IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ARC SC teleconferences minutes 2 December 2021 | | | | |
| Date: 2021-12-02 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Joseph LEVY | InterDigital Communication, Inc. | 111 W 33rd Street New York, NY 10120 | +1.631.622.4139 | [jslevy@ieee.org](mailto:jslevy@ieee.org) |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This document contains the minutes of the IEEE 802.11 ARC SC teleconference held on 2 December 2021 at 19:00-21:00 h ET.

r1: Added Attendance

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

**Contents:**

[Thursday 02 December 2021, 19:00-21:00 h ET 3](#_Toc93276473)

[Administration: 3](#_Toc93276474)

[802 Technical Plenary, Thurs, Dec 2, 4pm-6pm ET 4](#_Toc93276475)

[Annex G way forward contribution/discussion: 4](#_Toc93276476)

[Clause 6 discussion (if time): 11-21/1822r0 presented by Graham Smith. 5](#_Toc93276477)

[Next Steps: 6](#_Toc93276478)

[Adjourned: 21:00 h ET 6](#_Toc93276479)

[Attendance: 7](#_Toc93276480)

# Thursday 02 December 2021, 19:00-21:00 h ET

## Administration:

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

**Vice Chair: Joseph Levy, InterDigital**

**Secretary: Joseph Levy, InterDigital**

**Meeting called to order by the Chair 19:06 ET**

Agenda slide deck: [11-21/1938r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1938-01-0arc-arc-sc-agenda-dec-2-2021.pptx)

**Agenda Slides 4-14:**

**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:**

* **Attendance, noises/recording, meeting protocol reminders**
* **Policies, duty to inform, participation rules**
* **Review todays 802 Technical Plenary (Thurs, Dec 2, 2pm-4pm)**
  + See 802 tele calendar for details: <https://ieee802.org/802tele_calendar.html>
* **Annex G way forward contribution/discussion:**
  + **Current plan:** 
    - Replace any references in main body text (to Annex G or “frame exchange sequence” in various spellings) with normative text in-place, add definition(s), etc. - Done
    - Create a new and more useable Annex G with a friendly notation/style and cross-references to main body text for technical details – make it more of an introduction/overview of 802.11 frame exchanges
  + **Begin discussion on “replacement” for Annex G:**
    - Proposal for New Annex G Frame Exchange Sequence Descriptions –[11-21-1797/02](https://mentor.ieee.org/802.11/dcn/21/11-21-1797-02-0arc-proposal-for-new-annex-g-frame-exchange-sequence-descriptions.docx) - Harry Bims
* **Clause 6 discussion (if time):** [**11-21/1822r0**](https://mentor.ieee.org/802.11/dcn/21/11-21-1822-00-0arc-clause-6-discussion.docx)

The Chair reviewed the agenda and called for comments or amendments to the agenda.

No amendments were provided.

The proposed agenda was accepted without objection.

The Chair reviewed the slide 16 – noting the “other” architecture items are.

## 802 Technical Plenary, Thurs, Dec 2, 4pm-6pm ET

**Slide 17 from the agenda:**

**Presentations:** [**802-seaman-history-1121-v01.pdf**](https://www.ieee802.org/1/files/public/docs2021/802-seaman-history-1121-v01.pdf)**,** [**1-21-0074-01-ICne-questions-about-the-ieee-802-architecture.pdf**](https://mentor.ieee.org/802.1/dcn/21/1-21-0074-01-ICne-questions-about-the-ieee-802-architecture.pdf)**,** [**802-parsons-planning-1221-v01.pdf**](https://www.ieee802.org/1/files/public/docs2021/802-parsons-planning-1221-v01.pdf)

**Covered:**

* **History of IEEE 802 (1990, (1995), 2001, 802a, 802b, 2014, 802c)**
* **Questions raised by Roger Marks (LSAP definition? Function of LLC? Do LLC peers share control information? What is MSAP frame format(s)? Multiplexing options? EPD/LPD? VLANs? Architecture and 802.1X, 802.1AE, 802.1AX, 802.1CB, etc.? Tags and shims? Network management and control?) Is LLC a “real subnetwork” in IETF thinking?**
* **What is the scope of IEEE Std 802 (and this project), and how do we proceed? Relationship of 802 and 802.1Q (for example)? Do we need a roll-up and “clean up” of 802, or a re-write? Must we add a conformance clause?**
* **Need to complete in 3 years, because 802-2014 will expire in 2024 (no re-affirmation, anymore). Do two projects (one quick, one full-blown)? Perhaps split the document, also?**
* **Next “Technical Plenaries”: Jan 13, Mar 10. Ongoing technical discussions, weekly, in Nendica. PAR(s) & CSD(s) during Jan & Mar sessions.**

C – What problem is this 802 work defining – is there an 802 product?

Chair- This activity is not talking about 802.1 but 802, so this a top level architecture.

C – Addressing is one thing we rely on 802 for.

Chair – Clearly 802.11relies on 802 to define MAC addressing.

C – Is there a problem? What do we need to solve and what do we need to update?

Chair – The discussion is trying to set the scope: if a maintenance PAR with no CSD should be proposed. (If any new material is added a CSD will need to be provided).

C – The 802.1 “consensus” is that if they do a roll up, they will just need a PAR, if they attempt to do more (e.g., answer Roger’s questions) they will need a PAR and CSD. Most likely they will wind up doing both and will create 2 PARs and 1 CSD.

Chair – We are open to contributions on this topic

## Annex G way forward contribution/discussion:

**Current plan:**

* + - Replace any references in main body text (to Annex G or “frame exchange sequence” in various spellings) with normative text in-place, add definition(s), etc. - Done
    - Create a new and more useable Annex G with a friendly notation/style and cross-references to main body text for technical details – make it more of an introduction/overview of 802.11 frame exchanges

**Begin discussion on “replacement” for Annex G:**

Proposal for New Annex G Frame Exchange Sequence Descriptions –[11-21/1797r2](https://mentor.ieee.org/802.11/dcn/21/11-21-1797-02-0arc-proposal-for-new-annex-g-frame-exchange-sequence-descriptions.docx) - Harry Bims

Looking to address definition of: frame exchange sequence. There is no single Wireless Medium – there are now only wireless media - looking to define this better and revise annex G.

Proposing to better define “frame exchanges sequences” so products can be tested and what the desired behavior is.

Comments:

C – This is good stuff; we are trying to make FES way too important – nothing really matters. The only thing that seems to be important is the restriction to not change state during PS. There are lots of places that frame exchange is used where it should be FES. If we keep annex G or not – does it make a difference.

C – There are 5 clauses where this is used, if we raise this up – we may make more problems than we are solving.

C – There should be a common understanding on when transmissions starts and when it ends, we have been filling in for the lack of specificity in the standard. There is a disagreement on what a frame exchange sequence is, especially when used in more exotic clauses in the standards.

Chair – I’m wondering if we need some examples of the problems.

C – FES are about STAs not changing state and responding to another STA that is waiting for a response.

C – This should be clear in the standard. We should not change or fix the normative text, but the normative text has a lot of implied understanding, clarify the behavior so that the implied understanding is clear is important.

C – Is there an understanding that different STAs behave differently when a frame exchange is ongoing? We should deal with this in each individual clause. But are we are solving something or creating more problems? The ambiguity of what each STA thinks is going on, is the critical important.

C – It is very disturbing if there is something necessary for interoperative behavior that is not currently in the normative text. Interoperative behavior should be clear in the normative text, and it should be complete. If there are areas where there is a problem, then it should be fixed. Also, if there is a complex concept we need to explain, it should be done as it could be helpful.

R – The normative text is not broken – the intent is to come up with an explanation, with the knowledge gained by our discussions and put it into the standard somewhere.

C – The problem should be better defined and what not clear should be explained.

R – There are places where we could be less definitional and more explanatory, providing clarity but not defining new behavior.

Chair – Let’s start with defining the problem we are trying to solve.

AI – for Harry – to identify the places in the body text where FES are discussed, and additional text/description would be useful to explain what the meaning is. Providing references are all that is required.

## Clause 6 discussion (if time): [11-21/1822r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1822-00-0arc-clause-6-discussion.docx) presented by Graham Smith.

Several participants expressed some interest in this topic/presentation.

C – The accuracy and usefulness of a clause should be considered. There is a lot of legacy in the specification, when amendments are added, there shouldn’t be a large number of comments, 802.11 has been ignoring clause 6 inconsistency – basically it comes down to who is using these primitives.

R – Clause 6 seems to be just boiler plate, can clause 6 be trusted? Clause 6 is growing with every amendment and what is added or why does not seem to be clear.

C – Some of clause 6 is now part of the ITU, it originally was related to the OSI model. The idea was – there are two major features: How do the peers interact and what do the users need to see/use. This SAP interface was to formalize how do you interact with your user. Over the years this has become a requirement without a purpose. Clause 6 seems to be correct, but is it used/useful? If there is an external user – it makes sense – but what do these amendments need to generate. It may be a good time look at the whole purpose of clause 6 and we may want to just say it once – e.g., the text in 6.2 is for accessing the MIB – many the frames could be delt with in the same manner.

C – This should be looked at and if it is a cooky cutter thing a template describing it is probably all that is necessary – it should be mentioned once, this could make everyone’s life easier. Also, looking at the usefulness is a good idea. These questions on usefulness, clarity, and accuracy should be answered.

A – There seems to be a hesitant agreement that this should be looked at.

C – 6.3 should be addressed but not all of 6. If we delete 6.3 there will be no text that describes how we interact with our users. But, to step back and provide a formal way to say the minimal thing we need to say so users can use 802.11. Is there a general rule that 802 specifications need provide this information?

C – The requirement that 802 specification follow these rules, may allow for clause 6 to be condensed.

C – Do other 802’s do this?

C – In the 802.11 standard there are things that are there historically, there were requirements of this sort because it was unknown how thing would work. There may be an ISO requirement. Checking with 802.1 and 802.3 on what is being met by clause 6.

Comment from the TGme Chair: If this comes into TGme – I’m going to push activity into the ARC SC.

## Next Steps:

Upcoming Teleconferences:

* **Dec 13, 13:00-15:00 ET**
  + **Topics? (Clause 6 contribution author not available)**

## Adjourned: 21:00 h ET

## Attendance:

| **Name** | **Affiliation** |
| --- | --- |
| Au, Kwok Shum | Huawei Technologies Co., Ltd |
| Bims, Harry | Bims Laboratories, Inc. |
| Hamilton, Mark | Ruckus/CommScope |
| Hsu, Ostrovsky | Xiaomi Inc. |
| Levy, Joseph | InterDigital, Inc. |
| Montemurro, Michael | Huawei Technologies Co., Ltd |
| Petrick, Al\* | InterDigital |
| Rosdahl, Jon | Qualcomm Technologies, Inc. |
| Smith, Graham | SR Technologies |
| Sun, Bo | ZTE Corporation |
| Taori, Rakesh | Infineon Technologies |
| Torab Jahromi, Payam | Facebook |

\* Added based on Webex participants list.