

IEEE 802.1 Interim Meeting

Pittsburgh, PA, USA, May 2015

802.1 Meeting Minutes – 19-22 May, 2015

Attendees

<i>Last Name</i>	<i>First Name</i>	<i>Middle Name</i>	<i>Affiliation</i>
Boiger	Christian		b-plus GmbH
Byrne	Joseph		Freescale Semiconductor, Inc.
Chen	David		NSN, Inc.
Chen	Feng		Siemens AG
Cho	Peter		Actus Networks, Inc.
Cummings	Rodney		National Instruments Corporation
Edge	Bob		Consultant
Farkas	Janos		Ericsson
Finn	Norman		Cisco Systems, Inc.
Gale	Benjamin		Broadcom Corporation
Garner	Geoffrey		Broadcom Corporation, Marvell Semiconductor, Siemens AG, Hirsch
Gorshe	Steven Scott		PMC-Sierra, Inc.
Gravel	Mark		Hewlett-Packard Development Company, L.P.
Gray	Eric		Ericsson AB
Gunther	Craig		Harman International Industries, Incorporated
Haddock	Stephen		Stephen Haddock Consulting, LLC
Hantel	Mark		Rockwell Automation
Holness	Marc		Ciena Corporation
Hsieh	Tien Yuan		Industrial Technology Research Institute (ITRI)
Jeffree	Anthony		HP, Broadcom
Johas Teener	Michael		Broadcom Corporation
Kafle	Padam		Qualcomm Incorporated
Klein	Philippe		Broadcom Corporation
Kofteroff	Jeff		Meyer Sound Laboratories, Inc.
Korhonen	Jouni		Broadcom Corporation
Li	Yizhou		Huawei Technologies Co. Ltd
Mansfield	Scott		Telefon AB LM Ericsson
McBeath	Tom		Spirent Communications
McIntosh	James		Microsemi
Mclendon	Jonathon		Broadcom Corporation
Messenger	John		ADVA Optical Networking Ltd.
Noseworthy	Bob		University of New Hampshire InterOperability Laboratory (UNH-IOL)
Pannell	Donald R		Marvell Semiconductor, Inc.
Parsons	Glenn		Ericsson AB
PASQUIER	Bruno		Airbus Group

Pienciak	Walter	IEEE Standards Association (IEEE-SA)
Riegel	Maximilian	Nokia Networks
Rouyer	Jessy	Alcatel-Lucent
Samberg	Larry	HFR Inc.
Samii	Soheil	General Motors Company
Sato	Atsushi	Yokogawa Electric Corporation
Schneelee	Stefan	Airbus Group
Seaman	Michael	Individual
Sexton	Daniel	General Electric Company (GE)
Specht	Johannes	University of Duisburg-Essen and General Motors Company
Steiner	Wilfried	TTTech Computertechnik AG
Tabatabaee	Vahid	Broadcom Corporation
Thaler	Patricia	Broadcom Corporation
Thornburg	David	Cisco Systems, Inc.
Thrybom	Linus	ABB AB - Corporate Research
Touve	Jeremy	Alcatel-Lucent
Weis	Brian	Cisco Systems, Inc.
Woods	Jordon	Innovasic

Task Group Minutes

Interworking minutes

Tuesday, 19 May

Interworking Task Group meeting called to order at 9:10 AM.

Stephen Haddock presented the preliminary agenda for the week.

Stephen Haddock presented patent policy slides. No response to the call for patents.

802.1Qca PCR: Janos Farkas presented an editor's report and conducted comment resolution on the sponsor ballot of 802.Qca-d2.0 Path Control and Reservation:

<http://www.ieee802.org/1/files/private/ca-drafts/d2/802-1Qca-d2-0.pdf>

<http://ieee802.org/1/files/public/docs2015/ca-farkas-d2-0-editor-report-0515-v02.pdf>

<http://ieee802.org/1/files/public/docs2015/ca-farkas-mrt-operation-0515-v03.pdf>

<http://ieee802.org/1/files/private/ca-drafts/d2/802-1Qca-d2-0-dis-v01.pdf>

Break for lunch at 12:25 PM.

Resume at 1:30 PM.

802.1Qca PCR: Janos Farkas continued comment resolution on the sponsor ballot of 802.Qca-d2.0 Path Control and Reservation.

802.1AB-Rev LLDP: Tony Jeffree conducted comment resolution on the working group ballot of 802.1AB-Rev-d0.1 Station and MAC Connectivity Discovery:

<http://www.ieee802.org/1/files/private/ab-rev-drafts/d0/802-1ab-rev-d0-1.pdf>

<http://www.ieee802.org/1/files/private/ab-rev-drafts/d0/802-1AB-REV-d0-1-dis-V2.pdf>

802.1AC-Rev MAC Service: John Messenger presented an editor's report and conducted comment resolution on the working group ballot of 802.1AC-Rev-d2.0 MAC Service Interface:

<http://ieee802.org/1/files/public/docs2015/acrev-messenger-editor-report-0515-v01.pdf>

<http://www.ieee802.org/1/files/private/ac-rev-drafts/d2/802-1ac-rev-d2-0.pdf>

<http://ieee802.org/1/files/private/ac-rev-drafts/d2/802-1ac-rev-d2-0-dis-v1.pdf>

Adjourn at 6:00 PM.

Wednesday, 20 May

Joint meeting Interworking/TSN (see TSN Minutes below)

Thursday, 21 May

Interworking Task Group meeting called to order at 9:00 AM.

John Messenger presented patent policy slides. No response to the call for patents.

802.1Qca PCR: Janos Farkas completed comment resolution on the sponsor ballot of 802.Qca-d2.0 Path Control and Reservation.

802.1AC-Rev MAC Service: John Messenger continued comment resolution on the working group ballot of 802.1AC-Rev-d2.0 MAC Service Interface.

Break for lunch at 12:30 PM.

Resume at 1:30 PM.

802.1AC-Rev MAC Service: John Messenger completed comment resolution on the working group ballot of 802.1AC-Rev-d2.0 MAC Service Interface. Norm Finn and Philippe Klein contributed draft text for the convergence functions for a generalized Point-to-Multipoint service:

<http://ieee802.org/1/files/public/docs2015/ac-nfinn-pmpn-clause-0515-v01.pdf>

Adjourn at 3:00pm.

TSN Minutes

Tuesday, 19 May

8:00 AM → 6:00 PM, TSN

Michael Johas Teener presented Administration, Patent Policy, and Agenda. There was no response to the call for patents.

Michael Johas Teener presented Liaison Request from 1588

<http://www.ieee802.org/1/files/public/docs2015/liaison-1588-request-802-3-time-improvements-0415.pdf>

Geoff Garner presented Introduction to IEEE 802.1AS Revision Draft 1.0

<http://www.ieee802.org/1/files/private/as-rev-drafts/d1/802-1AS-rev-d1-0.pdf>

Christian Boiger presented Why CumulativeScaledRateOffset is Important

<http://www.ieee802.org/1/files/public/docs2015/as-boiger-TC-cumulativeScaledRateOffset-issue-0515-v03.pdf>

Feng Chen presented 802.1AS TC/Sync Path Calculation

<http://www.ieee802.org/1/files/public/docs2015/as-chen-goetz-transparent-clock-0515-v01.pdf>

Wednesday, 20 May

9:00 AM → 6:00 PM, Joint Interworking/TSN

Michael Johas Teener reviewed Patent Policy. There was no response to the call for patents.

János Farkas presented 802.1Qca Comment Resolution and Editor's Report

<http://www.ieee802.org/1/files/private/ca-drafts/d2/802-1Qca-d2-0.pdf>

<http://www.ieee802.org/1/files/private/ca-drafts/d2/802-1Qca-d2-0-pdis-v01.pdf>

<http://www.ieee802.org/1/files/public/docs2015/ca-farkas-d2-0-editor-report-0515-v01.pdf>

Rodney Cummings presented Introduction to 802.1Qcc D0.4

<http://www.ieee802.org/1/files/private/cc-drafts/d0/802-1Qcc-d0-4.pdf>

Rodney Cummings presented Qcc Topology Discovery

<http://www.ieee802.org/1/files/public/docs2015/cc-cummings-topology-discovery-v1.pdf>

Norm Finn presented 802.1CB D1.0 Comment Resolution

<http://www.ieee802.org/1/files/private/cb-drafts/d1/802-1CB-d1-0.pdf>

<http://www.ieee802.org/1/files/private/cb-drafts/d1/802-1CB-d1-0-pdis-v1.pdf>

Norm Finn presented 802.1CB Stacking Issues

<http://www.ieee802.org/1/files/public/docs2015/cb-nfinn-stacking-issues-0515-v02.pdf>

Marc Holness presented 802.1Q YANG Model Proposal

<http://www.ieee802.org/1/files/public/docs2015/new-mholness-YANG-8021Q-Summary-0515-v01.pdf>

<http://www.ieee802.org/1/files/public/docs2015/new-mholness-yang-8021Q-0515-v04.pdf>

Marc Holness presented 802.1Q YANG PAR and CSD

<http://www.ieee802.org/1/files/public/docs2015/new-mholness-YANG-8021Q-par-0515-v01.pdf>

Thursday, 21 May

8:00 → 9:00 AM, Joint TSN/802.3br (IET)

Michael Johas Teener reviewed Patent Policy. There was no response to the call for patents.

Pat Thaler discussed results of 802.3br comment review.

<http://grouper.ieee.org/groups/802/3/br/public/index.html>

9:00 AM → 6:00 PM, TSN

Norm Finn presented 802.1CB D1.0 Comment Resolution (continued)

<http://www.ieee802.org/1/files/private/cb-drafts/d1/802-1CB-d1-0.pdf>

<http://www.ieee802.org/1/files/private/cb-drafts/d1/802-1CB-d1-0-pdis-v1.pdf>

Johannes Specht presented 802.1CB proposals (part 1)

<http://www.ieee802.org/1/files/public/docs2015/new-tsn-specht-cb-failure-modes-0521-v1.pdf>

Tony Jeffree presented P802.1Qbu Ballot Review

<http://www.ieee802.org/1/files/private/bu-drafts/d2/802-1Qbu-d2-2.pdf>

<http://www.ieee802.org/1/files/private/bu-drafts/d2/802-1Qbu-D2-2-pdis-v1.pdf>

Tony Jeffree presented P802.1Qbv Ballot Review

<http://www.ieee802.org/1/files/private/bu-drafts/d2/802-1Qbu-d2-2.pdf>

<http://www.ieee802.org/1/files/private/bu-drafts/d2/802-1Qbu-D2-2-pdis-v1.pdf>

Glenn Parsons and Michael Johas Teener presented Response from CPRI w/r/t 802.1CM PAR

<http://www.ieee802.org/1/files/public/docs2015/liaison-CPRI-answer-to-IEEE802dot1-0415.pdf>

János Farkas presented 802.1CM TSN for Fronthaul PAR

<http://www.ieee802.org/1/files/public/docs2015/new-P802-1CM-draft-PAR-0515-v02.pdf>

<http://www.ieee802.org/1/files/public/docs2015/new-P802-1CM-draft-CSD-0515-v02.pdf>

Jouni Korhonen presented IEEE1904.3 Update

<http://www.ieee802.org/1/files/public/docs2015/new-roe-jik-ieee1904dot3-0521-v00.pdf>

Johannes Specht presented 802.1CB proposals (part 2)

<http://www.ieee802.org/1/files/public/docs2015/new-tsn-specht-cb-failure-modes-0521-v1.pdf>

Tony Jeffree presented 802.1Qch/802.1Qci Discussion

<http://www.ieee802.org/1/files/private/ci-drafts/d0/802-1Qci-d0-0.pdf>

<http://www.ieee802.org/1/files/public/docs2013/avb-tj-peristaltic-shaper-in-clause-8-style-0313-v1.pdf>

Friday, 22 May

9:00 AM → 3:00 PM, TSN

Michael Johas Teener reviewed Patent Policy. There was no response to the call for patents.

Norm Finn presented 802.1CB Progress Report

<http://www.ieee802.org/1/files/public/docs2015/cb-nfinn-progress-report-0515-v01.pdf>

Stefan Schneelee presented AFDX and microAFDX

<http://www.ieee802.org/1/files/public/docs2015/TSN-Schneelee-AFDX-0515-v01.pdf>

Feng Chen presented Supporting New TSN features in a Decentralized and Centralized Controlled Networks

<http://www.ieee802.org/1/files/public/docs2015/cc-goetz-MRPv2-MSP-v12.pdf>

Dan Sexton presented Feature/Function Priority - AVNU Industrial MWG Discussions

<http://www.ieee802.org/1/files/public/docs2015/tsn-sexton-feature-priority-request.pdf>

Johannes Specht presented UBS Status

<http://www.ieee802.org/1/files/public/docs2015/new-tsn-specht-ubs-queues-0521-v0.pdf>

Heinrich Munz presented OPC UA over TSN

<http://www.ieee802.org/1/files/public/docs2015/tsn-munz-requirements-for-tsn-in-manufacturing-0515-v01.pdf>

Security Minutes

Agenda

As previously circulated:

1. P802.1AEcg – task group ballot resolution
2. P802.1AEcg and preemption
3. P802.1ARce
4. YANG model for 802.1X
5. P802.15.9 ongoing participation and liaison
6. Privacy related issues
7. A.O.B

Meeting details

The Security TG met Tuesday May 19th through Thursday May 21st, 9:00 AM – 6:00 PM, with task group members also participating in the Interworking/TSN sessions Wednesday PM and Thursday AM.

The chair showed the Patent Policy slides (as revised by the IEEE for 2015) and issued a call for patents at the beginning of each day's session. There were no responses to the call at this time.

Brian hosted Webex sessions through the meeting allowing us to work efficiently without needing a projector (thanks from all participants).

All discussions were face to face.

P802.1AEcg: The first task group ballot of draft 0.5 closed prior with 7 Disapproves, 1 Approve, and many abstentions due to lack of expertise.

Mick commented that little security expertise was needed to understand the document. As its focus was on placing security functionality within the 802.1 bridging architecture while retaining the provider network and provider backbone network service selection

capabilities of that architecture, the challenge was for security knowledgeable reviewers to understand bridging rather than for bridging experts to understand security.

A first draft disposition of comments had been posted at:

<http://www.ieee802.org/1/files/private/cg-drafts/d0/802-1AEcg-d0-5-pdis1.pdf>

The comments were discussed Tuesday and Wednesday a.m., Mick and Max also met Wednesday p.m. to go through Max's comments (previously reviewed by the group), and Mick reported on an offline discussion with Steve Haddock on Steve's comments re: terminology. Karen's comments were discussed, with some suggestions for change that might meet her requirements though it was not possible to close them in her absence. It appeared that all the comments could be satisfactorily closed with the following provisos:

- Mick to work with Karen off-line to check adequacy of, and to wordsmith, detailed changes for her comments. These could be reviewed in the scheduled June 23rd task group teleconference.
- Steve Haddock had agreed that the borrowing of PEB terminology for the EDE-CC and EDE-SS cases was probably the best (if not completely satisfactory) way forward, but would like text/notes on the terminology use to be included in the EDE-CC and EDE-CS sections (not just in the Definitions) and would like to review that text before his comment was closed.
- It appears desirable to use of one of the remaining unallocated C-VLAN component (802.1Q Table 8-1) reserved addresses 01-80-C2-00-00-0B or 01-80-C2-00-00-0C for EAPOL frames exchanged between EDE-SS's (see Karen's comment #177). The desirable characteristics of that address being filtering by C-VLAN components, but forwarding by the S-VLAN components of Provider Bridges. If necessary EDE-SS's could be defined as forwarding frames to that address with EtherTypes other than the EAPOL EtherType. The first step would be to complete the interoperability annex called for by a couple of ballot comments to confirm the desirability of allocating the address, and then to request the address from 802.1 at the July plenary meeting.

The details of the proposed resolution of ballot comments will be recorded in revisions of the proposed disposition and final disposition of comments.

P802.1AEcg and preemption: Task group members attended the joint 802.1/802.3 meeting. It appears that the necessary 802.1/802.3 alignment had been achieved and discussion during the meeting reinforced a view that the necessary mapping between

access priorities (as determined and used within a bridge's forwarding process, for example) and emac (express) and pmac (preemptible) interfaces provided by 802.3 would be managed and documented by 802.1, occurring conceptually above the interfaces/sublayers within 802.3. This mapping was documented within 802.1Qbu as a frame preemption status table (in clauses 8.6.8.5 and 12.30.1.1) but needs to be part of the mapping between the MAC Service/ISS and 802.3 specifics in a future 802.1AC revision/amendment so it can be used (and not replicated) by interface stack components other than bridge ports. MACsec, for example, can be used by systems (including end systems and routers) even if there is no bridging functionality present in those systems and should be able to make use of preemption in those systems.

P802.1ARce: no work at this meeting.

YANG model for 802.1X: Marc had provided considerable input to the meeting, revising and expanding on his documents discussed during the prior teleconferences. See the docs2015 directory for documents with names beginning new-mholness... There was much discussion of 802.1X use cases, with Marc providing

[http://www.ieee802.org/1/files/public/docs2015/new-mholness-YANG-8021X-](http://www.ieee802.org/1/files/public/docs2015/new-mholness-YANG-8021X-use-cases-0515-v03.pdf)

[use-cases-0515-v03.pdf](http://www.ieee802.org/1/files/public/docs2015/new-mholness-YANG-8021X-use-cases-0515-v03.pdf) for the Thursday a.m. discussion.

Agreed that the YANG model for 802.1X should be capable of configuring on and reporting on the 802.1X/PAE use cases described in 802.1X-2010 Clause 7 and 802.1AE Clause 11. This would implicitly exclude 802.11 use cases, for the following reasons:

- 802.11 implementations (at least some) continue to reference

802.1X-2004 (although if read strictly the state machines in that edition of 802.1X do not execute correctly, and the implementations have adopted the mutual authentication restrictions mandated in 802.1X-2010).

In general 802.11's use of 802.1X relates to (a) 'the big idea' or adoption of the architectural framework [something that was far more controversial and thus of significant value when the work first started], and (b) the use of EAP [which details lie outside of the 802.1X information model].

- 802.11 has defined a number of 802.11 extensions, EAPOL-KEY frames, for example and makes heavy use of 802.11 specific constructs (SSIDs, BSS, etc.) that reflect the specific nature of their technology and would likely play a vital role in an adequate YANG model for 802.11 interfaces.

Agreed that we need to understand how the 802.1X data model will relate to the 802.1Q data model in the use cases, and to a potential 802.1AE data model.

Reconfirmed the prior decision that the YANG data model should be based on the UML information model contained in 802.1Xbx-2014 Figure 12-3 (a small revision of the same figure in 802.1X-2010).

We noted that a significant part of the current configuration of an 802.1X interface (that is to say of an interface controlled by 802.1X) occurred through Radius, with selection (for example) of the .1Q VLAN based on authentication and subsequent authorization and downloading of ACLs. See RFC 4675 (reference in .1Xbx Bibliography) and (possibly) RFCs 3579 and 3580. Also noted that there does not seem to be an EAP MIB.

Some important aspects of 802.1X support, such as selection of EAP methods and credentials, currently fall outside the scope of existing MIBs. Prior discussion pointed out that the configuration of such 'posture' choices for the majority of 1X clients would likely be through Windows or MAC support environments and unlikely to move to YANG/NETCONF. However that leaves configuration of 1X/EAP in infrastructure environments (e.g. supporting MACsec between bridges of various types) and in access points (with an 802.11 emphasis likely), where YANG/NETCONF would be used. Noted also possible use of 802.1AR with EAP within the infrastructure, so need to understand the data model relationship between 1X, EAP, and 1AR.

Further work on the PAR prior to precirculation under the 30 day rule (prior to the July 802 plenary) would take place on the email exploder.

P802.15.9: Karen had provided comments to 802.15.9 to accompany a NO vote on their WG recirculation ballot. Brian participated in an 802.15.9 teleconference that took place during the meeting (Tuesday 5 p.m. local) and reported that some of the unresolved issues related to uncertainty in the revision of the base 802.15 document (section numbering, for example). A fresh draft of 802.15.9 was being prepared and a further recirculation ballot was anticipated.

Privacy Related Issues: There had been no recent activity on the privacy group email exploder and no substantive discussion took place during this meeting.

A.O.B : No items recorded.

Future teleconferences and meetings: a teleconference has already been scheduled for June 23. This teleconference will discuss what needs to be done during the July plenary meeting. Mick will not be attending that plenary.

Maintenance

There are no meeting minutes for the Maintenance Task Group for the May Interim.

OmniRAN Minutes

The conference call minutes for 16 April are incorporated in these minutes by reference and are available at:

<https://mentor.ieee.org/omniran/dcn/15/omniran-15-0027-00-00TG-april-16th-confcall-minutes.docx>

Amended meeting slides for this conference call are available at:

<https://mentor.ieee.org/omniran/dcn/15/omniran-15-0023-02-00TG-april-16th-confcall-slides.pptx>

The minutes for the Interim meeting are incorporated in these minutes by reference and are available at:

<https://mentor.ieee.org/omniran/dcn/15/omniran-15-0030-00-00TG-may-2015-f2f-meeting-minutes.docx>

Amended meeting slides for the Interim meeting are available at:

<https://mentor.ieee.org/omniran/dcn/15/omniran-15-0029-01-00TG-may-2015-f2f-meeting-slides.pptx>

DCB Minutes

Wednesday, 20 May

Pat Thaler reminded everyone of the patent policy and asked if there was anyone wished to make any statement about potentially essential patents. There was no response.

Yizhou walked through the VDP extensions presentation and proposed PAR and CSD at:

<http://www.ieee802.org/1/files/public/docs2015/new-yizhou-vdp-extension-0515-v04.pdf>

<http://www.ieee802.org/1/files/public/docs2015/new-yizhou-qbg-ext-for-nvo3-par-csd-v02.pdf>

The updated version of the PAR and CSD was posted at:

<http://www.ieee802.org/1/files/public/docs2015/new-yizhou-qbg-ext-for-nvo3-par-csd-v03.pdf>