IEEE P802.11
Wireless LANs

|  |
| --- |
| ARC SC Mixed Mode Minutes November 2024 – Plenary |
| Date: 2024-11-12 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Joseph LEVY | InterDigital Communication, Inc. | 111 W 33rd StreetNew York, NY 10120 | +1.631.622.4139 | jslevy@ieee.org  |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This document contains the minutes of the IEEE 802.11 ARC SC mixed mode meeting held on 12 November 2024 10:30-12:30 h PST and 12 November 2024 16:00-18:00 h PST.

Note: Highlighted text are action items. A- precedes comments from the document’s author, C- precedes comments, R- precedes responses to comments.

**Contents:**

[Tuesday 12 November at 10:30-12:30 PST 3](#_Toc185004014)

[Administration: 3](#_Toc185004015)

[Approval of the Agenda (Slides 16) 3](#_Toc185004016)

[ARC - Other (slide 17) 3](#_Toc185004017)

[Approval meeting minutes (slide 18) 3](#_Toc185004018)

[Annex G way forward – Step 2 (slide 19) 4](#_Toc185004019)

[IEEE Std 802 revision (slide 20) 4](#_Toc185004020)

[Recessed - 12:32 PST 4](#_Toc185004021)

[Tuesday 12 November at 16:00-18:00 PST 4](#_Toc185004022)

[Administration: 4](#_Toc185004023)

[The Chair reviewed the approved Agenda (Slides 16) 5](#_Toc185004024)

[WBA liaison on QoS (and L4S) (slide 22) 5](#_Toc185004025)

[Next Steps (slide 23) 6](#_Toc185004026)

[Adjourned: 17:07 PST 6](#_Toc185004027)

# Tuesday 12 November at 10:30-12:30 PST

## Administration:

**Chair: Mark Hamilton, Ruckus/CommScope**

**Vice Chair: Joseph Levy, InterDigital**

**Secretary: Joseph Levy, InterDigital**

**Meeting called to order by the Chair at 10:31 PST**

Agenda slide deck: [11-24/1728r2](https://mentor.ieee.org/802.11/dcn/24/11-24-1728-02-0arc-arc-sc-agenda-november-2024.pptx)

Agenda Slides 4-15:

Registration Reminder

Reminders to Attendees

Call for Patents:

The Chair reviewed the Patent policy and called for potentially essential patents – there was no response to the call.

IEEE SA Copyright Policy:

The chair reviewed the Copyright policy.

Participation:

The Chair reviewed the participation policy.

## Approval of the Agenda (Slides 16)

* **Two meeting slots this week, both Tuesday: AM2 and PM2**
* **Attendance, noises/recording, meeting protocol reminders**
* **Policies, duty to inform, participation rules**
* **Approve meeting minutes (slide 18)**
* **Contribution/discussion topics:**
	+ Annex G way forward (slide 19) – AM2
	+ IEEE Std 802 project and related internal work (slides 20 and 21) – AM2
	+ WBA liaison on QoS, and L4S (slide 22) – PM2
* **Next steps** (slide 23) – including plan for L4S discussion

The Chair reviewed the agenda and called for comments and additions.

Approved by unanimous consent.

## ARC - Other (slide 17)

The chair reviewed slide 17

## Approval meeting minutes (slide 18)

Motion to approve the minutes of:

**September Interim:** [**11-24/1387r0**](https://mentor.ieee.org/802.11/dcn/24/11-24-1387-00-0arc-arc-sc-mixed-mode-minutes-september-2024-interim.docx)

**Oct 28 telecon:** [**11-24/1763r0**](https://mentor.ieee.org/802.11/dcn/24/11-24-1763-00-0arc-arc-sc-28-october-2024-teleconference-minutes.docx)

Discussion none.

Result: UC

## Annex G way forward – Step 2 (slide 19)

[11-24/0880r4](https://mentor.ieee.org/802.11/dcn/23/11-23-0880-04-0arc-revised-annex-g-containing-example-frame-exchange-sequences.docx) – presented by Harry and discussed at length

Discussion summary:

The need to understand Frame Exchange Sequences (FES) is important:

There are operations that need to wait for the completion of a FES before they can begin. e.g., Scan, Sync, BSS initialization, Power Management mode/state.

When a FES ends for a STA in not always clear.

Two views of FES were discussed 1) FES are between 2 peers and 2) multi STA FES need to be clearly defined.

Discussion on “control” of the WM and what it means, considering OBSS, interference, NAV setting. The impact of beamforming (is it the same of a different WM), spatial reuse needs to be considered.

Discussed Doze state, Awake state, in the power management mode. Active mode is related to the Awake state. Discussion on 11.2.1, 11.2.3.9, and 3.1 – discussing the states and modes.

A way forward was agreed – clarify FES their use and meaning in the Annex and then deal with any normative text clarifications.

## IEEE Std 802 revision (slide 20)

Joseph Levy presented [11-24/1922r0](https://mentor.ieee.org/802.11/dcn/24/11-24-1922-00-0000-802revc-status-november-2024-update.pptx)

Some discussion was had.

**P802REVc – Other ARC work (slide 21)**

The Chair provided a review of the open items – listing the possible areas/topics ARC might address.

Beamforming should be added to access domain discussion.

A brief discussion on VLANs was had – referencing [11-24/1904r4](https://mentor.ieee.org/802.11/dcn/24/11-24-1904-04-0wng-vlan-segregated-data-services.pptx).

## Recessed - 12:32 PST

# Tuesday 12 November at 16:00-18:00 PST

## Administration:

**Chair: Mark Hamilton, Ruckus/CommScope**

**Vice Chair: Joseph Levy, InterDigital**

**Secretary: Joseph Levy, InterDigital**

**Meeting called to order by the Chair at 16:05 PST**

Agenda slide deck: 11-24/1728r5

Agenda Slides 4-15:

Registration Reminder

Reminders to Attendees

Call for Patents:

The Chair reviewed the Patent policy and called for potentially essential patents – there was no response to the call.

IEEE SA Copyright Policy:

The chair reviewed the Copyright policy.

Participation:

The Chair reviewed the participation policy.

## The Chair reviewed the approved Agenda (Slides 16)

* **Two meeting slots this week, both Tuesday: AM2 and PM2**
* **Attendance, noises/recording, meeting protocol reminders**
* **Policies, duty to inform, participation rules**
* **Approve meeting minutes (slide 18)**
* **Contribution/discussion topics:**
	+ Annex G way forward (slide 19) – AM2
	+ IEEE Std 802 project and related internal work (slides 20 and 21) – AM2
	+ WBA liaison on QoS, and L4S (slide 22) – PM2
* **Next steps** (slide 23) – including plan for L4S discussion

The Chair called for comments and additions to the agenda. None were provided

Agreed by unanimous consent.

## WBA liaison on QoS (and L4S) (slide 22)

**The Chair reviewed the following status:**

**Incoming liaison:**

* [**11-24/1569r0**](https://mentor.ieee.org/802.11/dcn/24/11-24-1569-00-0000-liaison-from-wba-guidelines-for-l4s.docx) **Liaison letter**
* [**11-24/1617r0**](https://mentor.ieee.org/802.11/dcn/24/11-24-1617-00-0arc-overview-of-wba-l4s-implementation-guidelines.pptx) **L4S overview and summary of WBA paper (presented by Greg White)**
	+ - (Also [11-23/0838r1](https://mentor.ieee.org/802.11/dcn/23/11-23-0838-01-0000-wba-liaison-re-qos.docx))
* **Proposed (interim) response:** [**11-24/1933r1**](https://mentor.ieee.org/802.11/dcn/24/11-24-1933-01-0arc-proposed-response-to-wba-on-implementation-guidelines-for-l4s.docx)

**Coordination/alignment with TGbn and REVmf**

* [**11-24/1931r0**](https://mentor.ieee.org/802.11/dcn/24/11-24-1931-00-0arc-subgroup-chairs-recommendation-on-l4s-activity.pptx)

The Chair asked the group if there was any preference for order of the presentation of these documents. None was given – they will be taking in the order listed.

[**11-24/1933r1**](https://mentor.ieee.org/802.11/dcn/24/11-24-1933-01-0arc-proposed-response-to-wba-on-implementation-guidelines-for-l4s.docx) – reviewed by the Chair.

Some detailed – editorial corrections/wordsmithing – see r2.

It was noted by the Chair that this will probably not be the final version as input from TGbn, TGmf, the 802.11 WG, and the 802.11 WG Chair will be probably occur.

Post meeting:

Version r3 and r4 were posted ([**11-24/1933r3**](https://mentor.ieee.org/802.11/dcn/24/11-24-1933-03-0arc-proposed-response-to-wba-on-implementation-guidelines-for-l4s.docx)**,** [**11-24/1933r4**](https://mentor.ieee.org/802.11/dcn/24/11-24-1933-04-0arc-proposed-response-to-wba-on-implementation-guidelines-for-l4s.docx)**)**

[**Liaison to Wireless Broadband Alliance**](https://grouper.ieee.org/groups/802/11/Liaisons/2024-11-15%20response%20to%20WBA%20liaison%20on%20implementation%20guidelines%20for%20L4S.pdf) was sent to WBA

[**11-24/1931r0**](https://mentor.ieee.org/802.11/dcn/24/11-24-1931-00-0arc-subgroup-chairs-recommendation-on-l4s-activity.pptx)– reviewed by the Chair

Slide 4 provides a proposed way forward to distribute the work (in ARC SC, TGmf, TGbn).

Discussion on L4S implementation. The need for queue management was discussed. Multiple views were expressed: 1) queue management is necessary and require changes to 802.11 2) can this be done as an implementation (not specified)? 3) Where does this work need to be done (if a hardware change in TGbn or if not in TGmf, discussed not agreed)? 4) The discussion that are ongoing in TGbn should be completed. 5) A question was raised on why L4S is starting with 802.11 and not any of the other 802s – one possible view is that other networks DOSSIS and 3GPP may use 802.11 without 802.1, 802.3, and other typical 802 family network capabilities.

## Next Steps (slide 23)

**L4S discussion continued?**

**Contributions requested/expected:**

Annex G

QoS/L4S topic

Changes to align with IEEE Std 802 (removal of EPD/LPD, etc.)

“Other” (slide 17) – LMME

**Jan session planning**

1 or 2 slots? Ask for 3 slots

Topics? Annex G, 802REVc, WBA QoS/L4S liaison follow-up, “Other” (slides 20 & 17)

**Next Teleconference(s):**

Nov to Jan teleconference plan… Any/How many telecons? None planned – but if desired on 10 day notice.

Conflicts to avoid:

Continue with Monday 1PM ET (2 hours) or 2PM ET (1 hour)? Dates to avoid??

Will be coordinated with other TG chairs, and announced later

## Adjourned: 17:07 PST

Final Agenda: [11-24/1728r6](https://mentor.ieee.org/802.11/dcn/24/11-24-1728-06-0arc-arc-sc-agenda-november-2024.pptx)

Closing Report: [11-24/1957r0](https://mentor.ieee.org/802.11/dcn/24/11-24-1957-00-0arc-arc-closing-report-nov-2024.pptx)