheng, MediaTek Inc | YES |
| [V] Atsushi Shirakawa | ABSTAIN |
| [V] M. Kumail Haider | YES |
| Yunbo Li |  |
| [V] Alice Jialing Li Chen | YES |
| [V] Bo Gong | NO |
| [V] Helene Ralle | YES |
| [V]Haozheng Li,TP-Link System Inc. | ABSTAIN |
| [V] Mahmoud Kamel | ABSTAIN |
| Al Dumdei | YES |
| [V] Allert van Zelst |  |
| [V] GeonHwan Kim, LGE | YES |
| [V] Eunsung Jeon | YES |
| [V] Manish Kumar - NXP |  |
| [V] Venkatesh, Silicon Labs | YES |
| [V] Prabodh Varshney | YES |
| [V] Rakshith Rajashekar, Broadcom | YES |
| [V] Jing Guo, NXP |  |
| Yongho Seok | NO |
| [V] Dana Ciochina-Kar Sony | YES |
| [V] William Li, Spreadtrum | YES |
| [V]Abhijit Bhattacharya, Qualcomm | YES |
| [V] Ronny Yongho Kim, KNUT |  |
| [V] Xuwen Zhao, TCL | ABSTAIN |
| [P] Kerstin Johnsson |  |
| Phoebe Cheng (鄭淑敏) |  |
| [V] Chaoming Luo | YES |
| [V] Akira Kishida, NTT | ABSTAIN |
| [V] Yelin Yoon, LGE | YES |
| James Yee | YES |
| Gerald KERGOURLAY | ABSTAIN |
| Aditi Singh |  |
| [V] Paul Fletcher, Samsung |  |
| Brian Hart | YES |
| [V] Jouni Malinen, Qualcomm | YES |
| [V] Walaa SAHYOUN - Canon | ABSTAIN |
| [V] Julien SEVIN | ABSTAIN |
| [V] Dmitry Akhmetov, Intel | YES |
| [V] Manasi Ekkundi, Samsung Electronics | YES |
| Zach Georgiev | YES |
| [V] Li-Hsiang Sun | YES |
| [V] Hongwon Lee | YES |
| [PV]Zhongyi Wang, ZTE | ABSTAIN |
| [V] Geert Awater |  |
| [V]Ryunosuke Sakamoto, Sharp | YES |
| Anuj Dharap | YES |
| [V] Jeongki Kim, Ofinno | NO |
| [V] Renlong Zhou,Sanechips | ABSTAIN |
| [V] Okan Mutgan, Nokia |  |
| [V] Junghoon Suh, Huawei | NO |
| [V] Hiroyuki Motozuka | YES |
| [V] Siaud Isabelle Orange | YES |
| [V] Abhishek Patil | YES |
| [V] Insun Jang | YES |
| [V] Ryota Yamada |  |
| Gaius Wee | YES |
| [V] Zhuqing Tang, Huawei | NO |
| [V] Mahmoud Hasabelnaby, Huawei | NO |
| [V} Ali Raissinia, Qualcomm Inc. | YES |
| [V] Jungjun Kim, Samsung Electronics | YES |
| [PV]Yi Jiang, ZTE |  |
| [V] Yaoshen Cui, TP-Link |  |
| [V]Yan Li,ZTE | ABSTAIN |
| [V] Daniel Verenzuela | YES |
| [V] Dongju Cha, LGE | YES |
| [V] Subir Das [Peraton Labs] | ABSTAIN |
| (V) manoj raveendranath kamath | ABSTAIN |
| [V] Qingwei Fu, TP-Link | ABSTAIN |
| [V] Junbin Chen, TP-Link | YES |
| [V] Jaheon Gu, Samsung Electronics | YES |
| [V] Giovanni Chisci, Qualcomm | YES |
| [V] Yang Hang, Ruijie | ABSTAIN |
| [V] Yingqiao Quan, Spreadtrum | ABSTAIN |
| [PV] Huang Chun, ZTE |  |
| [v] Jay Yang [ZTE] | ABSTAIN |
| [V] Karthik Srinivasa Gopalan, Samsung Electronics | ABSTAIN |
| Qisheng Huang ZTE | ABSTAIN |
| [A] Abdalla Hussein, Huawei | NO |
| Qisheng Huang ZTE |  |
| [V] Hui Che, Ruijie |  |
| Xu CHEN |  |
| [V] Ross Jian Yu Huawei | NO |
| [V] Martin Eiger, Peraton Labs | ABSTAIN |
| [V] Jinsoo Choi | YES |
| [V] Matthew Fischer | YES |
| [V} Kazuto Yano | ABSTAIN |
| 【nv】Yuanjian Zhang |  |
| [V] Sanket Kalamkar | YES |
| [V] Romain GUIGNARD Canon | ABSTAIN |
| [V] Shinya MIWA | ABSTAIN |
| Yaodong Zhang ,ZTE |  |
| [V]Suhwook Kim, Samsung Electronics | YES |
| [V] SunHee Baek, LGE | YES |
| [V] Jinho Choi, Samsung Electronics | YES |
| [V] Srinivas Kandala | ABSTAIN |
| [V] Rishabh Roy, Samsung Electronics | YES |
| [V] Jason Yuchen Guo | NO |
| 【nv】QingLiang Shou | ABSTAIN |
| [V] Abhishek Chaturvedi, Samsung Electronics | YES |
| [V] B Hari Ram |  |
| Minyoung Park | YES |
| [PV] Zigui Yang, Samsung |  |
| [V] Rubayet Shafin, Samsung Electronics | YES |
| [V] Kosuke Aio, Sony | ABSTAIN |
| [V] Li Quan , ZTE | ABSTAIN |
| [V] Frank Chien-Fang Hsu, Mediatek | YES |
| [V] Kaikai Huang, Nokia | YES |
| [V] Zhenpeng Shi, Huawei | NO |
| [V] Lan Peng | NO |
| [V] Kamran Ali | ABSTAIN |
| [V] Liuming Lu, OPPO | YES |
| [V] Yan Xin, Huawei |  |
| [V] Yue Zhao | NO |
| [PV]Jun Minotani | YES |
| [V] Duncan Ho | YES |
| [V] Genadiy Tsodik | NO |
| [V] Dibakar Das, Intel | YES |
| [V] Zhongjiang Yan |  |
| [V] Ming Gan | NO |
| [V] Salvatore Talarico, Nokia | YES |
| [V] Azin Neishaboori, GM | ABSTAIN |
| [A] Shravan | NO |
| 2338 216 7833 | NO |
| [V] Mikael LORGEOUX Canon | ABSTAIN |
| Sandhya Patil | ABSTAIN |
| [V] Bruce HaoHua Kang | YES |
| [V] Pei Zhou, TCL | ABSTAIN |
| [V] Peshal Nayak, Samsung | YES |
| [V] George Chih-Chun Kuo | ABSTAIN |
| YuHsien Chang |  |
| [V] Yen-Hsiung Tseng, MediaTek | YES |
| [V]HungTao Hsieh, Mediatek |  |
| [V] Rani Keren - Huawei | NO |
| [V] Hank ChiHan Huang | YES |
| Ankur [Samsung] | YES |
| [V] Vishnu Ratnam, Samsung Electronics | YES |
| [V] Yuki Tsujimaru | ABSTAIN |
| [V] Dong Wei | ABSTAIN |
| [V] Kyosuke Inoue, SHARP | ABSTAIN |
| (V) Klaus Doppler, Nokia | YES |
| [V] Shuang Fan, Sanechips | NO |
| [A]Huixuan Zhou, OPPO | YES |
| [V] Bo Li | NO |
| [V] Oded Redlich |  |
| Kanke Wu | YES |
| [V] Zisheng Wang, ZTE |  |
| [V] Sindhu Verma, Broadcom |  |
| [V] Yongsen Ma, Samsung |  |
| [V] Yanchun Li, Huawei |  |
| tomo adachi |  |
| [NV] Jianqiang Chen（ZTE） |  |
| [V] OsamaAboul-Magd[Huawei] |  |
| [PV] Robert Hsi-Chang Yang |  |
| Dong Han |  |
| Chitto Ghosh |  |
| [V] John Juhyung Son, WILUS |  |
| [V]Kazuyuki Tota Canon |  |
| [V] Ke Zhong, Ruijie Networks |  |
| ViceChair 802-11 |  |
| [V] George Cherian |  |
| Lalit Garg |  |
| [V] Thomas Handte, Sony |  |
| [V] Aiguo Yan, Samsung |  |
| Srividhya |  |
| [V] Huizhao Wang, NXP |  |
| [V] Ian Bajaj, Huawei |  |
| [V] Sixian Luo, Sharp |  |
| (NV) Cheng-Ming Chen |  |
| [V] Yue Qi, Samsung Electronics |  |
| Lyutianyang Zhang |  |
| Federico Lovison |  |
| [V] Shubhodeep Adhikari Broadcom |  |
| Dave Scott |  |
| Jegan Manoharan |  |
| [PV] Mikhail Liubogoshchev |  |
| Greg White |  |
| xu.haidong（ZTE） |  |
| [V] Rojan Chitrakar, Huawei |  |
| [V] Bin Qian, Huawei |  |
| [V] Bruce HaoHua Kang |  |
| Javier Perez-Ramirez |  |
| [V] Albert Bredewoud, Broadcom |  |
| Javier |  |
| Rong Zhang |  |
| [V] Clark Carty |  |
| [V] Woojin Ahn, KNUT |  |
| [V] M. Kumail Haider |  |
| [V] Leonardo Lanante, Ofinno |  |
| [V]Kazuyuki Tota Canon |  |
| [V] David Boldy, Broadcom |  |
| [V] Timothy Jeffries - Futurewei |  |
| [V] Vinko Erceg - Broadcom |  |
| Bo Xiao ,ZTE |  |
| [V] Dibakar Das, Intel |  |
| Nan Cheng，XiDian University |  |
| [v] manoj raveendranath [Broadcom] |  |
| [V] Panpan Li |  |
| [V] Dave Cavalcanti |  |
| [NV] Jianqiang Chen（ZTE） |  |
| [V]Steve Yang Mediatek |  |
| Yaron Ben-Arie Huawei |  |
| Daniel Borges |  |
| Mamun |  |
| [V] Shimi Shilo |  |
| [V] Naveen Kakani |  |
| Anonymous |  |
| Anonymous |  |
| Anonymous |  |
| Anonymous |  |
| Anonymous |  |
| Anonymous |  |
| Anonymous |  |
| Anonymous | NO |
| Anonymous | ABSTAIN |
| Anonymous |  |
| Anonymous |  |
| Anonymous |  |