IEEE 802.1 Working Group
25-28 July 2016 Plenary Meeting
San Diego, CA, USA
Meeting Minutes

The 802.1 Chair, Glenn Parsons, presided.
The 802.1 Recording Secretary, Jessy Rouyer, wrote the minutes in part based on input from 802.1 Task Group Chairs.

1 Attendance and affiliation

Last Name	First Name	Middle Name	Affiliation
Aekins	Rob		Legrand
Althoff	Markus		Marvell Semiconductor, Inc.
Baek	SeoYoung		LG ELECTRONICS
Bao	Shenghua		HUAWEI
Belopolsky	Yakov		Bel Fuse
Bierschenk	Jens		Robert Bosch GmbH
Boiger	Christian		b-plus GmbH
Bottorff	Paul		Hewlett-Packard Development Company, L.P.
Chen	David		NSN, Inc.
Chen	Feng		Siemens AG
Chen	Lidong		NIST
Cheng	Weiying		Coriant
Cummings	Rodney		National Instruments Corporation
Fang	Yonggang		ZTE TX Inc
Farkas	Janos		Ericsson
Finn	Norman		Self Employed
Fischer	Michael		NXP Semiconductors
Garner	Geoffrey		Broadcom Corporation
Gunther	Craig		HARMAN INTERNATIONAL INDUSTRIES, INCORPORATED
Gutierrez	Marina		TTTech Computertechnik AG
Haasz	Jodi		IEEE Standards Association (IEEE-SA)
Haddock	Stephen		Stephen Haddock Consulting, LLC
Hantel	Mark		Rockwell Automation
Harkins	Daniel		Aruba Networks, Inc.
Heffernan	Patrick		Spirent Communications
Henry	Jerome		Cisco Systems, Inc.
Holness	Marc		Ciena Corporation
Huang	Jing		Huawei Technologies Co., Ltd
Huang	Lu		802

Jeffree	Anthony	HP
Jin	Liang	Spirent Communications
Johas Teener	Michael	Broadcom Corporation
Juknevicius	Gintaras	General Electric Company (GE)
Kain	Carl	USDoT
Kehrer	Stephan	Hirschmann Automation and Control, Inc.
Kennedy	Richard	Hewlett Packard Enterprise
Korhonen	Jouni	Broadcom Corporation
Krieger	Ann	US Department of Defense
Levy	Joseph	InterDigital, Inc.
Li	Yizhou	Huawei Technologies Co. Ltd
Lin	Alex	MediaTek Inc.
Lin	Zhi-Wei	Metropolitan Transportation Authority - New York City Transit
Liu	Jackie	Cisco Systems, Inc.
Malinen	Jouni	Qualcomm Incorporated
Mangin	Christophe	Mitsubishi Electric R&D Centre Europe (MERCE)
Marks	Roger	EthAirNet Associates
McBeath	Tom	Spirent Communications; Forthgem Consultants
McIntosh	James	Microsemi Corporation
Messenger	John	ADVA Optical Networking Ltd.
Moskowitz	Robert	HTT Consultant
Mustala	Tero	Nokia Networks
Olsen	David	HARMAN INTERNATIONAL INDUSTRIES, INCORPORATED
Pandey	Sujan	NXP Semiconductors
Pannell	Donald R	Marvell Semiconductor, Inc.
Parsons	Glenn	Ericsson AB
Perkins	Charles	Futurewei Technologies
Peterson	Edward	Xilinx, Inc.
Potts	Michael	General Motors Company
Randall	Karen	NSA/IAD
Regev	Alon	Ixia
Riegel	Maximilian	Nokia Networks
Rouyer	Jessy	Nokia
Roy	Michel	InterDigital, Inc.
Samii	Soheil	General Motors Company
Sarikaya	Behcet	HUAWEI
Sato	Atsushi	Yokogawa Electric Corporation
Schewe	Frank	Phoenix Contact
Schuessler	James	SAMSUNG ELECTRONICS
Seaman	Michael	Individual
Specht	Johannes	University of Duisburg-Essen and General Motors Company
Thaler	Patricia	Broadcom Limited
Ting	Ao	ZTE Corporation
Touve	Jeremy	ALCATEL-LUCENT

Unbehagen	Paul	Avaya Inc.
Wang	Hao	Fujitsu Research & Development Center
Watanabe	Fujio	NTT DoCoMo, Inc.
Weber	Karl	Beckhoff
Weis	Brian	Cisco Systems, Inc.
Woods	Jordon	Innovasic, Inc.
Yunoki	Katsuo	KDDI R&D Laboratories
Zein	Nader	NEC Corporation
zheng	yonggang	MediaTek Inc.
Zhong	Qiwen	Huawei Technologies Co., Ltd
Zinner	Helge	Continental Automotive Systems AG
Zuniga	Juan Carlos	SIGFOX

2 Opening Plenary Meeting

Call to order: 25 July 2016, 10:30 AM.

The 802.1 Chair, Glenn Parsons, presided.
The 802.1 Recording Secretary, Jessy Rouyer, wrote the minutes.

The Chair presented the *Opening Agenda* slides available at
http://www.ieee802.org/1/files/public/minutes/2016-07-opening-plenary-slides.pdf.

During this presentation, the Chair:
- Reviewed general administrative information including:
  o Meeting "Decorum" or rules, including the policies on public reporting, and on photography or recording (slide 2);
    ▪ The Chair asked if any member of the press was attending including those who would run a public blog on this meeting other than those limited to summarizing the meeting outcomes. There were no responses.
  o General information on 802.1 (slide 3), including information on 802.1 operation available at http://www.ieee802.org/1/files/public/minutes/802-1-general-info-v3.pdf, a reminder that contributions are to be uploaded before presentation, how to access meeting schedule, and how to report meeting session attendance;
  o Hotel and meeting room security (slide 4); and
  o Meeting logistics (slide 5).
- Showed slides 6 through 11 (reproducing slides 0 through 4 of the IEEE-SA PatCom Patent Slides for Standards Development Meetings, separately available at http://standards.ieee.org/about/sasb/patcom/materials.html).
  The Chair:
  o Presented information on these slides, which included:
    ▪ Instructions for the WG Chair (and TG Chairs);
    ▪ Participants, Patents and Duty to Inform;
    ▪ Patent Related Links;
    ▪ Call for Potentially Essential Patents; and
    ▪ Other Guidelines for IEEE WG Meetings.
  o Advised WG attendees that:
    ▪ The IEEE's patent policy is described in Clause 6 of the IEEE-SA Standards Board Bylaws;
    ▪ Early identification of patent claims which may be essential for the use of standards under development is strongly encouraged;
    ▪ There may be Essential Patent Claims of which the IEEE is not aware. Additionally, neither the IEEE, the WG, nor the WG chair can ensure the accuracy or

completeness of any assurance or whether any such assurance is, in fact, of a Patent Claim that is essential for the use of the standard under development.
- o Made the "Call for Potentially Essential Patents" thereby providing an opportunity for participants to identify patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) of which the participant is personally aware and that may be essential for the use of that standard.
  There were no responses to the call.
- o Reminded the 802.1 TG Chairs of their daily obligations (per slide 11) with respect to presenting the IEEE-SA PatCom Patent Slides for Standards Development Meetings and making the "Call for Potentially Essential Patents".
- Introduced 802.1 Officers and provided 802.1 website information (slide 12).
- Thanked Eric Gray for his 6-year service as 802.1 Recording Secretary and appointed Jessy Rouyer in this role from this plenary meeting onward (slide 13).
- Reviewed the list of 802.1 voting members, including information about individuals who have lost, may lose or may gain 802.1 voting membership, and reminded individual participants of their duties to vote as instructed in 802.1 ballots and to record their attendance to the meeting via IMAT to enable accurate maintenance of 802.1 voting membership (slides 14-19). The Chair reminded individual participants about 802.11 reciprocal credit, which was continued at this meeting (slide 20).
- Provided administrative information about file upload and the need to upload using the provided URL prior to presenting (slide 21), and about the "*join me*" web conferencing tool provided by IEEE-SA (slide 22).
- Thanked János Farkas for giving the 802.1 newcomer orientation on 24 July 2016 (slide 23), and thanked John Messenger for giving the 802 newcomer orientation on 25 July 2016.
- Reviewed the schedule for future interim meetings (slide 24), which included:
  - o 12-15 September 2016 in York, UK hosted by ADVA Optical Networking.
    - John Messenger presented *Welcome to York September 2016 IEEE 802.1 Meeting*: http://www.ieee802.org/1/files/public/docs2016/admin-messenger-sep16-york-meeting-0715-v04.pdf.
  - o 16-19 January 2017 in Atlanta, GA, USA sponsored by 802.
  - o No leads for May 2017 and September 2017.
- Reported the following items out of the 802 EC executive session (slide 25) and, following a brief introduction by Patricia Thaler of remote participation, conducted a Straw Poll on "Who thinks that it would be beneficial for Pat to continue/pursue the remote participation investigation in 802?" with 18 for and 22 against:
  - o Remote participation:
    - Patricia Thaler leading investigation.
    - Costs high. There are differing rules in WGs.
  - o 802 paper winner:
    - Student attending this week and will present:
      - IEEE 802.11 WNG from 08:00 to 10:00 on Tuesday 26th July,
      - IEEE 802.15 WNG from 11:30 to 12:30 on Wednesday 27th July.
  - o 802.11 dominance allegation.
  - o 802 Task Force to discuss indemnification.
  - o P&P change proposals (EC-16-116):
    - 75% approval for government communications,
    - 10 day announcement for WG subgroup meetings.
  - o Future Venues (EC-16-117):
    - New registration system for next plenary.
- Provided a list of 802 EC meetings to be held this week (slide 26).
- Provided information about Public Review (slide 27) and indicated no email ballots (ePoll) were conducted since the last plenary (slide 28).
- Pointed out PARs and CSDs that are up for vote at this meeting (slide 29). 802.1 has none. 802.3 has two for P802.3cb and P802.3.2 (P802.3cf): the Chair asked whether there was

interest in 802.1 to review any of these; interest was expressed to review P802.3cf.
- Indicated there would be no tutorial this week (slide 30), provided a status update on 802 5G SC, including next steps during this meeting (slide 31).
- Reviewed the list of liaisons within 802 (joint and standing committee meetings, 802 task force) to be held this week (slide 32), led discussions of some of the incoming liaisons also allocating them to 802.1 TGs for further discussion and processing (slide 33), and led an inconclusive discussion of whether establishing a Category D liaison with IEC SC65C WG15 is necessary (slide 34).
- Provided highlights about the IETF (IAB & IESG) - IEEE 802 Coordination meeting to be held 9 September 2016 in Paris, France (slide 35).
- Reviewed the current WG's work load (slide 36) and discussed the promotion of the work the WG is doing (slide 37).
- The Chair invited nominations for IEEE-SA Awards by 31 July 2016 (slide 38) noting that the 802.3 Chair, David Law, had been recognized by receiving the Charles Proteus Steinmetz Award.
- Noted the Standards Project Awards have been distributed to the Chairs, Editors and significant contributors after publication of published 802.1 standards and asked editors of the projects listed at the bottom of slide 39 to nominate future recipients.
- Requested the 802.1 TG Chairs to introduce their TG agenda:
  - Mick Seaman presented the Security TG agenda (slide 42).
  - Michael Johas Teener presented the TSN TG agenda (slide 43).
  - Maximilian Riegel presented the OmniRAN TG agenda (slides 44 and 45).
  - John Messenger presented the Maintenance TG agenda for 26 July 2016 (slide 46).
  - Patricia Thaler presented the DCB TG agenda for 26 July 2016 (slide 47)

There was no other business to discuss and the opening plenary meeting was adjourned.

3 Task Group Meetings

3.1 Data Center Bridging

Call to order: 26 July 2016, 10:30 AM.

The Data Center Bridging (DCB) Task Group Chair, Patricia Thaler, presided.

Patricia Thaler presented the IEEE-SA PatCom Patent Slides for Standards Development Meetings, and made the "Call for Potentially Essential Patents". There were no responses to the call.

Patricia Thaler presented the following agenda for the meeting:
- P802c comment resolution, 10:30AM-12:30PM
- P802.1Qcn editor's report, 2:00PM-3:00PM
- P802c comment resolution, 3:00:PM
- P802.1Qcn objectives, to adjournment

This agenda was approved.

P802c (Local Media Access Control Addressing)
Roger B Marks, P802c editor, led the resolution of comments received in the WG ballot on http://www.ieee802.org/1/files/private/802-c-drafts/d1/802c-d1-0.pdf:
http://www.ieee802.org/1/files/private/802-c-drafts/d1/802c-d1-0-dis-v02.pdf

P802.1Qcn (VDP Extensions for NVO3)
Yizhou Li and Paul Bottorff, P802.1Qcn co-editors, presented *Editor's report on 802.1Qcn 0.1*:
http://www.ieee802.org/1/files/public/docs2016/cn-yizhou-editors-report-on-Qcn-0716-v01.pdf

Conclusions:
- Delete filters without GroupID
- Use is for default Tenant Network
- Patricia Thaler to draft Liaison Letter to IETF for exchanging the P802.1Qcn draft
- Deepak Kumar to build a YANG data model for VDP

The meeting intended to send P802.1Qcn/D0.1 to TG ballot and hoped to receive simultaneous comments from IETF. The meeting discussed an architecture overview diagram for a separate NVO3 introduction clause.

Motions
Motions reflecting DCB Task Group conclusions were prepared for the 802.1 closing plenary and can be found in their final form following slide 30 in http://www.ieee802.org/1/files/public/minutes/2016-07-closing-plenary-slides.pdf.

A.O.B.
The DCB Task Group meeting adjourned at 5:10PM.

3.2 Maintenance

The Maintenance Task Group minutes are incorporated in these minutes by reference and are available at:
http://www.ieee802.org/1/files/public/maint/2016-07-maintenance-meeting-v1.pdf.

Motions reflecting Maintenance Task Group conclusions were prepared for the 802.1 closing plenary and can be found in their final form following slide 60 in http://www.ieee802.org/1/files/public/minutes/2016-07-closing-plenary-slides.pdf.

3.3 OmniRAN

OmniRAN Task Group meeting minutes are incorporated into these minutes by reference and are available at https://mentor.ieee.org/omniran/dcn/16/omniran-16-0055-00-00TG-july-2016-f2f-minutes.docx.

Current status of OmniRAN Task Group activities (including future meeting announcements, past meeting and conference call minutes) is available via a wiki located at https://mentor.ieee.org/omniran/bp/StartPage.

Motions reflecting OmniRAN Task Group conclusions were prepared for the 802.1 closing plenary and can be found in their final form following slide 57 in http://www.ieee802.org/1/files/public/minutes/2016-07-closing-plenary-slides.pdf.

3.4 Security

Call to order: 25 July 2016 01:30 PM. The Security Task Group met in the afternoon Monday 25 July 2016, all day Tuesday 26 July 2016, all day Wednesday 27 July 2016 and all day Thursday 28 July 2016.

The Security Task Group Chair, Mick Seaman presided and wrote the minutes.

At the beginning of the meetings on Monday, Wednesday, and Thursday, Mick Seaman presented the IEEE-SA PatCom Patent Slides for Standards Development Meetings, and made the "Call for Potentially Essential Patents". Tuesday's meetings began with participation in the Maintenance Task Group and a joint meeting with the TSN Task Group during which the chairs of those groups presented the IEEE-SA PatCom Patent Slides for Standards Development Meetings, and made the "Call for Potentially Essential Patents". There were no responses to the calls prior to the end of the week's session.

Mick Seaman proposed the following agenda (as discussed in the 802.1 opening plenary, detail with document links: http://www.ieee802.org/1/files/public/docs2016/security-seaman-agenda-0716-v0.pdf) for the Security Task Group meeting week:
1. P802.1Xck (*Port-Based Network Access Control: YANG Data Model*)
    1. Task Group Ballot Resolution of P802.1Xck D0.61
2. P802.1ARce (*Secure Device Identity: SHA-384 and P-384 Elliptic Curve*)
    1. Task Group Ballot Resolution
    2. Conversion to revision PAR (new PAR, withdraw existing)
3. P802.1AEcg (*MAC Security: Ethernet Data Encryption Devices*)
4. P802E (*Recommended Practice for Privacy Considerations for IEEE 802 Technologies*)
5. A.O.B
    1. MACsec in cars
    2. 802.1AE Revision PAR
This agenda was approved.

Minutes of the discussion of each of the agenda items (above) in the Security Task Group, follow.

1. P802.1Xck (YANG Data Model for 802.1X)
Marc Holness, P802.1Xck editor, led the resolution of comments received in the TG ballot on http://www.ieee802.org/1/files/private/ck-drafts/d0/802-1Xck-d0-6-1.pdf: http://www.ieee802.org/1/files/private/ck-drafts/d0/802-1Xck-d0-6-1-dis-v01.pdf

Comment #68 referenced http://www.ieee802.org/1/files/public/docs2016/ck-seaman-entities-saps-yang-interfaces-0716-v02.pdf (updated prior to the meeting). Marc Holness noted that this aligned with his own views on YANG representation of the interface stack (though using different diagrams conventions). Mick Seaman presented excerpts from this document (http://www.ieee802.org/1/files/public/docs2016/ae-seaman-entities-saps-interfaces-ppt-0716-v01.pdf) during the TSN joint session on P802.1Qcp YANG models on Tuesday 26 July 2016. Marc Holness subsequently created and presented http://www.ieee802.org/1/files/public/docs2016/cp-mholness-Bridge-Port-YANG-0716-v04.pdf (updated following discussion) on Wednesday 27 July 2016.

If a single Bridge Port interface supports both the MAC Relay Entity and locally attached Higher Layer Entities we have to decide what the interface statistics mean/how they are incremented. If the MAC Relay Entity is not attached through the higher-layer-if (most likely) avoiding swamping local attached statistics is clearer.

A MIB update is needed to index PAE MIB by Controlled Port rather than by Uncontrolled Port (current MIB deviates from the other normative text).

Comment #158 raised a maintenance issue. Mick Seaman had submitted a maintenance request, but too late for discussion at this meeting. It does need further discussion as there is still a potential performance issue (but not a correctness issue) with other CA members determining the Key Server's SSCI. The (unchanged) SCI to SSCI mapping was discussed on Monday.

2. P802.1ARce (Secure Device Identity: SHA-384 and P-384 Elliptic Curve)
Mick Seaman, P802.1ARce editor, started the resolution of comments received in the TG ballot on http://www.ieee802.org/1/files/private/ce-drafts/d0/802-1ARce-d0-7.pdf: proposed responses to ballot comments in http://www.ieee802.org/1/files/private/ce-drafts/d0/802-1ARce-d0-7-pdis0.pdf were drafted during the meeting. These will be posted once the editor has developed detailed text changes.

The meeting agreed that the PAR should be converted to a Revision PAR, but there would be no problem in waiting until the November meeting for EC PAR approval. Initial draft PAR and

CSD are in the public docs2016 but were not discussed in detail at this meeting.

3. P802.1AEcg (Ethernet Data Encryption devices)

The IEEE P802.1AEcg WG recirculation ballot of http://www.ieee802.org/1/files/private/cg-drafts/d1/802-1-AEcg-d1-4.pdf passed with 100% approval rate and one minor editorial comment. The detailed ballot results were recorded in http://www.ieee802.org/1/files/private/cg-drafts/d1/802-1AEcg-d1-4-dis.pdf. Following brief discussion of the text addressed by a comment, the comment was withdrawn, so there were no outstanding comments. It was agreed to make a request for a Standard Group MAC Address from the RAC (Glenn Parsons, 802.1 Chair, took the action to pursue this). Otherwise there was no discussion on P802.1AEcg in the Task Group at this meeting.

4. P802E (Privacy Recommended Practice)

A P802E meeting was held Tuesday evening, starting at 7.45 pm, to enable members of other WGs to attend. Brian Weis presented *IEEE 802 Privacy Threat Analysis Overview* http://www.ieee802.org/1/files/public/docs2016/802e-weis-threat-analysis-ppt-0716-v00.pdf (updated as http://www.ieee802.org/1/files/public/docs2016/802E-weis-privacy-threat-analysis-0718-v01.pdf) which was well received by the group and Jerome Henry provided *Recommended Practice for Privacy Considerations for IEEE 802 Technologies* (http://www.ieee802.org/1/files/public/docs2016/802e-henry-update-0716-v00.pdf), an update on current thinking in the draft. In discussion, Dan Harkins noted the beneficial effects of injecting garbage into inappropriate attempts to track individuals. It was noted that fingerprinting was not necessarily confined to single devices, but could be applied to a group of devices used by an individual, or even a group of individuals. Programs attempting to fingerprint devices do not necessarily have to be aware of the semantics of the fields used for tracking, and certainly didn't have to treat 802 related fields independently from other fields, but could simply discover field correlations to build a statistically effective profile.

5. A.O.B.

5.1 MACsec in cars/Automotive Ethernet Security

Bob Moskowitz presented *A look at Securing the Automotive Ethernet* Monday afternoon: http://www.ieee802.org/1/files/public/docs2016/ae-moskowitz-auto-ethernet-0716-v01.pdf .

Mick Seaman presented *MACsec in the car* Tuesday afternoon: http://www.ieee802.org/1/files/public/docs2016/ae-seaman-macsec-in-the-car-0716-v0.pdf. This summarized and expanded upon discussions at the May 2016 TSN Task Group interim meeting.

Both presentations facilitated considerable discussion, but at this stage that was simply information sharing, on the one hand of the goals of automotive security and considerable constraints of current components, on the other hand of a number of ways in which MACsec might be used (together with secured elements within components) as part of the solution. At this stage it is not clear what, if any, additional 802.1 standards development might be needed to support solution specifications (though there did not appear to be any fundamental divergence of views).

5.2 802.1AE Revision PAR

The meeting agreed to develop an IEEE Std 802.1AE Revision PAR to roll-up 802.1AE-2006, 802.1AEbn-2011, 802.1AEbw-2013 standards, and P802.1AEcg, as soon as the latter is finalized. Apart from the strict roll-up the only other items within the scope of the PAR would be maintenance items. Such a PAR does not require a CSD (as clarified during the closing plenary). An initial draft PAR is in the docs2016 directory.

Future meeting/teleconference planning

Teleconferences were scheduled for 16 August 2016 and 11 October 2016 at 1:00 PM Pacific

Time, and may also be scheduled with 10-day advance notice. The IEEE 802.1 Security Task Group will meet at the September 2016 IEEE 802.1 interim meeting in York, England and at the November 2016 IEEE 802.1 Plenary meeting in San Antonio, TX, USA.

Motions
Motions reflecting Security Task Group conclusions were prepared for the 802.1 closing plenary and can be found in their final form following slide 23 in
http://www.ieee802.org/1/files/public/minutes/2016-07-closing-plenary-slides.pdf.

3.5 Time-Sensitive Networking

The Time-Sensitive Networking (TSN) Task Group Chair, János Farkas presided.
Rodney Cummings wrote the minutes.

At the beginning of the meetings on Monday, Tuesday, Wednesday, and Thursday, János Farkas presented the IEEE-SA PatCom Patent Slides for Standards Development Meetings, and made the "Call for Potentially Essential Patents". There were no responses to the calls prior to the end of the week's session.

Monday 25 July 2016 08:00-10:00 AM
Call to order: 25 July 2016, 08:00 AM

János Farkas presented the agenda for the TSN Task Group meeting week:
http://www.ieee802.org/1/files/public/docs2016/admin-tsn-agenda-0716-v01.pdf
This agenda was approved.

Geoff Garner, P802.1AS-Rev editor, presented http://www.ieee802.org/1/files/private/as-rev-drafts/d4/802-1AS-rev-d4-0.pdf.

Monday 25 July 2016 01:30-6:00 PM
Geoff Garner continued presentation of http://www.ieee802.org/1/files/private/as-rev-drafts/d4/802-1AS-rev-d4-0.pdf

Rodney Cummings presented *802.1AS-rev: Assumptions for Profile Gateway*:
http://www.ieee802.org/1/files/public/docs2016/as-cummings-profile-gateway-0716-v01.pdf

Tom McBeath presented *802.1AS Asymmetrical delay problem and potential update*:
http://www.ieee802.org/1/files/public/docs2016/AS-McBeath-Asymettrice-0716.pptx

Alon Regev presented *Measuring recovered clock quality*:
http://ieee802.org/1/files/public/docs2016/as-aregev-measuring-recovered-clock-quality.pdf

Tony Jeffree, P802d editor, led the resolution of comments received in the WG recirculation ballot on http://www.ieee802.org/1/files/private/802-d-drafts/d0/802d-d0-3.pdf:
http://www.ieee802.org/1/files/private/802-d-drafts/d0/802d-D0-3-dis.pdf

Tuesday 26 July 2016 10:30 AM-6:00 PM
Call to order: 26 July 2016, 10:30 AM

The following presentations were given in a joint session of the TSN and Security TGs:
- Marc Holness presented the PAR and CSD for P802.3.2 *Standard for Ethernet YANG data model definitions*:
  http://grouper.ieee.org/groups/802/PARs/2016_07/IEEE_P802d3d2_230516_PAR.pdf
  http://grouper.ieee.org/groups/802/PARs/2016_07/YANG_SG_draft_csd_v1.4.pdf

- Marc Holness presented *IEEE 802.3 YANG PAR and CSD Comments*:

http://www.ieee802.org/1/files/public/docs2016/admin-mholness-802-3-YANG-PAR-CSD-comments-0716-v01.pdf updated as http://www.ieee802.org/1/files/public/docs2016/admin-mholness-802-3-YANG-PAR-CSD-comments-0716-v02.pdf following discussion.

- Marc Holness presented *IEEE 802.1Q YANG Interface Framework in support of Link Aggregation (802.1AX), Security (802.1X), and CFM (802.1ag):* http://www.ieee802.org/1/files/public/docs2016/cp-mholness-YANG-Link-Aggregation-Model-Summary-0716-v14.pdf

- Mick Seaman presented *Entities, SAPs, YANG Interfaces*: http://www.ieee802.org/1/files/public/docs2016/ae-seaman-entities-saps-interfaces-ppt-0716-v01.pdf

- Stephen Haddock presented *Aggregator / Aggregation Port Model*: http://www.ieee802.org/1/files/public/docs2016/cp-haddock-Aggregator-AggPort-model-0716-v0.pptx

- Marc Holness, P802.1Qcp editor, led the resolution of comments received in the TG ballot on http://www.ieee802.org/1/files/private/cp-drafts/d0/802-1Qcp-d0-4.pdf: http://www.ieee802.org/1/files/private/cp-drafts/d0/802-1Qcp-d0-4-dis-v01.pdf Updated draft: http://www.ieee802.org/1/files/private/cp-drafts/d0/802-1Qcp-d-05.pdf

The Security TG met separately from the TSN TG from this point on.

Norman Finn, P802.1CB editor, led the resolution of comments received in the WG recirculation ballot on http://www.ieee802.org/1/files/private/cb-drafts/d2/802-1CB-d2-4.pdf: http://www.ieee802.org/1/files/private/cb-drafts/d2/802-1CB-d2-4-dis-v02.pdf

Rodney Cummings, P802.1Qcc editor, led the resolution of comments received in the WG ballot on http://www.ieee802.org/1/files/private/cc-drafts/d1/802-1Qcc-d1-0.pdf: http://www.ieee802.org/1/files/private/cc-drafts/d1/802-1Qcc-d1-0-dis-v1.pdf

Feng Chen presented *Configurable Stream Reservation Class for TSN:* http://www.ieee802.org/1/files/public/docs2016/srp-chen-stream-reservation-class-0716-v01.pdf

Tom McBeath presented *802.3 to 802.15.4 Bridging Proposal:* http://www.ieee802.org/1/files/public/docs2016/new-McBeath-64bit-to-48bit-MAC-bridging-description-0716-v01.docx

Behcet Sarikaya presented *64 Bit to 48 Bit MAC Bridging PAR and CSD:* http://ieee802.org/1/files/public/docs2016/new-sarikaya-64bit-to-48bit-MAC-bridging-par-csd-0716-v02.pdf

Wednesday 27 July 2016 08:00 AM-6:00 PM
Call to order: 27 July 2016, 08:00 AM

János Farkas, P802.1AX-2014 Cor-1 editor, led the resolution of comments received in the Sponsor ballot on http://ieee802.org/1/files/private/ax-2014-cor-1-drafts/d0/802-1ax-2014-cor-1-d0-5.pdf: http://ieee802.org/1/files/private/ax-2014-cor-1-drafts/d0/802-1ax-2014-cor-1-d0-5-sb-dis-0716-v01.pdf

Stephen Haddock presented *802-1AX-2014-Cor-1-d0-5 Sponsor Ballot Comments:* http://www.ieee802.org/1/files/public/docs2016/ax-cor-1-haddock-sponsor-comments-0716-

[v1.pptx](#)

Tony Jeffree, P802.1Qci editor, led the resolution of comments received in the WG recirculation ballot on [http://www.ieee802.org/1/files/private/ci-drafts/d1/802-1Qci-d1-2.pdf:](http://www.ieee802.org/1/files/private/ci-drafts/d1/802-1Qci-d1-2.pdf) http://www.ieee802.org/1/files/private/ci-drafts/d1/802-1Qci-D1-2-dis.pdf

János Farkas presented *Asynchronous Gates P802.1Qci:* http://ieee802.org/1/files/public/docs2016/ci-farkas-asynchron-gates-0716-v01.pdf

Johannes Specht presented *802.1Qci - Thoughts on Blocking:* http://www.ieee802.org/1/files/public/docs2016/qci-specht-shapedetectblock-0716-v01.pdf

Tony Jeffree, P802.1Qch editor, presented http://www.ieee802.org/1/files/private/ch-drafts/d0/802-1Qch-d0-2.pdf

Jouni Korhonen presented *RoE and NGFI update:* http://www.ieee802.org/1/files/public/docs2016/new-roe-jik-ieee1914and1904-0716-v00.pdf

David Chen presented *Fronthaul Bandwidth Analysis and Latency Constraint Considerations:* http://www.ieee802.org/1/files/public/docs2016/cm-chen-fronthaul-bandwidth-analysis-0716-v01.pdf

János Farkas, P802.1CM editor, presented *P802.1CM – D0.4 Editor's Report / Comment Resolution for 1st TG Ballot:* http://www.ieee802.org/1/files/public/docs2016/cm-farkas-editor-report-0716-v01.pdf

János Farkas started the resolution of comments received in the TG ballot for P802.1CM on http://www.ieee802.org/1/files/private/cm-drafts/d0/802-1CM-d0-4.pdf: http://www.ieee802.org/1/files/private/cm-drafts/d0/802-1CM-d0-4-pdis-v01.pdf

Tim Godfrey presented *Utility Applications of TSN:* http://www.ieee802.org/1/files/public/docs2016/new-godfrey-tsn-utility-applications-0716-v01.pdf

János Farkas presented the draft *Liaison response to IEEE 1914:* http://www.ieee802.org/1/files/public/docs2016/liaison-response-IEEE1914-NGFI-0716-v01.pdf

Thursday 28 July 2016 08:00 AM-12:30 PM
Call to order: 27 July 2016, 08:00 AM

Craig Gunther presented *SRP and Reservation Types:* http://www.ieee802.org/1/files/public/docs2016/cc-cgunther-srp-reservation-types-0716-v02.pdf

Jordon Woods presented *Avnu's Use of 802.1 TSN Mechanisms for Industrial and Automotive Markets:* http://ieee802.org/1/files/public/docs2016/liaison-woods-AVnuResponse-0716-v00.pdf

János Farkas presented the draft *Liaison response to ITU-T SG15 LS-332:* http://www.ieee802.org/1/files/public/docs2016/liaison-response-itu-t-com15-ls332-0716-v01.pdf

János Farkas presented the draft *Liaison letter to 3GPP RAN3:* http://www.ieee802.org/1/files/public/docs2016/liaison-3GPP-RAN3-0716-v01.pdf

Norman Finn presented *the draft* liaison *IEEE 802.1 and IEC SC65C WG15: Review of IEEE P802.1CB/D2.3:*

http://www.ieee802.org/1/files/public/docs2016/liaison-response-IEC-SC65C-WG15-0716-v01.pdf

Jessy Rouyer presented the draft *Liaison response to ITU-T SG15 LS362 and LS353:* http://www.ieee802.org/1/files/public/docs2016/liaison-response-itu-t-SG15-LS362-LS353-v01.docx

Tim Godfrey presented the draft *Liaison request from IEEE 802.1 / 802.24 requesting exchange of information:* http://www.ieee802.org/1/files/public/docs2016/liaison-PESC-PSRC-0716-v01.pdf

Craig Gunther presented the draft liaison to AVnu Alliance regarding *Market Usage of TSN Features:* http://www.ieee802.org/1/files/public/docs2016/liaison-AVnu-TSN-features-0716-v01.pdf

János Farkas led the review of TSN Task Group motions as finalized in http://www.ieee802.org/1/files/public/minutes/2016-07-closing-plenary-slides.pdf

Feng Chen presented *Discussion of PAR for Link-Local Registration Protocol (LRP):* http://www.ieee802.org/1/files/public/docs2016/new-chen-LRP-discussion-0716-v01.pdf

Rodney Cummings presented the first half of *RESTful APIs and 802.1Qcc:* http://ieee802.org/1/files/public/docs2016/cc-cummings-REST-0516-v00.pdf

Motions
Motions reflecting TSN Task Group conclusions were prepared for the 802.1 closing plenary and can be found in their final form following slide 35 in http://www.ieee802.org/1/files/public/minutes/2016-07-closing-plenary-slides.pdf.

4 Joint meeting with 802.15.4

A joint meeting between IEEE 802.1 and IEEE 802.15.4 was held on Tuesday 26 July PM3.

The 802.1 Chair and Pat Kinney presided. Pat Kinney wrote the minutes of this joint meeting that are incorporated in these minutes by reference and are available page 10 of https://mentor.ieee.org/802.15/dcn/16/15-16-0526-00-0mag-standing-committees-minutes-from-san-diego-july-2016.docx.

Pat Kinney presented the agenda (https://mentor.ieee.org/802.15/dcn/16/15-16-0476-02-0mag-sc-opening-closing-report-for-san-diego-july-2016.pptx, starting on slide 26), which was approved.

In regards to the Wi-Fi Alliance liaison at http://www.ieee802.org/1/files/public/docs2016/liaison-WFA-Wi-Fi-HaLow-0516.pdf (introduced by Pat Kinney), the 802.1 Chair noted that IEEE 802.1 needs more information to go forward and indicated that 802.1 would wait for more justifications.

5 Closing Plenary Meeting

Call to order: 28 July 2016, 1:30 PM.

The 802.1 Chair, Glenn Parsons, presided.
The 802.1 Recording Secretary, Jessy Rouyer, wrote the minutes.

The Chair presented the *802.1 Closing Plenary* slides available at http://www.ieee802.org/1/files/public/minutes/2016-07-closing-plenary-slides.pdf.

Details comprising motion text, proposer, seconder, numbers of 802.1 voting members for, against or abstaining on all motions moved during this closing plenary meeting are available in these slides. Motions are otherwise summarized below.

During this presentation, the Chair:

- Showed slides 2 through 6 (reproducing slides 0 through 4 of the IEEE-SA PatCom Patent Slides for Standards Development Meetings, separately available at http://standards.ieee.org/about/sasb/patcom/materials.html):
  - o The Chair made the "Call for Potentially Essential Patents". There were no responses to the call.
- Introduced 802.1 Officers and provided 802.1 website information (slide 7).
- Reviewed the list of 802.1 voting members, including information about individuals who have lost, have gained or may have gained 802.1 voting membership at this meeting (slides 8 through 11).
- Reviewed the schedule for future 802 plenaries (slide 13) and that for future 802.1 interim meetings (slide 12). The latter remained unchanged from the 25 July 2016 802.1 opening plenary except for new leads for May 2017, September 2017 and May 2018. January 2018 remained open:
  - o Stephan Kehrer presented *IEEE 802.1 Interim meeting proposal Stuttgart, Germany May 15.-18. (Mon – Thu), 2017*: http://www.ieee802.org/1/files/public/docs2016/admin-kehrer-Stuttgart-proposal-0716-v01.pdf.
    - ▪ The Chair conducted Straw Polls on:
      - • "Who would attend an interim meeting in May 2017 in Stuttgart, Germany?" with 29 Yes, 1 No, 11 Abstain (47 individual participants in the room).
      - • Using "Chicago rules":
        - o "Who would attend if the meeting was hosted by Ethernet Alliance in May 2017?": 26.
        - o "Who would attend if the meeting was hosted in Korea the first full week of May 2017?": 19
    - ▪ Norman Finn moved an administrative motion (seconded by Mick Seaman) for the May 2017 IEEE 802.1 interim meeting to be held 15-18 May 2017 in Stuttgart, Germany (hosted by Hirschmann), "Support holding May 2017 interim meeting in Stuttgart": 24 in favor, 0 against, 7 abstaining. Motion passed.
- Reviewed the current WG's work load: 22 active projects, including in-progress PARs (slide 14).
- Requested presentations of the reports on 802 Standing Committees (slide 15):
  - o John Messenger agreed to report on the JTC1 SC (https://mentor.ieee.org/802.11/dcn/16/11-16-0761-03-0jtc-ieee-802-jtc1-sc-agenda-for-july-2016.pptx) during his report of the Maintenance TG.
  - o The Chair reported on the ITU SC (https://mentor.ieee.org/802-ec/dcn/16/ec-16-0120-00-INTL-itu-standing-committee-agenda-july-2016.pdf).
  - o The Chair reported on the 5G SC (https://mentor.ieee.org/802-ec/dcn/16/ec-16-0119-01-5GSG-report-ieee-802-ec-5g-imt-2020-sc.pptx).
  - o Patricia Thaler reported on the IETF SC, inviting individual participants to 802.1 to review draft-ietf-tsvwg-ieee-802-11-00 (per http://www.ieee802.org/1/private/email2/msg24920.html).
- Presented the report on the 802 Task Force (slide 16), including indemnification of volunteer officers/editors, myProject replacement, and IEEE-SA staff support:
  - o Program: Jonathan Goldberg & Kathryn Bennett
  - o Editors: Michelle Turner & Catherine Berger
  - o International: Jodi Haasz
- Requested the 802.1 TG Chairs (or Vice-Chair) to provide reports on the activities of their TGs (see individual TG minutes above for details):
  - o Mick Seaman summarized Security TG progress.
  - o Patricia Thaler summarized DCB TG progress.

- o János Farkas summarized TSN TG progress.
- o Maximilian Riegel summarized OmniRAN TG progress.
- o John Messenger summarized Maintenance TG progress and reported on JTC1 SC.
- Led the review of outgoing liaisons (slide 19):
  - o Patrick Kinney presented https://mentor.ieee.org/802.15/dcn/16/15-16-0548-00-0000-joint-meeting-response-to-wi-fi-alliance-request.docx, updated it in https://mentor.ieee.org/802.15/dcn/16/15-16-0548-01-0000-joint-meeting-response-to-wi-fi-alliance-request.docx following 802.1 review.
    - The Chair conducted a vote on the following TSN motion that passed:
      - 802.1 approves the liaison response to Wi-Fi Alliance on Wi-Fi HaLow use case for Wireless Field Network on Industry Automation
        - o https://mentor.ieee.org/802.15/dcn/16/15-16-0548-01-0000-joint-meeting-response-to-wi-fi-alliance-request.docx

        And authorizes the chair to resolve any conflict with the 802.15 approved version of the liaison
  - o The Chair reviewed the outgoing liaisons to 3GPP RAN3 on 802.1CM, to IEEE 1914 on 802.1CM, to IEEE PES PSRC on TSN, to ITU-T Q13/15 on TSN, to ITU-T Q14/15 on YANG, to AVnu, to IEC SC65C WG15, to WFA, and to IETF on NVO3
  - o Mick Seaman reviewed the outgoing liaison to IETF on YANG.
- Conducted votes on the following motions that passed (unless otherwise indicated):
  - o Administrative Motions:
    - 802.1 approves the March 2016 (Plenary) and May 2016 (Interim) minutes:
      - http://ieee802.org/1/files/public/minutes/2016-03-minutes.pdf
      - http://ieee802.org/1/files/public/minutes/2016-05-minutes.pdf
  - o Security Motions:
    - 802.1 confirms the PAR and CSD
      - http://www.ieee802.org/1/files/public/docs2014/cg-draft-aecg-csd-0714-v3.pdf

      And requests EC approval to forward P802.1AEcg D1.4 to Sponsor ballot.
    - 802.1 instructs the editor of P802.1ARce Secure Device Identity – Amendment: SHA- 384 and P-384 Elliptic Curve (Mick Seaman) to prepare drafts for and conduct Working Group balloting[1].
    - 802.1 authorizes the September 2016 Interim to generate a PAR and CSD[2] for P802.1AR- Rev [Secure Device Identity – Revision] for pre-circulation to the EC[3].
    - 802.1 authorizes the September 2016 Interim to generate a PAR1 for P802.1AE-Rev [Media Access Control (MAC) Security – Revision] for pre-circulation to the EC.
    - 802.1 authorizes the Security Task Group to hold teleconferences to progress P802.1ARce, P802.1AEcg, P802.1Xck, P802E and task group matters arising:
      - 16th August 2016 at 1.00 pm Pacific Time
      - 11th October 2016 at 1.00 pm Pacific Time
      - Additional dates/times to be announced subject to notice of at least 10 days to the 802.1 email exploder
  - o DCB Motions:
    - 802.1 authorizes DCB TG virtual conferences at 5 PM PT on alternate Tuesdays starting after completion of the initial Task Group ballot for 802.1Qcn VDP Extensions for NVO3.
      - Start date to be announced at least 10 days before, to the 802.1 email exploder
    - 802.1 authorizes the editors of P802.1Qcn (Yizhou Li and Paul Bottorff) to prepare

---

[1] The next P802.1ARce ballots expected to close prior to the September 2016 interim meeting. If it starts before 12th August that could be a 30-day WG ballot, otherwise that would be a 15-day Task Group ballot starting no later than 27th August. In either case our plan should allow for a WG ballot prior to the November 2016 meeting, and we would also require a full WG ballot after NesCom approval of the proposed P802.1AR-Rev PAR.

[2] Initial drafts are at http://www.ieee802.org/1/files/public/docs2016/ar-seaman-rev-draft-par-0716-v01.pdf and http://www.ieee802.org/1/files/public/docs2016/ar-seaman-rev-draft-csd-0716-v01.pdf.

[3] To subsume the P802.1ARce work, withdrawing the latter PAR once P802.1AR-Rev is approved. Presumed that this needs full pre-circulation and notice, and cannot be taken to the EC as an administrative action at this meeting.

drafts for and conduct Task Group balloting.
- 802.1 approves the liaison to the IETF NVO3 WG on VDP extension for NVO3 http://www.ieee802.org/1/files/public/docs2016/dcb-liaison-ietf-nvo3-vdp-1607-v1.docx
- 802.1 authorizes the September 2016 Interim to generate P802c PAR and CSD modification to add maintenance, including adding use of CID as a protocol identifier, for pre-circulation to the EC.
  o TSN Motions:
    - 802.1 resolves to hold pre-meeting(s) on the Monday morning of the November 2016 Plenary session for TSN.
    - 802.1 confirms the PAR and CSD and requests EC conditional approval to forward P802.1Qci, Per- Stream Filtering and Policing, to Sponsor Ballot.
      • PAR: https://development.standards.ieee.org/get-file/P802.1Qci.pdf?t=86069100003
      • CSD: http://www.ieee802.org/1/files/public/docs2015/new-nfinn-input-gates-csd-0115-v03.pdf
    - 802.1 confirms the PAR and CSD and requests EC conditional approval to forward P802d, Allocation of Uniform Resource Name (URN) values in IEEE 802 standards, to Sponsor Ballot.
      • PAR: http://www.ieee802.org/1/files/public/docs2015/new-parsons-URN-Namespace-PAR-1115-v01.pdf
      • CSD: http://www.ieee802.org/1/files/public/docs2015/new-parsons-URN-Namespace-CSD-1115.pdf
    - 802.1 authorizes Tony Jeffree, editor of P802.1Qch, Cyclic Queuing and Forwarding, to prepare drafts for and conduct Working Group balloting.
    - 802.1 confirms the PAR and 5C and requests EC conditional approval to forward P802.1CB Frame Replication and Elimination for Reliability, to Sponsor Ballot.
      • PAR: https://development.standards.ieee.org/P828000033/par
      • 5C: http://www.ieee802.org/1/files/private/cb-drafts/d2/802-1CB-d2-5.pdf
    - 802.1 authorizes the September 2016 Interim to generate PAR and CSD for pre-circulation to the EC for LRP (new registration protocol).
    - 802.1 authorizes the TSN TG to continue to have virtual conferences weekly on Mondays at 8AM (US-Pacific) for TSN general topics. Access information is posted here: http://www.ieee802.org/1/pages/tsn.html and will be updated as necessary.
    - 802.1 authorizes the TSN Task Group to hold teleconference on August 30, 2016, 8-10 AM US Pacific Time to progress P802.1CM
      • Access information will be available here http://www.ieee802.org/1/pages/tsn.html
    - 802.1 approves the liaison response to the ITU-T Q13/15 liaison LS 332
      • http://www.ieee802.org/1/files/public/docs2016/liaison-response-itu-t-com15-ls332-0716-v01.pdf
    - 802.1 approves the liaison response to the IEEE 1914 NGFI liaison
      • http://www.ieee802.org/1/files/public/docs2016/liaison-response-IEEE1914-NGFI-0716-v01.pdf
    - 802.1 approves the liaison letter to 3GPP RAN3 on P802.1CM
      • http://www.ieee802.org/1/files/public/docs2016/liaison-3GPP-RAN3-0716-v01.pdf
    - 802.1 approves the liaison response to IEC SC65C WG15 on IEEE P802.1CB
      • http://www.ieee802.org/1/files/public/docs2016/liaison-response-IEC-SC65C-WG15-0716-v01.pdf
    - 802.1 approves the response to the ITU-T SG15 liaison LS 353 on UML to YANG mapping and LS 362 on request for UML
      • http://www.ieee802.org/1/files/public/docs2016/liaison-response-itu-t-SG15-LS362-LS353-v01.docx
    - 802.1 approves the liaison letter to AVnu Alliance on TSN features

- http://www.ieee802.org/1/files/public/docs2016/liaison-AVnu-TSN-features-0716-v01.pdf
  - 802.1 approves the liaison letter to IEEE PES PSRC on TSN features
    - http://www.ieee802.org/1/files/public/docs2016/liaison-PESC-PSRC-0716-v01.pdf

    and authorizes the chair to resolve any conflict with the 802.24 approved version of the liaison
  - 802.1 approves the liaison response to IETF on draft-wilton-netmod-intf-vlan- yang-03
    - http://www.ieee802.org/1/files/public/docs2016/liaison-ietf-intf-vlan-yang-0716-v01.txt
  - 802.1 approves the liaison response to Wi-Fi Alliance on Wi-Fi HaLow use case for Wireless Field Network on Industry Automation
    - https://mentor.ieee.org/802.15/dcn/16/15-16-0548-01-0000-joint-meeting-response-to-wi-fi-alliance-request.docx

    And authorizes the chair to resolve any conflict with the 802.15 approved version of the liaison
- OmniRAN Motions:
  - Approve OmniRAN TG conference calls on:
    - September 27th, 09:30 AM ET, 90mins
    - October 25th, 09:30 AM ET, 90mins
    - Agenda and call-in details will be made available on the 802.1 mailing list and on https://mentor.ieee.org/omniran/bp/StartPage
  - Authorize OmniRAN TG to hold an interim meeting in September at the IEEE 802 Wireless Interim in Warsaw, PL on September 13-15.
- Maintenance Motions:
  - 802.1 authorizes Maintenance TG to hold teleconferences on 6th September and 1st November 2016 at 11am-1pm ET if necessary. Access information will be posted to the 802.1 reflector in advance.
  - 802.1 requests EC approval to forward the following maintenance PAR to NesCom:
    - 802.1Q-Rev "Bridges and Bridged Networks"
    - http://www.ieee802.org/1/files/public/docs2016/q-messenger-draft-revision-par-0716-v01.pdf
    - Note: There are no CSD for this maintenance PAR.
  - 802.1 requests EC approval to forward the comment responses in documents
    - http://ieee802.org/1/files/public/docs2016/liaison-randall-SC6responseQbv-0716.pdf
    - http://ieee802.org/1/files/public/docs2016/liaison-randall-SC6responseAB-0716.pdf
    - http://ieee802.org/1/files/public/docs2016/liaison-randall-SC6responseQca-0716.pdf

    to ISO/IEC JTC1 SC6 under the PSDO agreement. These are responses to the comments received on recent 60-day ballots of 802.1Qbv-2015, 802.1AB-2016 and 802.1Qca-2015.
  - 802.1 requests EC approval to forward the following standard to JTC1 SC6 for **adoption** under the PSDO agreement:
    - 802.1Qcd-2015 – Application VLAN TLV
  - 802.1 requests EC approval to forward the following documents to ISO/IEC JTC1 SC6, for **information** under the PSDO agreement once they have begun sponsor ballot :
    - P802.1AEcg
    - P802.1Qci
    - P802.1CB
    - P802d
  - 802.1 confirms the PAR and requests EC conditional approval to forward

P802.1AC-Rev to RevCom
- Note: There are no 5C/CSD for this maintenance PAR.
- No new Disapprove comments
- 2 Disapprove votes (one from a previous ballot, one from latest ballot)
- 1 restated comment supporting a Disapprove vote
- Plan: recirculate in August; Comment resolution at 802.1 mtg Sept 12-15, 2016. Recirculate in Sept if necessary

There was no other business to discuss and the closing plenary meeting was adjourned.

6 Next meeting

12-15 September 2016, York, UK

_____