

# IEEE 802.1 Working Group

## 15-18 May 2017 Interim Meeting

### Stuttgart, Germany

## Draft 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

<i>Last Name</i>	<i>First Name</i>	<i>Affiliation</i>
Baehren	Frank	Intel Corporation
Bao	Shenghua	HUAWEI
Bechstein	Ralph	Viavi Solutions
Bechtel	Gordon	Bechtel
Bierschenk	Jens	Robert Bosch GmbH
Boiger	Christian	b-plus GmbH
Chen	David	Nokia
Chen	Feng	Siemens AG
Cummings	Rodney	National Instruments Corporation
Elbakoury	Hesham	Huawei Technologies Co. Ltd
Ellegaard	Lars	Microsemi Corporation
Farkas	Janos	Ericsson
Finn	Norman	Huawei Technologies Co. Ltd
Gangula	Sridhara	ADVA Optical Networking Ltd.
Garner	Geoffrey	Broadcom Corporation
Geilhardt	Frank	Deutsche Telekom AG
Geyer	Fabien	Airbus Group
Glass	Jonas	Hirschmann Automation and Control, Inc.
Gray	Eric W	Ericsson AB
Gutierrez	Marina	TTTech Computertechnik AG
Haddock	Stephen	Stephen Haddock Consulting, LLC
Hantel	Mark	Rockwell Automation
Hu	NongDa	Huawei Technologies Co. Ltd
Huang	Jing	Huawei Technologies Co., Ltd
Hummen	Rene	Hirschmann Automation and Control, Inc.
Illouz	Marc	L-Acoustics
Karl	Michael	Marvell Semiconductor, Inc.
Kehrer	Stephan	Hirschmann Automation and Control, Inc.
Kiessling	Marcel	Siemens AG
KOTO	Hajime	National Institute of Information and Communications Technology (NICT)
Mansfield	Scott	Telefon AB LM Ericsson
Marks	Roger	EthAirNet Associates; Huawei

Messenger	John	ADVA Optical Networking Ltd.
Mueck	Florian	Hirschmann Automation and Control, Inc.
Mustala	Tero	Nokia Networks
Ohsawa	Tomoki	NICT
Pannell	Donald R	Marvell Semiconductor, Inc.
Parsons	Glenn	Ericsson AB
QIU	WEI	Huawei Technologies Co., Ltd
Riegel	Maximilian	Nokia Networks
Rouyer	Jessy	Nokia
Schmitt	Juergen	Siemens AG
Seaman	Michael	Individual
Seehofer	Markus	Hirschmann Automation and Control, Inc.
Specht	Johannes	University of Duisburg-Essen and General Motors Company
Thaler	Patricia	Broadcom Limited
Turner	Max	BMW Group
Unbehagen	Paul	Avaya Inc.
Veisllari	Raimena	TransPacket
Wang	Hao	Fujitsu Research & Development Center
Wang	Tongtong	Huawei Technologies Co. Ltd
Wang	Xinyuan	Huawei Technologies Co. Ltd
Weber	Karl	Beckhoff
Woods	Jordon	Innovasic, Inc.
wu	yanwei	ZTE Corporation
Yin	Yue	Huawei Technologies Co., Ltd
YU	XIANG	Huawei Technologies Co., Ltd
Zein	Nader	NEC Corporation

## 2 Data Center Bridging

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

At the beginning of the meetings on Wednesday, Patricia Thaler verified that all participants had seen the IEEE-SA PatCom Patent Slides for Standards Development Meetings earlier in the week, and made the “Call for Potentially Essential Patents”. There were no responses to the calls prior to the end of the week’s sessions.

### **Tuesday 17 January 2017 9:15 AM-12:40 PM**

Call to order: 17 May 2017, 9:15 AM

Patricia Thaler presented the following agenda for the meeting:

- New work
- P802c
- P802.1CQ

This agenda was approved.

Yolanda Yu presented *Requirement Discussion of Flow-Based Flow Control(FFC)*

<http://www.ieee802.org/1/files/public/docs2017/new-dcb-yolanda-ffc-proposal-0517-v01.pdf>

- Suggestions were made that congestion control is a preferred mechanism for minimizing congestion spreading when PFC is used or for using instead of PFC when protocols can tolerate some drops.

- Concerns were expressed about the amount of memory needed for headroom to support more granular flow control.

Patricia Thaler reported that P802c has been submitted to RevCom.

Mick Seaman presented *Trusted MAC Addresses, Making MAC Address filtering and authorization meaningful* <http://www.ieee802.org/1/files/public/docs2017/cq-seaman-trusted-addresses-0517-v0.pdf>

- Consensus was that this is an interesting approach. Something to be explored is what part of this belongs in P802.1CQ and what belongs elsewhere. Some might belong in IETF.

### 3 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/2017-05-maintenance-meeting-v2.pdf>.

Maintenance Task Group meeting minutes for prior meetings are available at: <http://www.ieee802.org/1/maint.html>

### 4 OmniRAN

The OmniRAN Task Group minutes are incorporated in these minutes by reference and are available at <https://mentor.ieee.org/omniran/dcn/17/omniran-17-0047-00-00TG-may-2017-f2f-meeting-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>.

### 5 Security

The Security Task Group did not meet at this meeting.

### 6 Time-Sensitive Networking

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

At the beginning of the meetings on Monday, Wednesday, Thursday, and following announcement of the TSN tutorial at IETF 99 on Tuesday, János Farkas presented the IEEE-SA PatCom Patent Slides for Standards Development Meetings <https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf>, and made the Call for Potentially Essential Patents. There were no responses to the calls prior to the end of the week's session.

On Monday evening, János Farkas presented <http://www.ieee802.org/1/files/public/docs2017/tsn-farkas-intro-0517-v01.pdf>.

**Monday 15 May 2017 8:00 AM-6:00 PM**

Call to order: 15 May 2017, 8:00 AM

János Farkas presented the agenda for the TSN Task Group meeting week:

[https://docs.google.com/spreadsheets/d/1O5lv694swoduply-0yjOITNMeV2Y0G-fyM9cNDChKtE/edit?usp=drive\\_web](https://docs.google.com/spreadsheets/d/1O5lv694swoduply-0yjOITNMeV2Y0G-fyM9cNDChKtE/edit?usp=drive_web).

**Disposition:** This agenda was approved.

János Farkas reported on TSN marketing efforts:

- *Introduction to TSN for newcomers:*  
<http://ieee802.org/1/files/public/docs2017/tsn-farkas-intro-0517-v01.pdf>
- *MEF Q2 2017 - P802.1CM Overview:*  
<http://ieee802.org/1/files/public/docs2017/cm-farkas-overview-for-MEF-MBH-IA-0417.pptx>
- *Flyer: TSN for Automotive Networks:*  
[http://standards.ieee.org/downloads/TSN\\_for\\_Automotive\\_Networks.pdf](http://standards.ieee.org/downloads/TSN_for_Automotive_Networks.pdf)
- *Flyer: TSN for Industrial Networks:*  
[http://standards.ieee.org/downloads/TSN\\_for\\_Industrial\\_Networks.pdf](http://standards.ieee.org/downloads/TSN_for_Industrial_Networks.pdf)
- *Deterministic Ethernet Forum:*
  - <https://www.de-forum.com/forum-speakers/>
  - <http://ieee802.org/1/files/public/docs2017/tsn-farkas-def-role-of-organizations-0517.pdf>
  - <http://www.ieee802.org/1/files/public/docs2017/tsn-farkas-def-0317-v04.pptx>
- *ICC'17 - 5G C-RAN and X-Haul:*  
<http://icc2017.ieee-icc.org/program/industry#P06>
- *TSN/A - TSN Technology & Applications (Sep 20-21, 2017, Stuttgart):*  
<http://www.tsnaconference.de/home.html>
- *IEEE-SA Ethernet & IP @ Automotive Technology Day (Nov 1-2, 2017):*  
<https://standards.ieee.org/events/automotive/>

Geoff Garner, P802.1AS-Rev editor, continued resolving the comments received in the TG ballot on <http://www.ieee802.org/1/files/private/as-rev-drafts/d4/802-1AS-rev-d4-5.pdf>.

**Disposition:** Ballot comment resolution recorded in <http://www.ieee802.org/1/files/private/as-rev-drafts/d4/802-1AS-rev-d4-5-dis.pdf>

Rodney Cummings, P802.1Qcc editor, presented *802.1Qcc D1.4: Intro for Comment Resolution* <http://www.ieee802.org/1/files/public/docs2017/cc-cummings-d14-comments-intro-0517-v1.pdf>, and began resolving comments received in the WG ballot for P802.1Qcr on <http://www.ieee802.org/1/files/private/cc-drafts/d1/802-1Qcc-d1-4.pdf>

**Disposition:** Ballot comment resolution recorded post-meeting in <http://www.ieee802.org/1/files/private/cc-drafts/d1/802-1Qcc-d1-4-dis.pdf>

Rodney Cummings, P802.1Qcc editor, led the review of a draft P802.1Qcc PAR extension: <http://www.ieee802.org/1/files/public/docs2017/cc-cummings-par-extension-proposal.pdf>

**Disposition:** Update based on discussion: <http://www.ieee802.org/1/files/public/docs2017/cc-cummings-par-extension-proposal-v2.pdf>; draft PAR provided post-meeting: <http://www.ieee802.org/1/files/public/docs2017/cc-PAR-extension-0517-v01.pdf>

## **Tuesday 16 May 2017 10:30 AM-6:00 PM**

Call to order: 16 May 2017, 10:30 AM

The 802.1 Chair, Glenn Parsons, presented regarding the planned September 2017 interim meeting in *St. John's Newfoundland Canada*

<http://www.ieee802.org/1/files/public/docs2017/admin-parsons-nfld-interim-update-0517-v1.pdf> and conducted the following straw polls:

- “How many people will be expecting to come to the meeting in September?”: 45
- “Who prefers Social option #1?”: 16
- “Who prefers Social option #2?”: 1
- “Who wants lunch included?”: 15

The 802.1 Chair noted a preference for including lunch and noted that attendees could stay at another hotel than the meeting’s hotel as there is no minimum block.

The 802.1 Chair announced that there will be a Monday night “Automotive tutorial” at the July 2017 IEEE 802 plenary meeting on how 802 technologies apply to the automobile and what new work is in progress to support this. He added that this tutorial will replace the TSN tutorial.

The TSN TG Chair, János Farkas, noted that there will be a tutorial on TSN at IETF 99 in the afternoon of July 16<sup>th</sup>.

János Farkas, P802.1CM editor, presented *IEEE P802.1CM Time-Sensitive Networking for Fronthaul* <http://ieee802.org/1/files/public/docs2017/cm-farkas-overview-for-MEF-MBH-IA-0417.pptx>, *P802.1CM – D0.6 Editor’s Report*

<http://www.ieee802.org/1/files/public/docs2017/cm-farkas-editor-report-0317-v05.pdf>, and completed the resolution of comments received in the TG ballot on

<http://www.ieee802.org/1/files/private/cm-drafts/d0/802-1CM-d0-6.pdf>

**Disposition:** Ballot comment resolution recorded in <http://www.ieee802.org/1/files/private/cm-drafts/d0/802-1CM-d0-6-dis-v01.pdf> (provided post-meeting), prepare a draft for further TG ballot

Norman Finn presented *YANG model requirements for queuing*

<http://www.ieee802.org/1/files/public/docs2017/new-finn-queue-YANG-req-05-17-v01.pdf>

**Disposition:** Related to new subject; more discussion needed

Stephan Kehrer presented *TSN Configuration From MIB to YANG – how to proceed?*

<http://www.ieee802.org/1/files/public/docs2017/cb-kehrer-TSN-Configuration-0517-v01.pdf>

**Disposition:** Proposes new project; PAR/CSD to be prepared

Stephan Kehrer led the review of draft PAR/CSD for P802.1CBcv (Information Model, YANG Data Model and Management Information Base Module):

- Draft PAR: <http://www.ieee802.org/1/files/public/docs2017/new-kehrer-CB-amendment-draft-PAR-0517-v01.pdf>
- Draft CSD: <http://www.ieee802.org/1/files/public/docs2017/new-kehrer-CB-amendment-draft-CSD-0517-v01.pdf>

**Disposition:** Updated draft PAR/CSD (provided post-meeting) to be pre-circulated for vote at the July 2017 plenary meeting:

- Draft PAR: <http://www.ieee802.org/1/files/public/docs2017/cv-draft-PAR-0517-v01.pdf>
- Draft CSD: <http://www.ieee802.org/1/files/public/docs2017/cv-draft-CSD-0517-v01.pdf>

Johannes Specht, P802.1Qcr editor, began resolving comments received in the TG ballot on <http://www.ieee802.org/1/files/private/cr-drafts/d0/802-1Qcr-d0-1.pdf> based on

<http://www.ieee802.org/1/files/private/cr-drafts/d0/802-1Qcr-D0-1-pdis-v1.pdf>

**Disposition:** Continue ballot resolution to continue this week or on TSN TG conference calls

**Wednesday 17 May 2017 8:00 AM-6:00 PM**

Call to order: 17 May 2017, 8:00 AM

Jessy Rouyer presented the following incoming liaisons regarding YANG for CFM:

- From MEF: [http://www.ieee802.org/1/files/public/docs2017/liaison-MEF-L00265\\_SOAMYANG-0517.pdf](http://www.ieee802.org/1/files/public/docs2017/liaison-MEF-L00265_SOAMYANG-0517.pdf)
- From ITU-T SG15: <http://www.ieee802.org/1/files/public/docs2017/liaison-ITUT-SG15-LS019-CFM YANG-0417.pdf>

**Disposition:** Prepare an outgoing liaison response

Scott Mansfield presented *CFM YANG* <http://www.ieee802.org/1/files/public/docs2017/new-smansfield-YANG-cfm-document-0517-v04.pdf>

**Disposition:** Related to new subject; more discussion needed

Tongtong Wang presented *Need for Yang Model with 802.1Qbv*

<http://www.ieee802.org/1/files/public/docs2017/new-wangtt-need-for-yang-model-0517.pdf>

**Disposition:** Related to two new subjects; more discussion needed

János Farkas led a discussion to decide if the TSN TG should develop one or two PARs for proposed YANG modules based on 802.1Q (CFM, TSN) and conducted two Straw Polls, the 802.1 Chair noting that the decision taken as a result of these Straw Polls may still be flipped at the July 2017 plenary meeting:

- “Who supports all these four features [CFM, 802.1Qbu/Qbv/Qci] in one PAR?": 2
- “Who supports two PARs [one on CFM and another on 802.1Qbu/Qbv/Qci]?": 13

**Disposition:** Two PARs/CSDs to be prepared

Marina Gutiérrez led the review of draft PAR/CSD for P802.1Qcw (YANG Data Models for Scheduled Traffic, Frame Preemption, and Per-Stream Filtering and Policing):

- Draft PAR: <http://www.ieee802.org/1/files/public/docs2017/new-gutierrez-yang-for-Qbu-Qbv-Qci-draft-PAR-0515-v01.pdf>
- Draft CSD: <http://www.ieee802.org/1/files/public/docs2017/new-gutierrez-yang-for-Qbu-Qbv-Qci-draft-CSD-0515-v01.pdf>

**Disposition:** Updated draft PAR/CSD (provided post-meeting) to be pre-circulated for vote at the July 2017 plenary meeting:

- Draft PAR: <http://www.ieee802.org/1/files/public/docs2017/cw-draft-PAR-0517-v01.pdf>
- Draft CSD: <http://www.ieee802.org/1/files/public/docs2017/cw-draft-CSD-0517-v01.pdf>

János Farkas led the review of draft PAR/CSD for P802.1Qcx (Bridges and Bridged Networks Amendment: YANG Data Model for Connectivity Fault Management):

- Draft PAR: <http://www.ieee802.org/1/files/public/docs2017/new-farkas-yang-for-CFM-draft-PAR-0515-v01.pdf>
- Draft CSD: <http://www.ieee802.org/1/files/public/docs2017/new-farkas-yang-for-CFM-draft-CSD-0515-v01.pdf>

**Disposition:** Updated draft PAR/CSD (provided post-meeting) to be pre-circulated for vote at the July 2017 plenary meeting:

- Draft PAR: <http://www.ieee802.org/1/files/public/docs2017/cx-draft-PAR-0517-v01.pdf>
- Draft CSD: <http://www.ieee802.org/1/files/public/docs2017/cx-draft-CSD-0517-v01.pdf>

Marina Gutiérrez led the review of draft PAR/CSD for P802.1ABcu (Station and Media Access Control Connectivity Discovery Amendment: YANG Data Model):

- Draft PAR: <http://www.ieee802.org/1/files/public/docs2017/new-gutierrez-yang-for-AB-draft-PAR-0515-v01.pdf>
- Draft CSD: <http://www.ieee802.org/1/files/public/docs2017/new-gutierrez-yang-for-AB-draft-CSD-0515-v01.pdf>

**Disposition:**

Updated draft PAR/CSD (provided post-meeting) to be pre-circulated for vote at the July 2017 plenary meeting:

- Draft PAR: <http://ieee802.org/1/files/public/docs2017/cu-draft-PAR-0517-v01.pdf>
- Draft CSD: <http://ieee802.org/1/files/public/docs2017/cu-draft-CSD-0517-v01.pdf>

Jessy Rouyer presented a draft of the outgoing liaison response (<http://www.ieee802.org/1/files/public/docs2017/liaison-response-CFM-YANG-0517-v01.pdf>) to the incoming liaison letters from MEF ([http://www.ieee802.org/1/files/public/docs2017/liaison-MEF-L00265\\_SOAMYANG-0517.pdf](http://www.ieee802.org/1/files/public/docs2017/liaison-MEF-L00265_SOAMYANG-0517.pdf)) and ITU-T SG15 ([http://www.ieee802.org/1/files/public/docs2017/liaison-ITUT-SG15-LS019-CFM\\_YANG-0417.pdf](http://www.ieee802.org/1/files/public/docs2017/liaison-ITUT-SG15-LS019-CFM_YANG-0417.pdf)) on YANG for CFM.

**Disposition:** Use an ePoll closing May 28<sup>th</sup> to approve sending this liaison out (this ePoll passed post-meeting and the liaison was sent out)

Steve Haddock, P802.1AX-Rev editor, presented *802.1AX Link Aggregation 802.1AX-Rev2-d0.1 Editor's Report* <http://www.ieee802.org/1/files/public/docs2017/ax-rev-haddock-editors-report-0517-v1.pdf> and <http://www.ieee802.org/1/files/private/ax-rev-drafts/d0/802-1ax-rev-d0-1.pdf>

**Disposition:** Initiate a TG ballot on draft 0.1

Steve Haddock, P802.1AX-Rev editor, presented *802.1AX -- Link Aggregation: Conversation Sensitive Collection and Distribution (CSCD)*

<http://www.ieee802.org/1/files/public/docs2017/ax-rev-haddock-conversation-sensitive-collection-distribution-0517-v1.pdf>

**Disposition:** Related to ongoing project; updated based on discussion as:

<http://www.ieee802.org/1/files/public/docs2017/ax-rev-haddock-conversation-sensitive-collection-distribution-0517-v2.pdf>

János Farkas led the review of the draft P802.1AS-REV PAR extension

<http://ieee802.org/1/files/public/docs2017/as-farkas-P802-1AS-Rev-PAR-modification-0517-v01.pdf>

**Disposition:** Updated draft PAR (provided post-meeting) to be pre-circulated for vote at the July 2017 plenary meeting: <http://ieee802.org/1/files/public/docs2017/as-rev-PAR-modification-0517-v01.pdf>

Geoff Garner, P802.1AS-Rev editor, continued resolving comments received in the TG ballot on <http://www.ieee802.org/1/files/private/as-rev-drafts/d4/802-1AS-rev-d4-5.pdf>.

**Disposition:** Ballot comment resolution recorded in <http://www.ieee802.org/1/files/private/as-rev-drafts/d4/802-1AS-rev-d4-5-dis.pdf>

**Thursday 18 May 2017 8:00 AM-6:00 PM**

Call to order: 18 May 2017, 8:00 AM

Geoff Garner, P802.1AS-Rev editor, finished resolving comments received in the TG ballot on <http://www.ieee802.org/1/files/private/as-rev-drafts/d4/802-1AS-rev-d4-5.pdf>.

**Disposition:** Ballot comment resolution recorded in <http://www.ieee802.org/1/files/private/as-rev-drafts/d4/802-1AS-rev-d4-5-dis.pdf>

Mick Seaman presented *Securing Ethernet in the car*

<http://www.ieee802.org/1/files/public/docs2017/ae-seaman-security-in-the-car-0517-v01.pdf>

**Disposition:** Related to new subject; more discussion needed

Johannes Specht, P802.1Qcr editor, continued resolving comments received in the TG ballot on <http://ieee802.org/1/files/private/cr-drafts/d0/802-1Qcr-d0-1.pdf> based on <http://www.ieee802.org/1/files/private/cr-drafts/d0/802-1Qcr-D0-1-pdis-v1.pdf>

**Disposition:** Continue ballot resolution on TSN TG conference calls

Norman Finn presented *LRP Draft 0.0* <http://www.ieee802.org/1/files/public/docs2017/cs-finn-lrp-draft-0-05-17-v01.pdf>

**Disposition:** Editor's presentation of draft of ongoing project and related open items

Juergen Schmitt presented *802.1CS Link-local Registration Protocol: Thoughts on options* <http://www.ieee802.org/1/files/public/docs2017/cs-schmitt-lrp-proposals-0517-v01.pdf>

**Disposition:** Related to ongoing project; more discussion needed

Feng Chen and Marcel Kiessling presented *Proposal for a Resource Allocation Protocol based on 802.1CS LRP* <http://www.ieee802.org/1/files/public/docs2017/new-chen-RAP-proposal-and-requirements-0517-v02.pdf>

**Disposition:** Related to new subject; more discussion needed

Marcel Kiessling presented *Resource Allocation Protocol (RAP) based on 802.1CS Link-local Registration Protocol* <http://www.ieee802.org/1/files/public/docs2017/new-kiessling-RAP-proposal-and-features-0517-v01.pdf>

**Disposition:** Proposes new project; more discussion needed

Jordon Woods presented *Cut-Through Considerations and Impacts to Industrial Networks* <http://www.ieee802.org/1/files/public/docs2017/new-woods-cutthroughconsiderations-0518-v01.pdf>

**Disposition:** Related to new subject; more discussion needed

## 7 Next meeting

9-14 July 2017 IEEE 802.1 Plenary meeting, Berlin, Germany

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