IEEE P802.11
Wireless LANs

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| ARC SC November 2016 Meeting Minutes  |
| Date: 2016-12-9 |
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Abstract

This document contains the minutes of the IEEE 802.11 ARC SC meetings held on 8, and 9 November 2016, at 1:30pm, and 8:00am CT, respectively. The minutes for the joint IEEE 802.11 ARC SC and IEEE 802.11 TGak meeting held on 10 November 2016, at 8:00am CT are available in the 802.11ak Nov 2016 Minutes (11/16/1489r1).

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# Tuesday, November 8, 1:30pm CT

**Administration:**

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

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

**Meeting call to order by Chair 1:34pm CT, 8 November 2016**

**Proposed Agenda slide deck:** [11-16/1323r1](https://mentor.ieee.org/802.11/dcn/16/11-16-1323-01-0arc-arc-sc-agenda-november-2016.pptx)**, here for reference:**

**Tuesday, November 8, PM1**

* **Administrative: Minutes**
	+ **IEEE 1588 mapping to IEEE 802.11**
	+ **802 activities**
	+ **IETF/802 coordination**
	+ **TGak update; TGaq update**
	+ **MIB attributes Design Pattern -** [**11-15/0355r4**](https://mentor.ieee.org/802.11/dcn/15/11-15-0355-04-0arc-mib-truthvalue-usage-patterns.docx)
	+ **YANG/NETCONF modeling discussions –** [**11-16/1436r0**](https://mentor.ieee.org/802.11/dcn/16/11-16-1436-00-0arc-yang-modelling-and-netconf-protocol-discussion.pptx)

**Wednesday, November 9, AM1**

* + **MIB attributes Design Pattern (cont.)**
	+ **YANG/NETCONF modeling discussions (cont.)**
	+ **Future sessions / SC activities**
	+ **“What is an ESS?”**
	+ **AP/DS/Portal architecture and 802 concepts -** [**11-16/0720r0**](https://mentor.ieee.org/802.11/dcn/16/11-16-0720-00-0arc-stacked-architecture-discussion.pptx)**,** [**11-16/0457r1**](https://mentor.ieee.org/802.11/dcn/16/11-16-0457-01-0arc-802-11ak-802-1ac-stas-aps-dses-and-convergence-functions.pptx)**,** [**11-15/0454r0**](https://mentor.ieee.org/802.11/dcn/15/11-15-0454-00-0arc-some-more-ds-architecture-concepts.pptx)**,** [**11-14/1213r1**](https://mentor.ieee.org/802.11/dcn/14/11-14-1213-01-0arc-ap-arch-concepts-and-distribution-system-access.pptx) **(slides 9-11)**

**Joint session with TGak, Thursday, November 10, AM1**

**Administration:**

The Chair reviewed the Administrative information in slides 5-9 in the Agenda document

**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:**

Approved by unanimous consent.

**ARC Minutes:**

**September Minutes,** [**11-16/1319r0**](https://mentor.ieee.org/802.11/dcn/16/11-16-1319-00-0arc-arc-sc-and-joint-arc-sc-tgak-and-joint-arc-sc-tgaq-september-2016-meeting-minutes.docx) approved by unanimous consent.

**IEEE 1588 mapping to IEEE 802.11**

Update, no action expected as all activity seems to be 802.1AS related.

A question was asked as to what the .1AS activity was.

The Chair answered that 1588 and 802.1AS are being used by the Avenue Alliance, but he is unfamiliar with the activity.

**IEEE 802 Activity**

The Chair reported:

802.1Qbz has been published.

802.1Q is going through a revision which will probably result in 802.1Q-2017

802.1AC is going to RevCom

**IETF/802 coordination:**

Dorothy Stanley reported:

Regarding multicast traffic features of 802.11, nothing is currently ready to be looked at, so there is no required action from 802.11 ACR SC at this time.

The last coordination meeting was Sept 9th 2016.

IETF is currently meeting, in conflict with the meeting.

**TGak update**

There was update from the TGak Chair – status will be discussed at the joint TGak and ARC SC meeting Thursday Morning AM1 – all were invited.

**TGaq update**

The TGaq Chair provided status of the proposed changes discussed at the joint TGaq and ARC SC meeting in Warsaw: everyone seems to be happy with the proposed changes. TGaq may ask for another joint meeting in January to review the changes. The Chair will send out a notice when the new diagram is ready.

**Design Pattern for MIB attributes**

The Chair provided the status for the design patters for the MIB attributes document, noting that it will probably be used during the editorial document review. There was some discussion on the document: [11-15/0355r4](https://mentor.ieee.org/802.11/dcn/15/11-15-0355-04-0arc-mib-truthvalue-usage-patterns.docx)

**Recessed at 3:34pm CT**

# Wednesday, November 9th, 8:00am CT

Call to order 8:10am CT

**Administration:**

**Chair: Mark Hamilton, Ruckus**

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

**Proposed Agenda slide deck:** [11-16/1323r1](https://mentor.ieee.org/802.11/dcn/16/11-16-1323-01-0arc-arc-sc-agenda-november-2016.pptx), updated to r2 during the meeting, copied below:

**Wednesday, November 9, AM1**

* + **MIB attributes Design Pattern (cont.)**
	+ **YANG/NETCONF modeling discussions (cont.)**
	+ **Future sessions / SC activities**
	+ **“What is an ESS?”**
	+ **AP/DS/Portal architecture and 802 concepts -** [**11-16/0720r0**](https://mentor.ieee.org/802.11/dcn/16/11-16-0720-00-0arc-stacked-architecture-discussion.pptx)**,** [**11-16/0457r1**](https://mentor.ieee.org/802.11/dcn/16/11-16-0457-01-0arc-802-11ak-802-1ac-stas-aps-dses-and-convergence-functions.pptx)**,** [**11-15/0454r0**](https://mentor.ieee.org/802.11/dcn/15/11-15-0454-00-0arc-some-more-ds-architecture-concepts.pptx)**,** [**11-14/1213r1**](https://mentor.ieee.org/802.11/dcn/14/11-14-1213-01-0arc-ap-arch-concepts-and-distribution-system-access.pptx) **(slides 9-11)**

**Administration:**

The Chair reviewed the Administrative information in slides 5-9 in the Agenda document

**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:**

Approved by unanimous consent.

**MIB attributes Design Pattern (cont.)**

Continued the discussion on [11-15/0355r4](https://mentor.ieee.org/802.11/dcn/15/11-15-0355-04-0arc-mib-truthvalue-usage-patterns.docx):

Looking at page 7, Item 9 it was agreed that the terms and meaningful and we need to provide guidance on how these terms should be used.

For Item 10 it was agreed that no action was required.

There was some discussion on using the value “none” for MAXASSESS – no one saw a need for the use of “none” as a value. It was agreed that “not-assessable”, “read-only”, “read-write”, “read-create” are the only 4 values we use. The fifth allowed value of “assessable-for-notify” is a value we don’t currently use and no one saw a reason that we might ever use it. (see specification RFC2578 (one of the SMIv2 RFCs).

It was noted that:

“Read-create” is used for tables that external entities can configure.

“Non-assessable” is only used for table values.

The Chair agreed to flesh-out 11-15/0355r4 to include the above agreements, to be reviewed at the January meeting, with the goal of completing the document. If the document is agreed in January it will form part of the MDR review/document and possibly referenced or added to the style guide.

The 802.11 Chair commented that the MIB creation is not an editorial function, but it has been taken on by the editorial group. If the proposed document is added to the MDR it will be up to the Task Group to insure that the style is followed. Hence, relieving the editors of this function.

Therefore, this document should probably be reviewed as a recommended practice.

It was also stated that it is not desirable to add this document to the style guide as it is a large and confusing document.

**YANG/NETCONF modeling discussions**

802.11 Chair Stated: That there is a directive that 802.11 should look at YANG models and therefore it is desired that the ARC SC develops some expertise in YANG models. So that YANG models can be discussed in the WG and the WG can decide how to move forward to use or not use YANG models.

The ARC SC Chair then reported on the status of the current level of expertise in the ARC SC:
An outline document has been created: [11-16/1436r0](https://mentor.ieee.org/802.11/dcn/16/11-16-1436-00-0arc-yang-modelling-and-netconf-protocol-discussion.pptx), this document is barely bones – so work has to be done to complete this document and expanding the 802.11 view of YANG modelling and NETCONF.

Slide 3 has a list of interesting Web sites – the SC Chair called for additional inputs/information that others are aware of. None were proposed at the meeting.

Slide 4 – definition of YANG –

Slide 5 – benefits of YANG – just quoted – we have currently have no agreement that this is true.

Slide 6 – purpose of NETCONF

Donald Eastlake then provide a report on currently 802.3 YANG Model activity that he is aware of: 802.3cf is a new group looking it to YANG. The task group calls are chaired by a different chair than the chair of the group. Peter Jones. There were 6/7 people met at the first meeting of the TASK Group. Looking to put things on GitHub. There is also 802.1 activity.

Others then contributed to the discussion stating:

* It is interesting that 802.3 are discussing using GitHub, which is a continuous development platform, and not a published model as 802 specifications are. This may be possible to do as an Industry Connections activity (ICAID) – there is also a question of indemnity, if the GitHub activity is outside an 802 project, then the indemnity provided by 802 would not apply.
* The Chair suggested that we should also find out what 802.1 is doing.
* The Chair then referenced Yang-Central.org, as there seems to be interesting things in there – e.g. a tool that will automatically convert an SMPT MIB. There is a separate specification on allowed data types. Also there is a Wikipedia YANG model page. There are also large slide decks on line: <http://www.slideshare.net/cmoberg/a-30minute-introduction-to-netconf-and-yang> (it was noted that these slides are from 2011).
* It was suggested that this new activity should be done in the WNG SC.
* It was suggested that we should build up a set/understanding of what the technology can do for us.
* The Chair – chair noted that several members brought up commercial liability.

The 802.11 Chair formally tasked the Chair of ARC to bring this to WNG once a certain level of understanding of the issues has been reached.

The Chair stated there may be benefit of having a position prior to REV md getting too far along. The goal for January for people in this room to think about this and bring their position to the January meeting. With a goal of getting an understanding of if there is interest in moving this forward.

The Chair also suggest a goal of having an 802.11/802.1 joint meeting on YANG models.

The Chair the proposed the following to be the future plans:

* Added another slot joint with 802.1 on YANG/NETCONF (TBC)
* Joint with TGak is an open issue, will discuss on Thursday.
* Propose a Teleconference on Dec 12 at 11am EST –

**What is an ESS? Topic discussion**

The Chair kicked of the discussion with the following statement: Lets discuss the concept that an ESS is a single 802.1 bridged LAN

The following additional comments were made:

* The DS has an abstract interface. Hence, using only the 802.11 standard we cannot have more than one manufacture’s equipment in an ESS.
* The above comment was challenged with a statement that this is not the case
* The ESS is an abstract interface.
* A non-AP STA cares a lot about ESS, as it effects the behaviour of the non-AP STA.

Chair – We should find the behaviour dependencies on the ESS concept and then evaluate how we define the ESS based on what is required to support the desired behaviours. Another concept is that APs in a ESS have some degree of consistency of configuration.

* Why do we need the term ESS? We should look at what needs to be defined and provide terms for these things. Implementations have a need for the protocol over the air and logical entities also have a need for these protocols. These are the two main uses of the ESS concept.

Chair – what about mobility domain?

* The mobility domain is only a subset of the procedures provided in an ESS (up to inclusive).
* The IP address defines mobility.
* The IP address should be opaque to us.
* TGai uses IP address in a non-opaque way. So we could use different SSIDs while maintaining our IP address.
* Yang models may solve this issue. We are so use to expressing everything in English. We have a concept here that we have named, but there is not exact definition. The state associated with an ESS, may be a set of configurations, and mechanisms that STAs can use. e.g. Global keys.
* Global keys is really a mobility domain concept.
* All keys are between two devices. So you don’t transfer keys anywhere. You can use the keys to setup a new security configuration.
* We should look at the 11r subclause.
* Transparent keys while specified are not implemented to my knowledge.
* The HESSID identifies APs are defined in 802.11 and Passpoint defines it differently. 802.11 defines an HESSID as a single ESS. In the WFA view HESSID can go across different ESSs
* The problem is the 802.11 definition – what is the use case for the definition.
* For the HotSpot definition: the ESS is not the bridge Lan
* This is not a useful concept.
* So we are saying we have two things in 802.11 mobility domain and HESSs?
* A discussion on global SSIDs – e.g. ATT Mobile – where you have to have the SSID and HESSID together to make this work.
* Do we think the Passpoint people have figured this out?
* Two participants answered: Yes, we think they have. So we should look at what they have done.

**The Chair recessed the meeting at 10:02am CT**

# Joint TGak/ARC SC meeting on Thursday AM1

**Please see the 802.11ak Nov 2016 Minutes (**[**11/16/1489r1**](https://mentor.ieee.org/802.11/dcn/16/11-16-1489-01-00ak-802-11ak-nov-2016-minutes.doc)**) for the remaining agenda items which were discussed at the Joint TGak/ARC SC meeting on Thursday AM1. The meeting was adjourned at the conclusion of the joint meeting.**