IEEE P802.11
Wireless LANs

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| ARC SC Teleconferences Minutes May 2022 - Interim |
| Date: 2022-05-11 |
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Abstract

This document contains the minutes of the IEEE 802.11 ARC SC teleconferences held on 9 May 13:30-15:30 h ET and 11 May 11:15-13:15 h ET.

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

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# Monday 9 May 2022 at 13:30-15:30 h ET

## Administration:

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

**Vice Chair: Joseph Levy, InterDigital**

**Secretary: Joseph Levy, InterDigital**

**Meeting called to order by the Chair 13:30 ET**

Agenda slide deck: [11-22/0589r2](https://mentor.ieee.org/802.11/dcn/22/11-22-0589-02-0arc-arc-sc-agenda-may-2022.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**

**7 March 2022, 13:30 ET:**

* **Reminder: 2 meetings this week: Monday 13:30 ET, Wednesday 11:15 ET**
* **Attendance, noises/recording, meeting protocol reminders**
* **Policies, duty to inform, participation rules**
* **Officer elections/confirmations (complete on Wednesday)**
* **Contribution/discussion topics:**
	+ Clause 6
	+ Annex G way forward
	+ IEEE Std 802 project(s) update/discussion
	+ Other topics?

**9 March 2022, 11:15 ET:**

* **Attendance, noises/recording, meeting protocol reminders**
* **Policies, duty to inform, participation rules**
* **Prior meeting minutes**
* **Officer elections/confirmations**
* **Contribution/discussion topics:**
	+ Clause 6
	+ Annex G way forward
	+ IEEE Std 802 project(s) update/discussion
	+ Other topics?
* **Next steps**

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

None were forthcoming.

Approved by unanimous consent.

C – An overview of the IEE Std 802 projects could be given and a review of the ELLA documents can be discussed.

Chair – Will update the agenda slide on IEEE Std 802 and the ongoing activities and discuss this item on Wednesday.

## Clause 6

Graham presented [11-22/0413r5](https://mentor.ieee.org/802.11/dcn/22/11-22-0413-05-0arc-clause-6-proposal.docx) – starting with an overview of the work and the direction being pursued.

Then presented the Proposed new 6.3 introduction and the types discussion and new clause numbering.

C – in type 6 – what about the type with an indication with a response?

A – Didn’t find any. If a new primitive exits it would have to be added.

C – Looking at possibly adding a primitive of that type – it should be added.

C – It more than clause 11 – probably also 12, 13, 14 – so 9, 11, 12,13,14,

Ans – Thanks.

C – The SME does respond to indications – it responds by sending a management frame.

Chair – It is an action frame in response to a type 1.

C – Many of these have arguments in them. What is the way forward.

Ans – If the type is defined with the reference of the arguments – that is all that is necessary?

Skipping to a straight forward one:
6.3.18 MLME-TPCADAPT - going to 11.7.7 in the draft 802.11me D1.0 – page 2795 and 9.6.2.4 and 9.6.2.5

Chair does that answer the question?.

C – Are we just check the columns? .

A – With the x’s there is no way to know the difference – so the x’s alone is not adequate. The types are necessary, as they show the flow. If there are details, they could be added. The type is clear and this was a preferred way forward.

C – Looking at a table and then making the reader look up something like type to understand what is necessary, is complex. Notes should be provided to clarify.

A – Don’t see the benefit of adding the notes.

Chair – Let’s look at some more information and then we can see what the group things.

C – A table can provide a feature and reference, how are the parameters provided? How are the different parameters specified?

A – There are some standard differences e.g., .status also a STA address or a Peer STA address, .confirm primitive generally contains a result code. People seem not be reading/using clause 6 as there seem to be very few comments on clause 6. Clause 6 could point this to some sub clause – how do are the parameters handled?

C – Clause 6 has been used to negotiate features and the interfaces. It is useful to discuss how a feature on a chipset is exposed to an end product.

C – Clause 6 is used to define an interfaces – but only for a limited set of the primitives. There are plenty of actions frame interfaces – some have value and are used – that is the benefit.

A – If there are critical ones additional information can be added. – the proposal is to split the 6.3 – between the generic group and the primitives that are described. The primitives with detailed descriptions would also be included in the table and the reference 6.3 clause, so the full details could be in 6.3.2.

C – The MLME is used when dealing with vendors. It is a question if the arguments are the same in the request frame or are a behavioral parameters. Looking at a request frame – it is not simple and straight forward – in the fields – protecting and listing the parameters that are in the request frame – then looking at the request frame – is the field internal or should it be exposed. It would be good to keep the primitive elements in some form – e.g., sector dwell time.

A – Is 6.3 the only place this information is found? Are these shalls? If you can provide an example it would be helpful.

C – The scan primitive – “dwell time”.

Chair – The scan primitive is proposed to be included as it currently is.

C – So some primitives will be left in as they currently are and others will be generic listed in the table only.

A – Yes, the first 14 are too fundamental – so they should be kept in full detail as they are. For new primitives there will be a choice to provide a table listing or provide a full description.

C – For primitives there is concerned about how the type and range will be provided. Type in clause 6 is important to know for a primitive. The table is a nice summary, type and valid range should be included.

C – Type and valid range would be better if they are in clause 9 and not in clause 6 and they should not be in both clause 6 and 9. Clause 6 defines the interface and not the details of what is in the frame, so the information belongs in clause 9 only and should be removed from clause 6.

C – 9.6.13.4 – Diagnostic Request frame format says that is a nonzero value - 6.3.51.2.2. says the Dialog Token is 1-255 valid range. Is this redundant – where does the requirement belong?

C – This information is not necessary in clause 6. But, that doesn’t apply to 1609.

C – Regarding 1609 - there are some we have agreed to keep. 6.3.117. 1609.3 defined their own – but it should be in 802.11 hence the addition.

C – This information if it is in clause 9 is adequate, if it is not it needs to be somewhere, if not elsewhere it should be in clause 6. Referencing the location of these types and ranges is critical but should not be redundant in the standard.

C – 6.3.57 - page 611 – DisassociationTimer – is buried in the text, so keeping clause 6 informative is ok, but clause 6 is not currently informative. There are two – timers – validity interval (page 1947 D1.1 line 39)

C – There are different parameters in clause 6 then clause 9 – clause 9 is a local parameter for over the air – but the parameter when handled by the local STA in MLME SAP is n clause 6.

C – Clause 6 has internal and external parameters – clause 6 is an external interface - so it could apply to the MIB.

Chair – REVme is looking to pass a parameter to the MIB and so there may be redundancy that we do not want to remove. The ARC SC should look at some simple examples – lets start with the ones that are straight forward, and generate a list of these – to make sure we do have generic forms. Pointing to slide 21 and the list.

A – Is clause 6 mandatory? There are no shalls.

Chair – Clause 6 is a logical interface – if it’s not clearly stated in the text (outside of clause 6) – it should be. The ARC SC should focus on some generic MLME items for Wednesday.

## Discussion on the Wednesday meeting

Chair – order of business on Wednesday: Officer elections, IEEE Std 802/Nendica discussion, Clause 6.

## Recess: 15:30 h EDT

# Wednesday 11 May 2022 at 11:15-13:15 h ET

## Administration:

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

**Vice Chair: Joseph Levy, InterDigital**

**Secretary: Joseph Levy, InterDigital**

**Meeting called to order by the Chair 11:15 ET**

Agenda slide deck: [11-22/0589r4](https://mentor.ieee.org/802.11/dcn/22/11-22-0589-04-0arc-arc-sc-agenda-may-2022.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**

**9 March 2022, 11:15 ET:**

* **Attendance, noises/recording, meeting protocol reminders**
* **Policies, duty to inform, participation rules**
* **Prior meeting minutes**
* **Officer elections/confirmations**
* **Contribution/discussion topics:**
	+ Review of [11-21-1111r14](https://mentor.ieee.org/802.11/dcn/21/11-21-1111-14-00be-mld-architecture-part-2.docx) “…”
	+ IEEE Std 802 project(s) update/discussion
	+ Clause 6
	+ Annex G way forward
	+ Other topics?
* **Next steps**

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

Some discussion of adding a discussion on [11-21-1111r14](https://mentor.ieee.org/802.11/dcn/21/11-21-1111-14-00be-mld-architecture-part-2.docx) – the TGbe architecture comment resolution document – The proper place for discussion on this document is TGbe and the TGbe reflector, though a quick review was added to the agenda.

Approved by unanimous consent.

## Prior meeting minutes

**Approve the minutes of:**

**March plenary:** [11-22/0449r0](https://mentor.ieee.org/802.11/dcn/22/11-22-0449-00-0arc-arc-sc-teleconferences-minutes-march-2022-plenary.docx)

**Mar telecon:** Mar 31: [11-22/0562r0](https://mentor.ieee.org/802.11/dcn/22/11-22-0562-00-0arc-arc-sc-teleconferences-minutes-31-mar-2022.docx)

Moved: Graham Smith

Second: Mark Hamilton

Approved by unanimous consent.

## Officer Election/Conformations

The Chair conducted the election and confirmation of officers:

Motion: Approve Joseph Levy as ARC SC Vice Chair, and confirm Joseph Levy as ARC Secretary

Moved: Jon Rosdahl

Seconded: Graham Smith

Result: Unanimous Consent

## Quick review of [11-21-1111r14](https://mentor.ieee.org/802.11/dcn/21/11-21-1111-14-00be-mld-architecture-part-2.docx)

Review provided by Mark Hamilton – for background and information. The proper place for discussion on this document is TGbe and the TGbe reflector.

## IEEE Std 802 project(s) update/discussion

Joseph Levy (Interdigital) presented [11-22/0705r2](https://mentor.ieee.org/802.11/dcn/22/11-22-0705-02-0000-ieee-std-802-nendica-discussion-update.ppt)

* Two projects: maintenance/roll-up, and amendment with enhanced technical content.
* What does ARC want to address, if anything?
	+ Interaction between ARC and the 802 project is desirable. We have history, that is useful to explain (like the Portal concept). We also have LPD packet format, so LLC concepts are still very much part of 802.11.
	+ Vast majority of 802.11 deployments are to support edge devices (but not 100%). That limits our interaction with VLANs.
	+ DS is very important for mobility of STAs within an ESS. We need to make sure that is retained.
	+ Today, usually APs have an internal bridge, which is logically the Portal and more.
	+ There are “bridges” and 802.1Q Bridges, and we need to be careful which one we mean, and talk about it carefully. But, support reviewing Portal concepts, with that in mind.
	+ GLK: Not really interesting in terms of real implementations. Mesh, as a concept, has done many things in industry, beyond 802.11s. VLANs also have an interesting history with respect to Wi-Fi, and programs outside 802.11/IEEE. This becomes a large collection of complex topics. Do we really need to get into this?
	+ A goal could be to track/contribute to the Std 802 project, to ensure that 802.11 doesn’t need to make many/significant changes to align with anything new they do.
	+ Do we understand if there is any real-world industry value to the Std 802 revamping work? If industry doesn’t plan to follow it, the ROI is not clear.
	+ External standards like EasyMesh and Wi-Fi Direct are real-world things, and not in the 802 IEEE scope.
* Our architecture concepts (both 802.11 and 802 generally) can be important.
	+ Will continue discussion on the ARC reflector. Try to keep interested members aware of the discussions and any direction coming from the Nendica meetings. 802.1-21-0080 is a document to monitor.

## Clause 6

Graham continuing presenting [11-22/0413r5](https://mentor.ieee.org/802.11/dcn/22/11-22-0413-05-0arc-clause-6-proposal.docx) – starting with an overview of the work and the direction being pursued. Providing a summary of what we would “keep”.

If one is righting a new amendment and if you need to add to 6.3 – if your addition is very important and need full explanation it can be added with full explanation. But, if this level of detail is not needed generic forms can be used:

e.g., WUR example: can we replace 6.3.123.2.2 replaceable by a table listing? The text contains no shalls – this is more informative text than normative text. This is an indication as to what would pass between the MLME and the MAC

C – The challenge throughout clause 6 are the parameters and the behavioral text of the primitives. The primitives’ titles are as is given, the concern is in the behavioral text. If the text is removed and we no longer have the all the parameters, we would loose the information.

A – Things should not be defined in clause 6.

C – It would be best if this wasn’t in clause 6, but it is, we need to makes sure that every thing that is defined in clause 6 is somewhere else, before we remove text.

C – Considering WURmode – it appears in behavioral text in clause 29. So, the text in 6 can be collapsed. The word WURPNUpdate if it is in the text – there it would be a dangling reference. We need to check this.

The most important reference – is the reference to clause 9. So the clause 9 references should be included. But, the fields that are not included should be noted. This may have behavioral, operational impacts, and interoperability requirements.

A – Is it really necessary to do this.

C – The specification text – must be clear

C – Support for this approach – for years all the parameters have been placed in one place. Will these changes create a spaghetti coded standard. It is not clear what the right answer is, care should be taken to improve the standard and that it is not harder to use the standard.

A – If the consensus is that others feel that clause 6 has value as it now is – I don’t want to do the work if it is just going to be rejected.

C – Providing references will allow the text to state where the element is defined – clause 9, and not double specify the requirement.

C – The work should continue, how this is implemented will lead to understanding on what is currently in the specification and what is missing. These changes should no break the specification or remove information. When the specification is reduced by 400 pages, there will be concern about what has been removed.

C – Simplifying and streamlining the information is important – but these changes must not make the specification harder for people outside the 802.11 group.

C – Support for this direction. There are arguments that clause 6 shouldn’t even be in our standards. I would like to see clause 6 stripped down to meet interoperability. We should clarify that all we are describing the behavioral stuff so that interoperability works.

A – This moving in a good direction – quoting the draft (IEEE 802.11-2020 - highlighting added):

“6.3.1 Introduction

“The services provided by the MLME to the SME are specified in this subclause. These services are described in an abstract way (following the model described in ITU-T Recommendation X.210 [B55]) and do not imply any particular implementation or exposed interface. MLME SAP primitives are of the general form ACTION.request primitive followed by ACTION.confirm primitive (for an exchange initiated by the SAP client) and ACTION.indication primitive followed by ACTION.response primitive (for an exchange initiated by the MLME). The SME uses the services provided by the MLME through the MLME SAP”

Note we are keeping .2-.14 in their current form. If an implementor doesn’t know what needs to be pass in the primitive – there are bigger issues to be addressed. Some questions: How far we go? – the example of the one field that is not included in the MLME is important information. So how deep we need to go? Do we need to include which elements are not included?

C – Reviewing TGbh’s draft, there were no additions to clause 6 but clause 9 was updated.

Chair – Lets continue this on the reflector and plan for Montreal.

## Next steps

* **Contributions requested/expected:**
	+ Annex G
	+ Clause 6
	+ IEEE Std 802 projects
* **July plenary planning**
	+ 3 slots (slot added for potential Clause 6 drafting session)
* **Next Teleconference(s):**
	+ May to July teleconference plan… How many telecons? 2
		- Conflicts to avoid: TGbe, REVme, TGbd, TGbh
		- Continue with Monday 1PM ET and Thursday 7PM ET?
		- Dates to avoid??
	+ Will be coordinated with other TG chairs, and announced later

## Action Item:

1. Reflector discussion on: Clause 6 – Graham Smith lead.
2. Reflector discussion on: IEEE Std. 802/Nendica – Joseph Levy lead.

## Adjourned: 13:15 h EDT

Final Agenda: [11-22/0589r5](https://mentor.ieee.org/802.11/dcn/22/11-22-0589-05-0arc-arc-sc-agenda-may-2022.pptx)

Closing Report: [11-22/0784r1](https://mentor.ieee.org/802.11/dcn/22/11-22-0784-01-0arc-arc-closing-report-may-2022.pptx)