IEEE P802.11  
Wireless LANs

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| ARC SC and Joint ARC SC, 802.11 TGak, and 802.1Qbz Meeting Minutes July 2015 | | | | | |
| Date: 2015-07-16 | | | | | |
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Abstract

Minutes of the IEEE 802.11 ARC Standing Committee meeting held on 13th, 15th and 16th of July 2015, in Waikoloa, Hawaii, USA. Note: this document also includes the meeting minutes for the joint meeting with TGak and 802.1 held on 16th of July 2015.

**Monday 13th July 2015, PM2, 16:00 (HT) ARC SC Meeting**

**Administration:**

**Chair: Mark Hamilton, Ruckus Wireless**

**Vice-Chair/Secretary: Joseph Levy, InterDigital**

**Meeting call to order by Mark Hamilton 16:00, 13 July 2015**

**Proposed Agenda slide deck:** [11-15-0727-01-0arc-arc-sc-agenda-jul-2015.ppt](https://mentor.ieee.org/802.11/dcn/15/11-15-0727-01-0arc-arc-sc-agenda-jul-2015.ppt) **, updated during the meeting to r2**

**Proposed Agenda:**

**Monday, July 13, PM2**

* **Administrative: Minutes**
* **Updates, no action expected:**
  + IEEE 1588 mapping to IEEE 802.11
  + IETF/802 coordination (PAWS, CAPWAP)
  + **802.11 as a component in a (larger) system:** [11-15/0593r0](https://mentor.ieee.org/802.11/dcn/15/11-15-0593-00-0arc-802-11-as-a-component.ppt)
  + 802.11 in 5G - [11-15/0842r1](https://mentor.ieee.org/802.11/dcn/15/11-15-0842-01-0arc-ieee-802-11-in-5g.pptx)
  + Comments/updates to tutorial information (being presented tonight)?
  + **MIB attributes Design Pattern -** [11-15/0355r3](https://mentor.ieee.org/802.11/dcn/15/11-15-0355-03-0arc-mib-truthvalue-usage-patterns.docx), [11-15/0891r0](https://mentor.ieee.org/802.11/dcn/15/11-15-0891-00-0arc-delta-r2r3-of-mib-truthvalue-usage-patterns.docx)

**Wednesday, July 15, AM1**

* + **Updates to REVmc Figure 5-1, et al -** [11-15/0540r0](https://mentor.ieee.org/802.11/dcn/15/11-15-0540-00-0arc-updates-to-revmc-5-1-5.docx)
    - An AP doesn’t have a MAC SAP!?
  + **802.1AC draft review/discussion, as needed**
  + **AP/DS/Portal architecture and 802 concepts**
    - DSAF concept, DS\_SAP normative, Annex R updates: [11-15/0555r0](https://mentor.ieee.org/802.11/dcn/15/11-15-0555-00-0arc-normative-ds-sap-proposal.docx)
  + **Future sessions / SC activities**

**Joint session with TGak and 802.1, Thursday, July 16, AM1**

* + **Architectural view of 11ak Bridged LAN** - [11-15/0454r0](https://mentor.ieee.org/802.11/dcn/15/11-15-0454-00-0arc-some-more-ds-architecture-concepts.pptx)

**Administration:**

The Chair reviewed the Administrative information in slides 5-9 in the Agenda document (11-15/0727r1)

**Call for Patents:**

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

**Approval of the Agenda:**

The proposed Agenda slide 11 of the Agenda document (11-15/0727r1) - copied above was reviewed, no comments or changes were proposed, the proposed agenda was approved by unanimous consent.

**Administrative: Minutes**

May Minutes:[11-15-0736-00-0arc-arc-sc-meeting-minutes-may-2015.docx](https://mentor.ieee.org/802.11/dcn/15/11-15-0736-00-0arc-arc-sc-meeting-minutes-may-2015.docx)

Approved by unanimous consent.

**Updates, no action expected:**

**IEEE 1588 mapping to IEEE 802.11:** no new information, therefore no action required.

**IETF/802 coordination (PAWS, CAPWAP):** no new information, no one is aware of any action required.

**802.11 as a component in a (larger) system:** [11-15/0593r0](https://mentor.ieee.org/802.11/dcn/15/11-15-0593-00-0arc-802-11-as-a-component.ppt) - Tutorial: [11-15-0757-00-0000-802.11-as-a-component.pptx](http://www.ieee802.org/802_tutorials/2015-07/11-15-0757-00-0000-802.11-as-a-component.pptx)

Adrian Stephens provided a brief summary of the planned 802.11 as a component tutorial. The tutorial was put together by Adrian Stephens (Intel Corporation), Max Riegel (Nokia Networks) and Dick Roy (SRA). It consists of slides from 11-15/0593r0, slides from Max on OmniRAN, and slides from Dick describing how 802.11 is used in ITS as an example. The tutorial will be given Monday Eve-1 at 18:00 HT. One of the goals of the tutorial is to see if there is enough interests to move this work to WNG, and on to a SG/TG. Also a champion to lead this effort is critical to this work moving forward.

A comment was made that this work is related/equivalent to standardizing the DS. It was also observed that without broad involvement it will be difficult to proceed.

**IEEE 802.11 in 5G -** [**11-15/0842r1**](https://mentor.ieee.org/802.11/dcn/15/11-15-0842-01-0arc-ieee-802-11-in-5g.pptx)**, Presented by Max Riegel (Nokia Networks)**

Discussion (summarized and paraphrased):

Q: Whose expectations this is?

Ans. - It is the expectations of the infrastructure vendors.

Q: Where is this going to get decided? 3GPP? NGMN?

Ans. – RAN will decide this.

Q: Should 802.11 be doing anything to be positioning ourselves to be part of the 3GPP solution? Should we be providing an LS or something to the upcoming 3GPP 5G Workshop? Has the scope been made clear?

Ans. - I have not seen anything that this work shop is open.

Q: Should we be planning on sending an LS?

Ans. - Unknown at this point.

Action item: Joseph Levy to provide the 3GPP September Workshop status/agenda to the ARC reflector.

Completed: e-mail sent Thursday 7/16/15 @ 21:28 EST, information follows below:

Invitation to the 3GPP September Workshop is available on line:

[Phoenix%20Workshop%20InviteR4%20With%20Forewords.zip](ftp://ftp.3gpp.org/workshop/2015-09-17_18_RAN_5G/Invitation/Phoenix%20Workshop%20InviteR4%20With%20Forewords.zip)

The current version of the Agenda is available on line:

<ftp://ftp.3gpp.org/workshop/2015-09-17_18_RAN_5G/Agenda/RWS-150001.zip>

All workshop documents will be available in the following on line in this folder:

<ftp://ftp.3gpp.org/workshop/2015-09-17_18_RAN_5G/>

A long discussion on how things fit RAN/SA/802.11/OmniRAN with each other and within 5G. There was no conclusions, but general agreement to continue the discussion.

**MIB attributes Design Pattern -** [11-15/0355r3](https://mentor.ieee.org/802.11/dcn/15/11-15-0355-03-0arc-mib-truthvalue-usage-patterns.docx), [11-15/0891r0](https://mentor.ieee.org/802.11/dcn/15/11-15-0891-00-0arc-delta-r2r3-of-mib-truthvalue-usage-patterns.docx)

A brief history of the MIB was provided from an 802.3 perspective. 802.1 first designed the protocol, which was then followed by 802.3 which made it more specific. This was followed by action by IETF who independently wrote MIBS for 802.1 and 802.3. The IETF MIBS were then repatriated to 802.1 and 802.3 respectively, and have been maintained by 802.1 and 802.3 since.

This was followed by a discussion on how to move forward. Statements were made saying: if we needed to do this from scratch now we wouldn’t use MIBs. It was suggestions the use of Yang Models is preferred. It was also stated that maintenance of the MIB is difficult and its usefulness is questionable, but it is what is currently in the 802.11 specification. The general conclusion of the discussion was there are issues with the MIB or control interface and something should be done, but there is no agreement on what the preferred way forward is. It was also discussed if the MIB or a MIB update is better dealt with as part of the “802.11 as a component” topic. There was no conclusion reached, other than we should continue to discuss this topic.

**Recessed: 6pm, 13th July 2015**

**Wednesday 15th July 2015, AM1, 8:00 (HT) ARC SC Meeting**

**Meeting call to order by Mark Hamilton 8:00, 15 July 2015**

**Updated agenda slide deck:** [**11-15-0727-03-0arc-arc-sc-agenda-jul-2015.ppt**](https://mentor.ieee.org/802.11/dcn/15/11-15-0727-03-0arc-arc-sc-agenda-jul-2015.ppt)**, updated during the meeting to r4:** [**11-15-0727-04-0arc-arc-sc-agenda-jul-2015.ppt**](https://mentor.ieee.org/802.11/dcn/15/11-15-0727-04-0arc-arc-sc-agenda-jul-2015.ppt)

**Administration:**

The Chair reviewed the Administrative information in slides 5-9 in the Agenda document (11-15/0727r3)

**Call for Patents:**

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

**The Agenda was reviewed.**

**DSAF concept, DS-SAP normative, Annex R updates:** [**11-15-0555-02-0arc-normative-ds-sap-proposal.docx**](https://mentor.ieee.org/802.11/dcn/15/11-15-0555-02-0arc-normative-ds-sap-proposal.docx)

New figure R-1 – discussed, many comments and minor tweaks. Updated in r3 and r4 ([**11-15-0555-03-0arc-normative-ds-sap-proposal.docx**](https://mentor.ieee.org/802.11/dcn/15/11-15-0555-03-0arc-normative-ds-sap-proposal.docx)**,** [**11-15-0555-04-0arc-normative-ds-sap-proposal.docx**](https://mentor.ieee.org/802.11/dcn/15/11-15-0555-04-0arc-normative-ds-sap-proposal.docx)). To be taken to MC

**802.1AC draft review/discussion, as needed**

Status discussed, but not complete, will discuss at the joint meeting on Thursday. 802.1AC has moved the portion of the specification related to 802.11ak to an annex, so that they can move forward, since 802.11ak needs to wait for 802.11mc to complete.

**Future sessions / SC activities**

Topics for tomorrow’s joint meeting: 802.11 general Links

* Donald Eastlake present topics of interest from TGak and 802.1’s parallel work (802.1Qbz)
* Topics for joint session on Thursday
  + [11-15-0454-00-0arc-some-more-ds-architecture-concepts.pptx](https://mentor.ieee.org/802.11/dcn/15/11-15-0454-00-0arc-some-more-ds-architecture-concepts.pptx)

ARC review of activities and sessions:

* ARC SC meets when a specific focused task is requested of the SC for which there is sufficient volunteer interest.
* Continue work on architectural models
* Comment on 802.1AC revision project changes/proposals
* Design Pattern for “\*Implemented” and “\*Activated” MIB attributes
* Will also follow 802.1/802.11 activities on links, bridging, and MAC Service definition
* Monitor/report on IETF/802 activities, as needed
* Monitor/report on IEEE 1588 activities, as needed

Suggestion to add 802.11 as a component. Response: Interoperability is our past charter and we do that, but do we want to define standardized management accesses? No conclusion was reached.

Discussion on the need for a CC. It was decided that if a CC is needed one it will be set up as required by events, but for now there is no scheduled CC.

For September Interim Meeting:

Two standalone meeting slots:

* 802.11 as a component in a larger eco-system
* Design Pattern for MIB attribute use
* 802.11 Architecture topics: Figure 5-1 and following figures
* DS/AP/Portal architecture discussions

One joint session with TGak:

* 802.11ak architecture discussions:
  + GLK ESS concept
  + “Where are a DS’s brains?”

**Updates to REVmc Figure 5-1, et al -** [11-15-0540-01-0arc-updates-to-revmc-5-1-5.docx](https://mentor.ieee.org/802.11/dcn/15/11-15-0540-01-0arc-updates-to-revmc-5-1-5.docx)

Comments on new Figure 5-1 – note left hand arrow is in LLC/SNAP needs to be fixed.

Long discussion on pages 6 – 8 DS descriptions. An AP doesn’t have a MAC SAP!?

**AP/DS/Portal architecture and 802 concepts**

Presentations on architectural description(s) - None

Reference presentations (previously reviewed, current status of thinking):

* [11-14-1213-01-0arc-ap-arch-concepts-and-distribution-system-access.pptx](https://mentor.ieee.org/802.11/dcn/13/11-13-0115-15-0arc-considerations-on-ap-architectural-models.doc)
* [11-13-0115-15-0arc-considerations-on-ap-architectural-models.doc](https://mentor.ieee.org/802.11/dcn/13/11-13-0115-15-0arc-considerations-on-ap-architectural-models.doc)
* [11-14-0497-03-0arc-802-11-portal-and-802-1ac-convergence-function.pptx](https://mentor.ieee.org/802.11/dcn/14/11-14-0497-03-0arc-802-11-portal-and-802-1ac-convergence-function.pptx)
* [11-14-0562-05-00ak-802-11ak-and-802-1ac-convergence-function.pptx](https://mentor.ieee.org/802.11/dcn/14/11-14-0562-05-00ak-802-11ak-and-802-1ac-convergence-function.pptx)
* [11-15-0454-00-0arc-some-more-ds-architecture-concepts.pptx](https://mentor.ieee.org/802.11/dcn/15/11-15-0454-00-0arc-some-more-ds-architecture-concepts.pptx)

No discussion or comments made.

**Recessed 10:00, 15th July 2015**

**Thursday 16th July 2015, AM1, 8:00 (HT) Joint 802.1, 802.11 TGak and ARC SC Meeting**

Donald Eastlake (Huawei) – Chairing

Agenda Slides: [11-15-0734-07-00ak-july-2015-802-11ak-agenda.pptx](https://mentor.ieee.org/802.11/dcn/15/11-15-0734-07-00ak-july-2015-802-11ak-agenda.pptx)

Meeting call to order 8:10 am

**Administration:**

The Chair reviewed the Administrative information in slides 7-10 in the Agenda document (11-15/07347)

**Call for Patents:**

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

**The Agenda was reviewed and approved**

* **Call TGak Joint Meeting with ARC SC and 802.1Qbz to Order**
* IPR and Attendance Recording Reminder
* Approval of Agenda
* 802.1Qbz / 802.1AC / 802.11ak status
* **802.11ak Teleconferences, joint with 802.1Qbz if mutually convenient:**
  + **1** hour teleconferences through the September 2015 802.11 meeting on Mondays the 3rd, 10th, 17th, and 31st of August at 10am Eastern time.
  + Yes: No: Abstain:
* Presentation and discussion of submissions and issues
* Recess TGak until 10:30 today

The Chair - Reviewed 11.ak status – in comment resolution working towards recirculation in November.

John Messenger (ADVA networking) provide: 802.1AC status

* Working comment resolution on Draft 2.1 issued June 2015.
* Recirculation ballot also issued to .11 and .16.
* 30 responses on D2.0
* 8 responses on D2.1 recirculation ballot

Comment resolution report: [802-1ac-rev-d2-1-dis-v1.pdf](http://www.ieee802.org/1/files/private/ac-rev-drafts/d2/802-1ac-rev-d2-1-dis-v1.pdf)

Please find the updated 802.1AC/D2.1 Editor’s Report at: [acrev-messenger-editor-report-0715-v03.pdf](http://ieee802.org/1/files/public/docs2015/acrev-messenger-editor-report-0715-v03.pdf)

Open issues:

* Contrary opinion on conformance language: after including I at the last ballot, one commenter says is should be excluded.
* LLC encapsulation Ether type assignment value needed

.1AC Plan:

* Perform comment resolution at this meeting.
* Resolve whether to remove 802.11 GLK material
* Prepare a new draft for WG recirculation ballot before the September interim
* Comment resolution at the September interim meeting
* Conditional to sponsor at this meeting.

Norm Finn (Cisco) - .1Qbz status

Current IEEE Draft P802.1Qbz/D2.1: [802-1Qbz-d2-1-dis.pdf](http://www.ieee802.org/1/files/private/bz-drafts/d2/802-1Qbz-d2-1-dis.pdf)

Note: 802.1 or 802.11 member access in necessary to access this link.

As discussed at 802.11TGak meeting yesterday – in .1AC there is a big section on the normative link, there is discussion on a generic medium how one can build point to point links. This material was moved to a non-normative Annex. In .1Qbz there is pointer to the non-normative annex in .1AC.

Norm proposing: .1Qbz talk about the general concepts.

Resolution: Rewrite G.4 to attach to 802.1AC Clause to 13.6. not 13.2x or B.2.x or B.2.X. Will keep the Portal Convergence function and will generalized G.4.2 and G.4.3 and right two parts of figure G-2. The Annex is the normative.

802.1Qbz Plan:

Complete and agree draft this meeting.

Recirculation ballot before the September interim.

Note: all outstanding comments on P802-1Qbz D2.1 have been resolved.

**802.11ak Teleconferences, joint with 802.1Qbz if mutually convenient:**

Teleconferences agreed by unanimous consent to be 1.5 hour on 8/3, 8/10, 8/24, 8/31 @ 10 AM EDT –.

**Additional discussion on 802.1AC comments:**

Comment: How can an implementation “implement the ISS”, when it is a logical interface?

Accept in principle: remove 5.1 and 5.4. There are no shalls in 11 and 14, but the shalls in 13 are still necessary for conformance with 5.3. Note the commenter meant 14 not 13.

Discussion on Annex B.2 – it may be that the Annex will stay in and be published.

Note: all outstanding comments on P802-1AC D2.1 have been resolved.

**802.11 ARC SC is adjourned; 802.11 TGak and 802.1are recessed @ 9:05, 15th July 2015**

**Note:** ARC Closing Report in:[11-15-0959-00-0arc-arc-closing-report-july-2015.pptx](https://mentor.ieee.org/802.11/dcn/15/11-15-0959-00-0arc-arc-closing-report-july-2015.pptx)

**Also note: Additional related information can be found in the 802.1 and 802.11 TGak minutes for the July meeting.**