IEEE 802.1 Working Group
September 21-25, 2020 Interim Session
Electronic
Session Minutes

The Working Group (WG) Chair, Glenn Parsons, presided.
The Recording Secretary, Jessy Rouyer, wrote the minutes in part based on input from subgroup Chairs and their Secretaries.

Note that, throughout this document, minuted/recorded inputs from any attendee can not/shall not be assumed to represent a position of their employer or affiliated organization.

1 Attendance and affiliation

The table in this section reflects the attendance and affiliation of participants who registered their attendance in IMAT.

Last name	First name	Affiliation	Time-Sensitive Networking TG + IEC/IEEE 60802 Joint Project (Monday, 21-Sep-2020, 09:00 - 11:00)	Time-Sensitive Networking TG (Monday, 21-Sep-2020, 11:30 - 13:30)	Security TG (Monday, 21-Sep-2020, 13:30 - 15:30)	Time-Sensitive Networking TG (Monday, 21-Sep-2020, 14:00 - 16:00)	Time-Sensitive Networking TG (Tuesday, 22-Sep-2020, 09:00 - 11:00)	Security TG (Tuesday, 22-Sep-2020, 11:00 - 13:00)	Time-Sensitive Networking TG + IEC/IEEE 60802 Joint Project (Tuesday, 22-Sep-2020, 11:30 - 13:30)	Maintenance TG (Tuesday, 22-Sep-2020, 14:00 - 16:00)	Time-Sensitive Networking TG + IEC/IEEE 60802 Joint Project (Wednesday, 23-Sep-2020, 09:00 - 11:00)	Security TG (Wednesday, 23-Sep-2020, 11:00 - 13:00)	Time-Sensitive Networking TG (Wednesday, 23-Sep-2020, 11:30 - 13:30)	Security TG (Wednesday, 23-Sep-2020, 13:30 - 15:30)	Nendica (Thursday, 24-Sep-2020, 09:00 - 11:00)	Time-Sensitive Networking TG + IEC/IEEE 60802 Joint Project (Thursday, 24-Sep-2020, 09:00 - 11:00)	Time-Sensitive Networking TG (Thursday, 24-Sep-2020, 11:30 - 13:30)	YANGsters (Thursday, 24-Sep-2020, 14:00 - 16:00)	Time-Sensitive Networking TG + IEC/IEEE 60802 Joint Project (Friday, 25-Sep-2020, 09:00 - 11:00)	Time-Sensitive Networking TG (Friday, 25-Sep-2020, 11:30 - 13:30)
ADEMAJ	Astrit	TTTech Computertechnik AG																●	●
Arunarthi	Venkat	Broadcom Corporation					●												●
Assmann	Ralf	Marvell Semiconductor, Inc.		●		●	●			●	●		●			●	●	●	●
AYAZ	SERKAN	Representing myself					●					●					●		●
Bell	Simon	Ericsson AB		●		●				●									
Belliardi	Rudy	Schneider Electric; IEC TC 65		●		●	●		●	●	●		●			●	●	●	●
Bierschenk	Jens	Robert Bosch GmbH	●	●		●	●									●	●		●
Boiger	Christian	b-plus GmbH	●	●			●		●	●	●		●			●	●	●	●
Bottorff	Paul	Hewlett-Packard Development Company, L.P.	●	●		●	●		●		●						●		●
Canchi	Radhakrish	Kyocera International Inc	●	●		●	●		●	●			●			●	●	●	●
CANDELL	RICHARD	National Institute of Standards and Technology (NIST)	●																
Chen	Feng	Siemens AG	●	●		●	●		●	●	●		●			●	●	●	●
Chipolone	Michael	General Dynamics Mission Systems			●			●				●		●					
Choudhury	Abhijit	Broadcom Corporation					●												●
Congdon	Paul	Congdon Consulting, LLC; Huawei Technologies Co. Ltd; Tallac Networks; Huawei	●	●		●	●			●			●		●		●		●
Cummings	Rodney	National Instruments Corporation		●					●				●			●	●		●
DeLaOliva	Antonio	Universidad Carlos III Madrid		●		●									●				
Dorr	Josef	Siemens AG	●	●			●		●		●		●			●	●		
Dubrawski	Richard	ViaSat, Inc.			●			●				●		●					

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Elbakoury	Hesham	Huawei Technologies Co. Ltd;IEEE member / Self Employed	●	●		●	●		●	●	●		●			●	●		●	●
Ellegaard	Lars	Microchip Technology, Inc.		●			●		●		●		●						●	
Ellison	Mark	Independent																●		
Enzinger	Thomas	B&R Industrial Automation GmbH	●				●		●		●					●	●		●	
Farkas	Janos	Ericsson	●	●		●	●		●	●	●		●			●	●	●	●	●
Fedyk	Donald	LabN Consulting, L.L.C.	●	●	●		●	●	●		●	●		●	●		●		●	●
Finn	Norman	Huawei Technologies Co. Ltd		●		●	●		●	●			●			●	●			●
Garner	Geoffrey	Huawei Technologies Co. Ltd	●	●		●	●		●	●	●		●			●	●		●	●
GHARBA	Ahmed	Huawei Technologies Duesseldorf GmbH					●													
Goodwin	Michele	canoga perkins																		●
Gordon	Colin	Schweitzer Engineering Laboratories, Inc.												●						
Gore	Rahul	Malardalen University, Sweden													●					
Gravel	Mark	Hewlett Packard Enterprise	●	●		●	●		●		●		●			●	●		●	●
Gunther	Craig	Craig Gunther Consulting, LLC	●	●		●			●	●	●		●			●	●		●	●
guo	liang	China Academy of Information and Communications Technology (China Academy of TeleCommunication Research, MIIT) CAICT (CATR)													●					
Gutierrez	Marina	TTTech Computertechnik AG	●	●		●	●				●		●				●	●	●	●
Haasz	Jodi	IEEE Standards Association (IEEE-SA)		●			●				●						●		●	
Haddock	Stephen	Stephen Haddock Consulting, LLC; Tallac Networks, Inc; Aruba Networks, Inc	●	●		●	●		●	●	●		●			●	●	●	●	
Han	Ruibo	China Mobile Communications Corporation (CMCC)					●				●					●	●		●	●
Hantel	Mark	Rockwell Automation	●	●			●		●		●		●			●	●		●	●
Hong	Seung-Ho	Hanyang Univerisity	●				●		●		●		●							●
Hopf	Daniel	Continental Automotive GmbH	●	●		●	●				●		●	●		●	●	●	●	●
Huh	Woojung	Microchip Technology, Inc.	●				●		●		●		●				●		●	●
Ito	Yoshihiro	Nagoya Institute of Technology	●	●		●	●		●	●	●		●			●	●		●	●
Jabbar	Abdul	General Electric Company (GE)															●			
Janker	Georg	BMW Group, RUETZ System Solutions GmbH	●	●			●		●		●		●			●	●		●	
Jia	Xueqin	China Unicom											●							
Kaiser	Daniel	University of Luxembourg					●													
Karl	Michael	Marvell Semiconductor, Inc.	●	●			●		●		●		●			●	●	●	●	●
Katsalis	Kostas	Huawei Technologies Duesseldorf GmbH	●	●			●		●		●		●			●	●		●	●
Kehrer	Stephan	Hirschmann Automation and Control, Inc.	●	●		●	●		●	●	●		●	●		●	●	●	●	●
Kelsey	Randy	Engineering Solutions, Inc			●			●		●		●								
Klamser	Oliver	Pilz GmbH & Co. KG	●	●		●	●		●		●		●			●	●		●	●
Koga	Hidetsugu	YASKAWA ELECTRIC CORPORATION	●							●						●			●	
KONDO	Kenji	Yaskawa Electric Corp	●				●			●			●			●			●	●
Kornbau	David	General Dynamics Mission Systems						●				●		●						
Kumar	Ashok	AllGo Embedded Systems Pvt. Ltd.					●													●
Lai	Gavin	Moxa																		●
Lawrenson	Nicholas	Uman technologies					●													
Lin	Chun-Yu	Moxa Inc.							●		●		●			●	●			
Lv	Jingfei	Huawei Technologies Co., Ltd	●				●													
Mangin	Christophe	Mitsubishi Electric Corporation	●	●		●	●			●	●		●			●	●	●	●	●
Mansfield	Scott	Telefon AB LM Ericsson		●		●							●				●	●		●
Marks	Roger	EthAirNet Associates; Huawei		●		●									●					
Maruhashi	Kenichi	NEC Corporation	●	●			●		●		●		●		●		●		●	●
Mater	Olaf	Marvell	●	●	●		●		●		●		●			●	●		●	●

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McCall	David	Intel	●	●		●	●		●		●		●		●		●	●		●	
McMillan	Larry	Western Digital Corporation					●	●		●		●		●	●	●		●	●	●	●
Nakano	Hiroki	CAHI Corporation; Kyoto University	●	●			●		●	●	●		●		●		●			●	●
Nosewort	Bob	University of New Hampshire InterOperability Laboratory (UNH-IOL); DCS Corp.	●	●			●		●		●		●				●	●		●	●
ohue	hiroshi	panasonic																			●
Osagawa	Daisuke	Mitsubishi Electric Corporation	●							●							●			●	
Ostertag	Martin	Zurich University of Applied Sciences	●					●		●							●			●	
Pannell	Donald	NXP Semiconductors	●	●		●	●		●	●			●					●			●
Parsons	Glenn	Ericsson AB	●	●				●		●		●		●	●			●	●		●
Petre	Razvan	Spirent Communications	●	●		●	●		●		●		●				●	●	●	●	●
Potts	Michael	Molex Incorporated	●	●		●	●		●		●		●				●	●		●	●
Proell	Dieter	Siemens AG	●	●		●	●		●		●		●				●	●			
QIU	WEI	Huawei Technologies Co., Ltd					●	●		●	●					●		●	●	●	
quan	hao	Meituan														●					
Randall	Karen	Tallac/Self			●		●	●		●	●	●		●	●			●	●		
Rodrigues	Silvana	Huawei Technologies Co. Ltd	●	●		●	●		●	●	●		●				●	●	●	●	●
Rouyer	Jessy	Nokia	●	●		●			●	●	●		●	●			●	●	●	●	●
Sato	Atsushi	Yokogawa Electric Corporation	●	●		●	●		●		●		●				●	●		●	●
Schewe	Frank	Phoenix Contact					●		●	●	●		●	●			●	●	●	●	●
Seaman	Michael	Individual			●			●		●		●		●							
Seewald	Maik	Cisco Systems, Inc.	●	●		●	●		●		●		●				●	●		●	●
Selent	Rafael	ABB AB	●							●							●			●	
Sivakolund	Ramesh	Cisco Systems, Inc.	●	●			●		●	●	●		●	●				●			
Soeda	Tatsuo	Yaskawa	●				●		●		●		●				●			●	
Specht	Johannes	Self; University of Duisburg-Essen; University of Duisburg-Essen and General Motors Company	●	●		●	●		●	●	●		●				●	●	●	●	●
Staengler	Ferenc	Kone					●	●			●	●					●	●		●	
Stanica	Marius	ABB AB	●	●	●		●		●	●	●						●	●		●	
Steindl	Guenter	Siemens AG	●	●			●		●	●	●		●				●	●		●	●
Sun	Liyang	HUAWEI														●					
Takita	Daisuke	Mitsubishi Electric Corporation								●							●			●	
Tarui	Isao	Mitsubishi Electric Corporation	●							●							●				
Tatolov	Ievgen	Robert Bosch Car Multimedia GmbH					●											●			
traore	karim	Microchip/Microsemi Corporation		●		●		●	●				●	●				●	●		●
Turner	Max	Ethernovia	●	●		●				●			●				●	●	●	●	●
Varga	Balazs	Ericsson AB	●	●		●	●		●	●	●		●				●	●		●	●
Venkatesa	Ganesh	Intel Corporation	●	●			●		●				●								
Wamsser	Reiner	IEC SC65C MT9-Member					●		●	●							●	●	●		
wang	haifei	Huawei Technologies Co. Ltd					●	●			●										
Wang	Tongtong	Huawei Technologies Co. Ltd	●	●			●		●		●		●					●		●	●
Wang	Xinyuan	Huawei Technologies Co. Ltd	●	●		●	●	●		●	●		●	●			●	●		●	
Weber	Karl	Beckhoff Automation	●	●		●	●				●		●				●		●	●	●
Winkel	Ludwig	PNO e.V.	●	●			●		●		●		●				●	●		●	
Woods	Jordon	Analog Devices Inc.	●	●		●	●		●		●		●				●	●		●	●
Yang	Chase	Moxa																			●
Yin	Yue	Huawei Technologies Co., Ltd														●					

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YU	Yi	Rockwell Automation	•							•		•				•			•	•
Zaehring	Jamie	The Boeing Company															•			•
Zein	Nader	NEC Europe (NLE)	•	•		•	•		•	•	•	•	•	•	•		•	•	•	•
Zhao	William	Siemens AG	•	•		•			•	•	•	•	•	•	•		•	•	•	•
Zhou	Chuanhai	Marvell Semiconductor, Inc.					•													
Zinner	Helge	Continental Automotive Systems AG	•	•		•	•		•		•		•	•	•		•	•	•	
Zuponcic	Steven	Rockwell Automation	•																	

2 802.1 Officers and Management

Glenn Parsons	Working Group Chair
Jessy Rouyer	Working Group Vice-Chair and Recording Secretary
Paul Congdon	Maintenance Task Group Chair
Mick Seaman	Security Task Group Chair
Karen Randall	Security Task Group Vice-Chair Working Group Liaison Secretary
János Farkas	Time-Sensitive Networking Task Group Chair
Craig Gunther	Time-Sensitive Networking Task Group Vice-Chair
Marina Gutiérrez	Time-Sensitive Networking Task Group Secretary
Ludwig Winkel	IEC/IEEE 60802 Joint Project Chair
Mark Hantel	IEC/IEEE 60802 Joint Project System Specification Ad Hoc Chair IEC/IEEE 60802 Joint Project Website Maintenance Working Group Email Maintenance
Josef Dorr	IEC/IEEE 60802 Joint Project Secretary
Roger Marks	IEEE 802 Nendica Chair
Scott Mansfield	IEEE 802 YANGsters Chair
Stephan Kehrer	IEEE 802 YANGsters Vice-Chair and Secretary Working Group Executive Secretary
Paul Unbehagen	Working Group Website Maintenance
Hal Keen	Working Group Email Maintenance

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3 Maintenance Task Group

Between this session and the preceding session, the IEEE 802.1 Maintenance TG held the following electronic meetings:

- Minutes of the Maintenance TG meeting held 2020-09-15 11:00 AM - 12:54 PM EDT (revised) https://listserv.ieee.org/cgi-bin/wa?A2=STDS-802-1-MINUTES;727f75c9.20

Call to order September 22, 2020 at 2:03 PM by Paul Congdon, IEEE 802.1 Maintenance TG Chair, who presided and wrote the minutes.

Agenda items and dispositions:

1. Meeting introduction. The Maintenance TG chair reminded participants that the following information was made available before the meeting:
   - The IEEE SA Copyright Policy slides,
   - The IEEE SA PatCom Patent Slides for Standards Development Meetings,
   - The IEEE SA slides regarding IEEE Codes of Ethics and Conduct, participation in the "individual process", and dominance
   - The decorum information, and
   - The reminder for participants to register their attendance in IMAT

   contained in "MEETING INTRODUCTION" http://www.ieee802.org/1/files/public/templates/admin-WG+TG-intro-0720-v01.pdf thereby providing the information on slides 2 and 5 of this presentation, and made the Call for Potentially Essential Patents and there were no responses to this Call prior to the end of the end of the session.
2. Approval of agenda. The Maintenance TG chair presented the agenda in https://1.ieee802.org/september-2020-interim-session-electronic-maintenance-tg-agenda/. **Disposition:** the agenda was reviewed, discussed and agreed (informally, none dissenting) as presented. During the session, however, it was requested to include a discussion of Maintenance item 0232 and a discussion of P802.1Qcr inclusion into the P802.1Q-Rev project.
3. SC6 Status. Karen Randall led the discussion of JTC1 SC6 STATUS - September 2020 from "Maintenance Task Group Conference Call" in https://www.ieee802.org/1/files/public/docs2020/maint-congdon-concall-bis-0920-v01.pdf. **Disposition:** none.
4. SC6 Liaisons. Karen Randall presented the proposed response to FDIS ballot comments on:
   - 802.1AS-2020 FDIS comment responses https://www.ieee802.org/1/files/public/docs2020/maint-randall-SC6CommentResponse1AS-0920-v03.pdf
   - 802.1Qcc-2018 FDIS comment responses https://www.ieee802.org/1/files/public/docs2020/maint-randall-SC6CommentResponse1Qcc-0920-v02.pdf

   Disposition: It was asked if one of the offending figures in 802.1AS should be removed via maintenance and it was agreed (informally, none dissenting) that it should not be removed. Edits to the proposed response to FDIS ballot comments were made and included in the following contributions:
   - 802.1AS-2020 FDIS comment responses - https://www.ieee802.org/1/files/public/docs2020/maint-randall-SC6CommentResponse1AS-0920-v04.pdf
   - 802.1Qcc-2018 FDIS comment responses - https://www.ieee802.org/1/files/public/docs2020/maint-randall-SC6CommentResponse1Qcc-0920-v03.pdf

5. Document vehicle status. The TG Chair presented the status of current documents in progress used as vehicles for resolving maintenance items shown in http://www.ieee802.org/1/files/public/docs2020/maint-congdon-concall-bis-0920-v01.pdf.
6. New Maintenance Items. The TG Chair led the discussion of new maintenance items from https://www.802-1.org/
    - 0275: BMCA conformance requirements of 5.4.1
    - 0276: Incorrect reference in PICs item MINTA-16 of A.7
    - 0277: Missing support of the Common Mean Link Delay Service (CMLDS)
    - 0278: Inconsistent Clause 5 and PICS with respect to state machines
    - 0279: externalPortConfiguration should be externalPortConfigurationEnabled
    - 0280: time-aware should be PTP
    - 0281: “Delay_Req” should be “Pdelay_Req”
    - 0282: Replace “Company Identifier” with “Company ID”
    - 0283: Choose appropriate “domain number” or “domainNumber”

    Disposition: Details for discussion on all items are logged in the IEEE 802.1 maintenance database at https://www.802-1.org/home where items progressed at the meeting can be reviewed by selecting ‘Meetings’.
7. Existing Maintenance Items. The TG Chair led the discussion of existing maintenance items from https://www.802-1.org/
    - 0232: Maintenance requires: PICS inconsistent in 802.1Q-2018
    - 0242: IEEE Std 802.1Qcp-2018: Collected issues on data consistency and others
    - 0248: Managed objects for ECP in 802.1Q-2018
    - 0270: Missing transmission selection algorithm configuration management
    - 0271: Default configuration for bridges that support credit-based shaper
    - 0272: Misuse of the word, “default” in 802.1Q-2018 clause 34.5

    Disposition: Details for discussion on all items are logged in the IEEE 802.1 maintenance database at https://www.802-1.org/home where items progressed at the meeting can be reviewed by selecting ‘Meetings’.
8. Any Other Business. A discussion about the inclusion of P802.1Qcr into P802.1Q-Rev was led by John Messenger, P802.1Q-Rev editor.
    Disposition: P802.1Qcr is expected to receive RevCom approval on Friday September 25, 2020 which requires that it be included into P802.1Q-Rev. The editor of P802.1Q-Rev would prefer to see P802.1Qcr progress through editor staff modifications for publication before incorporating the text into P802.1Q-Rev. The timing of these editorial changes may imply that the incorporation of P802.1Qcr will need to occur between WG and SA balloting or SA balloting itself. The 802.1 WG chair will follow up with editorial staff to understand if editorial review can be prioritized or accelerated.
9. Future meetings. Agreed (informally, none dissenting) to hold future electronic meetings to be announced on the 802.1 email exploder with specific dates/times subject to notice of at least 10 days.

4:21 PM adjournment

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4 Security Task Group

Between this session and the preceding session, the Security TG held the following electronic meetings:

- None

The table in section 1 reflects the attendance and affiliation of participants who registered their attendance in IMAT. The following list reflects the attendance and affiliation of participants as recorded by the TG Vice-Chair during the meetings:

Chiplone, Mike	General Dynamics	Mon AM, Tue AM, Wed AM, PM
Dubrawski, Rich	Viasat Inc	Mon PM, Tue AM, Wed AM, PM
Fedyk, Don	LabN Consulting	Mon PM, Tue AM, Wed AM, PM
Gordon, Colin	?	Wed AM
Heinzinger, Martin	Ruetz	Wed PM
Kehrer, Stephan	Hirshmann	Wed PM
Kelsey, Randy	Engineering Solutions, Inc.	Mon PM, Tue AM, Wed AM, PM
Kornbau, David	General Dynamics	Mon PM, Tue AM, Wed AM, PM
Mater, Olaf	Marvell	Mon PM
McMillan, Larry	Western Digital Corporation	Tue AM, Wed PM
Orlando, Gerardo	General Dynamics	Mon PM, Tue AM, Wed AM, PM
Parsons, Glenn	Ericsson	Tue AM, Wed AM, PM
Randall, Karen	Randall Consulting	Mon PM, Tue AM, Wed AM, PM
Rouyer, Jessy	Nokia	Wed PM
Schewe, Frank	Phoenix	Wed PM
Seaman, Mick	Independent	Mon PM, Tue AM, Wed AM, PM
Sivakolundu, Ramesh	?	Wed PM
Staengler, Ferenc	Kone	Tue AM, Wed AM
Wang, Xinyuan	Huawei	Tue AM, Wed PM
Zhao, William	Siemens	Wed PM
Ziemba, G. Paul	LabN Consulting	Tue AM

Call to order Sep 21, 2020 at 1:36 PM EDT by Mick Seaman, IEEE 802.1 Security TG Chair, who presided and wrote the minutes. In his temporary absence, for part of this meeting, the meeting was chaired by Karen Randall, IEEE 802.1 Security TG Vice-Chair.

Agenda items and dispositions:

1. Meeting introduction. The TG Chair reminded participants that the following information was made available before the meeting and showed:
   - The IEEE SA Copyright Policy slides,
   - The IEEE SA PatCom Patent Slides for Standards Development Meetings,
   - The IEEE SA slides regarding IEEE Codes of Ethics and Conduct, participation in the “individual process”, and dominance,
   - The decorum information, and
   - The reminder for participants to register their attendance in IMAT

   contained in “MEETING INTRODUCTION” http://www.ieee802.org/1/files/public/templates/admin-WG+TG-intro-0720-v01.pdf thereby providing the information on slides 2 and 5 of this presentation, and made the Call for Potentially Essential Patents at the beginning of this meeting and at the beginning of the TG meetings on Sep 22, 2020 and Sep 23, 2020 in this session. There were no responses to these Calls prior to the end of the session.

2. Approval of agenda. The TG Chair presented the agenda in https://1.ieee802.org/2020-09-interim-security-agenda/
   Disposition: the agenda was reviewed, discussed and agreed (informally, none dissenting) with the addition of a discussion of proposed 802.11 PARs and the proposed November IETF Madinas BOF under Any Other Business.
3. P802.1AEdk MAC Privacy protection - Draft development
   3.1. Don Fedyk, P802.1AEdk Editor, presented an overview of the updated draft P802.1AEdk/D0.3 http://www.ieee802.org/1/files/private/dk-drafts/d0/802-1AEdk-d0-3.pdf
   3.2. Don Fedyk presented "Ethernet Encryption Device (EDE) configuration" https://www.ieee802.org/1/files/public/docs2020/dk-fedyk-ede-configuration-0920-v01.pdf
      - The provision of a YANG model for IEEE 802.1AE, independent of privacy protection, is part of P802.1AEdk and is addressed by the presented paper.
      - The Provider Bridge Model is used to model an EDE as described in 802.1AE-2018.
      - The use of the descriptive terms "red-side" and "black-side" to refer to EDE ports was useful. Use of these as preferred (in the EDE context) aliases could help end user comprehension.
      - There is little need to refer to the CNP (Customer Network Port) in the model, as the one-to-one connectivity between the internal (to the EDE) connectivity between each PEP (Provider Edge Port on the EDE's Edge Component) and a CNP means that few parameters associated with the CNP can equally be indexed by the PEP. Component/port auto-creation also simplifies configuration.
      - The constraints that are part of the EDE's use of two-bridge components allow optimization of configuration table structures.

   Alternatives have been considered.
      - The different strengths and weaknesses of YANG and SNMP for tables naturally lead to different structural organizations of configuration information – potentially another nail in the coffin of attempts at a "language-independent" description of managed objects.
      - Representation of default values for many table entries is cumbersome in basic YANG, and probably best done as a separate configuration step.
      - Yanglint was used to improve the coverage of model checking.

   Disposition: Suggested terminology and table organization to be included in a future draft.

3:26 PM EDT recess

Call to order Sep 22, 2020 at 11:04 AM EDT by Mick Seaman, IEEE 802.1 Security TG Chair, who presided and wrote the minutes.

4. P802.1AEdk MAC Privacy protection - Draft development
   4.1. Draft updated to D0.4: https://www.ieee802.org/1/files/private/dk-drafts/d0/802-1AEdk-d0-4.pdf
   4.2. Paul Ziemba presented "TFS Framing Decapsulation Optimization" https://www.ieee802.org/1/files/public/docs2020/dk-ziemba-etfs-trailer-0920-v01.pdf
      - The performance benefits of placing MPPDU component (encapsulated frames, fragments, padding) information in a trailer, rather than at the beginning of each component were considered.
      - In a software implementation this could result in fewer cache line misses.
      - The possible performance benefits are implementation and traffic dependent.

- Trailing pad would go before trailer list of components, so those would always be in the same place relative to the end of the MPPDU.
- Number of components variable, so a limit might have to be put on their number. Formatting questions arise – write backwards from the end, or include count at end, some complexity here.
- There is a possible benefit on the transmitter side when Express frames are interspersed with Default class frames, as fragment sizes for the latter do not have to be chosen in advance of their possible preemption. This only applies if the scheduling of the preempting traffic is not known in advance.
- There is a drawback on the receive side, as work is delayed and concentrated to the end of the MPPDU. However, note that MPDDU processing should have no externally visible results until the MACsec ICV has been validated, so tightly coupled MACsec/MPP implementations might concentrate work in any case.
- Based on the stated assumptions on user packet size (typical Internet traffic) the performance benefit and case for change does not appear compelling.

Disposition: No further action at this time.

4.3. Don Fedyk, P802.1AEdk Editor, led a detailed walk through of https://www.ieee802.org/1/files/private/dk-drafts/d0/802-1AEdk-d0-4.pdf.

- Figures 20-1, 20-2, 20-3, 20-4 are new, and may need more work.
- Existing (802.1AE-2018) Figure 10-5 UML used as the basis of the YANG. Desire to make YANG as good as it can be, rather than a translation of the existing MIB.

Discussion of Clause 17 MAC Privacy protection – need, how, QoS impacts, deployment scenarios:

- Noted privacy exposure if MPPDU size depends on data type.
- Need to emphasize the need to remain within the SLA when a channel is configured to send fixed sized frames at fixed intervals – loss of user data frames will not diminish the bandwidth used, so user TCP could be completely backed off. Can be consequences for the architecture of detailed PrY operation in Clause 20 (for example in Figure 20-2) where the bandwidth used by unprotected and Private frames (conveying a single user data frame) may need to be taken into account along with that used by Privacy Channels.
- 17.5 is currently showing as needing text. This may now be covered by Clause 21. Need to determine what should remain, and where, and if the editor's notes in 17.4 and 17.5 identify more subjects that should be covered.

Discussion of Clause 18 MAC Privacy-protecting protocol - design, applicability, and support requirements:

- There is some overlap with Clause 17, although the focus here is more of formal protocol requirements and what is needed to support the protocol. Some overlap is probably better than letting things fall through the cracks.
- 18.1.6 is at present deliberate 'comment bait'.
- Close alignment with what is specified for MACsec and existing EDEs is deliberate here.

Discussion of Clause 19 Encoding of MAC Privacy-protection PDUs:

- The basis for current work on a publicly available reference implementation (ongoing at LabN).
- Figure 19-3 enhanced to make relationship between MAC Privacy protection and MACsec clear.
- Need to be sure that the NOTEs in 19.8 are backed up by normative text elsewhere, or these NOTEs have to change to be main text (NOTEs are not normative).

- Check with 802.3br, 802.1Q, 802.1AE-2018 for consistency of Express/Default/preemption terminology.
- Check <names> for consistency with UML

Discussion of Clause 20 MAC Privacy-protecting Entity (PrY) operation:

- Transmission and reception diagrams correct but probably not the best representation, particularly for priority mapping.

Disposition: Discussion to be continued. Any input in the next two weeks welcome, prior to Task Group ballot. Input by email to the Editor, Don Fedyk. Input can be a marked up draft pdf.

12.52 PM recess

Call to order Sep 23, 2020 at 11:00 AM EDT by Mick Seaman, IEEE 802.1 Security TG Chair, who presided and wrote the minutes.

5. Don Fedyk, P802.1AEdk Editor, led the continued walk through of https://www.ieee802.org/1/files/private/dk-drafts/d0/802-1AEdk-d0-4.pdf.
   Discussion of Clause 21 MAC Privacy protection in Systems:
   - Aligned with the organization and style of 802.1AE-2018 Clause 11 (MAC Security in systems) but focused on the PrY/privacy protection rather than the SecY/MACsec alone. Answers the same questions about incorporation in interface stacks and use in significant scenarios.
   - 802.1X-2020 Clause 7 (Port-based network access control applications) has a similar focus.
   - 21.4 addresses Link Aggregation order preservation explicitly, with the PrY being per link as with the supporting SecYs.

   Discussion of Clause 22 YANG Data Models
   - New from prior draft.
   - Needs more work in the Security considerations section (section is an IETF requirement, adopted by 802.1)
   - Uses IETF interfaces, IETF Systems YANG Model
   - Table 22-1 translates from the Figure 10-5 UML to the YANG model/names. Question as to whether this is required/maintainable/adequately reviewed, as it mostly reflects automatic translation of style issues e.g. CamelCase vs lower-case-hyphenated.
   - Some guidance in the use of defaults is required/would be useful, as coding defaults in the basic YANG model is cumbersome (especially for table entries) and raises the usual questions about the meaning of default – OEM config vs system house config vs value adopted on equipment reset vs guided by scenario dependence in the absence of explicit override.
   - 22.5 (Interface Stack Models) follows the 802.1Qcp treatment of the same issues. Similar questions arise to the appropriate ifType of an augmented interface.
   - Question as to whether it is necessary to implement the entire bridge model for a simple EDE. The YANG model in this clause could be equally used to augment interfaces of a simpler/different model (if a simpler/different model is appropriate).
   - Goal is to complete the YANG models, and then derive the MIB (for the privacy-protection component) from that work.

   Disposition: Editor to edit/update P802.1AEdk for TG ballot, taking into account (as he feels appropriate/feasible) this meeting and any further comments received in the next two weeks. Since the project is in the TG ballot stage editorial license is appropriate. TG ballot to conclude prior to the November electronic plenary session so comments can be addressed during that session.

6. Mick Seaman presented “EDE deployment, configuration, and monitoring”
https://www.ieee802.org/1/files/public/docs2020/dk-seaman-ede-deployment-0920-v01.pdf
    - A walk-through of the deployment of EDEs to provide privacy protection in an already operational network. Step-by-step approach might not be as necessary when deploying a new network (decreased sensitivity to initial failure) but may still be helpful if issues need to be resolved amongst the several organizations that might each control part of the puzzle (security sensitive EDE deployers, organization responsible for authentication systems supporting security, basic network management controlling network map/VLAN allocation, service provider configuring matching VLAN map for site to site delivery).
    - A check that we have the necessary controls.
    - Notes discrepancies between 802.1AE and 802.1X description/definitions of some variables (booleans where enumerated types are required). Maintenance items needed on 802.1X and 802.1X YANG.
    - Potential naming issues.
    - Need to verify/point out where/when 802.1X Figure 12-2 CP state machine allows changes to frame protection/validation (on entry to SECURED state).

    Disposition: Continued discussion with possible maintenance items.

12.42 PM recess

7. Any Other Business
    7.1. IETF November BOF - MADINAS

    The TG Chair led a general discussion of the proposals in “Problem Statements for MAC Address Randomization” https://github.com/jlivingood/IETF109BoF/blob/master/draft-lee-randomized-macaddr-ps-00.txt, https://github.com/jlivingood/IETF109BoF/blob/master/BoF-Proposal-20200918.md, https://tools.ietf.org/html/draft-lee-randomized-macaddr-ps-01 to add new protocol to deal with the presumed side effects of in-session MAC source address changes/randomization. Currently MAC address randomization attempts to defeat device tracking/identification by observing or participating in pre-association 802.11 protocol.
        - The 802.11 RCM (Randomized and Changing MAC Address) Study Group is proposing two new related PARs for consideration in the IEEE 802 November virtual plenary.

    Disposition: TG Chair to schedule a Security TG electronic meeting, inviting Jerome Henry (P802E Editor, and involved in the 802.11 proposals) to begin the process of formulating comments on the 802.11 PARs and preparing a liaison to the IETF re MADINAS. To be followed by a TSN TG electronic meeting item to bring this to the wider attention of the 802.1 WG, and Maintenance TG electronic meetings to finalize comments/liaison.

    7.2. Future meetings

    At least one electronic meeting to be scheduled prior to the November 2020 electronic plenary session for discussion of 802.11 PARs/IETF MADINAS [See item 7.1].

2:28 PM adjournment

Draft

5 Time-Sensitive Networking Task Group

Between this session and the preceding session, the IEEE 802.1 Time-Sensitive Networking (TSN) Task Group (TG) held the following electronic meetings:

- Minutes of the IEEE P802.1DG, meeting held Jul 21, 2020 9:00 AM - 10:04 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&P=18729
- Minutes of the IEEE 802.1 Time-Sensitive Networking Task Group meeting held Jul 27, 2020 11:00 AM - 1:00 PM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&P=19447.
- Minutes of the IEEE P802.1DG, meeting held Jul 28, 2020 9:00 AM - 10:19 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&P=28744.
- Minutes of the IEEE P802.1DG, meeting held Aug 4, 2020 9:00 AM - 10:03 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&P=20199.
- Minutes of the IEEE 802.1 TSN TG meeting held Aug 10, 2020 11:00 AM - 12:35 PM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&P=30344.
- Minutes of the IEEE P802.1DG, meeting held Aug 11, 2020 9:00 AM - 10:05 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&P=32011.
- Minutes of the IEEE 802.1 TSN TG meeting held Aug 17, 2020 11:00 AM - 1:04 PM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&P=37381.
- Minutes of the IEEE P802.1DG, meeting held Aug 18, 2020 9:00 AM - 10:00 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&P=38112.
- Minutes of the IEEE 802.1 TSN TG meeting held Aug 24, 2020 11:00 AM - 1:00 PM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&P=56482.
- Minutes of the IEEE P802.1DG, meeting held 2020-08-25 9:00 AM - 10:04 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&P=48548.
- Minutes of the IEEE 802.1 TSN TG meeting held Aug 31, 2020 11:00 AM - 1:00 PM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&P=74588.
- Minutes of the IEEE P802.1DG, meeting held 2020-09-01 9:00 AM - 10:03 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&P=62275.

The table in section 1 reflects the attendance and affiliation of participants who registered their attendance in IMAT.

Call to order Sep 21, 2020 at 11:30 AM by János Farkas, IEEE 802.1 TSN TG Chair, who presided. Marina Gutiérrez, IEEE 802.1 TSN TG Secretary, wrote the minutes.

Agenda items and dispositions:

1. Meeting introduction. The TSN TG Chair showed:
    - The IEEE SA Copyright Policy slides,
    - The IEEE SA PatCom Patent Slides for Standards Development Meetings,
    - The IEEE SA slides regarding IEEE Codes of Ethics and Conduct, participation in the “individual process”, and dominance,
    - The decorum information, and
    - The reminder for participants to register their attendance in IMAT

    contained in “MEETING INTRODUCTION” http://www.ieee802.org/1/files/public/templates/admin-WG+TG-intro-0720-v01.pdf thereby providing the information on slides 2 and 5 of this presentation, and made the Call for

Potentially Essential Patents: there were no responses to this Call prior to the end of the end of the session.

2. Approval of agenda. TSN TG Chair presented the agenda in https://1.ieee802.org/2020-09-tsn-agenda/.
   Disposition: the agenda was reviewed, discussed and agreed (informally, none dissenting) as presented.
3. Norman Finn, P802.1CS editor, provided a P802.1CS status update.
   Disposition: SA ballot closed with 100% success. ePoll open to send D3.1 to RevCom.
4. Paul Congdon, P802.1Qcz editor, presented "P802.1Qcz status update" https://www.ieee802.org/1/files/public/docs2020/cz-congdon-d1-3-status-0920-v01.pdf.
   Disposition: WG recirculation ballot closed with 100% approval. ePoll open to send P802.1Qcz D2.0 to SA ballot.
5. Stephan Kehrer, P802.1CBcv editor, presented "IEEE P802.1CBcv Editor's Report for Draft D0.4 Ballot Comment Resolution (v1)" http://www.ieee802.org/1/files/public/docs2020/cv-kehrer-editors-report-d0-4-0920-v01.pdf and "Usage of *AutonomousType* in the MIB" https://www.ieee802.org/1/files/public/docs2020/cv-kehrer-MIB-usage-autonomous-type-0920-v01.pdf, and led the resolution of comments received on https://www.ieee802.org/1/files/private/cv-drafts/d0/802-1CBcv-d0-4.pdf.
   - Comments finalized: Reject: #3, 16; Accept in Principle: #4, 19, 22, 25, 26, 28, 29, 30; Accept: #21
   - Comments discussed but still open (deferred to YANGsters): #1, 5, 32

   Disposition: Partial **Disposition:** https://www.ieee802.org/1/files/private/cv-drafts/d0/802-1CBcv-d0-4-pdis-v02.pdf. Anticipated next: open comments to be discussed in YANGsters.
6. Robert Marks, P802.1CQ editor, led the resolution of comments received on https://www.ieee802.org/1/files/private/cq-drafts/d0/802-1CQ-d0-5.pdf.
   - Discussion of CID43 and in what cases address assignments are valid across multiple VLANs.
   - 1:31 PM - 2:00 PM recess
   - Discussion of CID37 and PALMA server-based assignment of unicast addresses in a secure environment.

   Disposition: comments were discussed. Partial disposition recorded in https://www.ieee802.org/1/files/private/cq-drafts/d0/802-1CQ-d0-5-pdis-v02.pdf.
7. Norman Finn, P802.1DC editor, presented "Dependence of IEEE P802.1DC on IEEE P802.1Qcw" https://www.ieee802.org/1/files/public/docs2020/dc-finn-dependence-on-Qcw-0920.pdf.
   Disposition: presentation was discussed. More discussion is needed.
8. Stephen Haddock, P802.1ABdh editor, presented https://www.ieee802.org/1/files/private/dh-drafts/d0/802-1ABdh-d0-0.pdf.
   Disposition: presentation was discussed. Anticipated next: initial TG ballot on D0.1.

4:02 PM recess.

Call to order Sep 22, 2020 at 9:00 AM by János Farkas, IEEE 802.1 TSN TG Chair, who presided and Marina Gutiérrez, IEEE 802.1 TSN TG Secretary wrote the minutes.

9. Meeting introduction. The TSN TG Chair announced that the meeting is subject to the Copyright Policy, Patent policy and Participants Policy as read and displayed at the opening plenary meeting.

10. Craig Gunther, P802.1DG editor, presented "P802.1DG/D1.2 Editor's Report for Ballot Comment Resolution (v16)" https://www.ieee802.org/1/files/public/docs2020/dg-cgunther-editors-report-d1-2-0920-v16.pdf and continued the resolution of comments received on http://www.ieee802.org/1/files/private/dg-drafts/d1/802-1DG-d1-2.pdf.

Disposition: A new rogue comment 161 was added. Ballot comments 54,62,73,107,108,109,146,149 were discussed and resolved as documented in https://www.ieee802.org/1/files/private/dg-drafts/d1/802-1DG-d1-2-pdis-v17.pdf.

11:00 PM recess.

Call to order Sep 23, 2020 at 11:30 AM by János Farkas, IEEE 802.1 TSN TG Chair, who presided and Marina Gutiérrez, IEEE 802.1 TSN TG Secretary wrote the minutes.

11. Meeting introduction. The TSN TG Chair announced that the meeting is subject to the Copyright Policy, Patent policy and Participants Policy as read and displayed at the opening plenary meeting.

12. Stephan Kehrer, P802.1Qdj editor, presented "IEEE P802.1Qdj Update on draft d0.0 and way forward" https://www.ieee802.org/1/files/public/docs2020/dj-kehrer-P8021Qdj-d0-0-update-0920-v01.pdf.
    Disposition: presentation discussed. Anticipated next: editor's draft.
13. János Farkas presented "Configuration Enhancements for 5G as TSN Bridge" https://www.ieee802.org/1/files/public/docs2020/dj-farkas-configuration-enhancements-for-5G-0920-v01.pdf.
    Disposition: presentation was discussed. Related to an ongoing project. More discussion is needed.
14. Tongtong Wang and Norman Finn presented "P802.1DF text contribution" https://www.ieee802.org/1/files/public/docs2020/df-finn-wangtt-prop-text-0920-v03.pdf.
    Disposition: presentation was discussed. Related to an ongoing project.

1:40 PM recess.

Call to order Sep 24, 2020 at 11:30 AM by János Farkas, IEEE 802.1 TSN TG Chair, who presided and Marina Gutiérrez, IEEE 802.1 TSN TG Secretary wrote the minutes.

15. Meeting introduction. The TSN TG Chair announced that the meeting is subject to the Copyright Policy, Patent policy and Participants Policy as read and displayed at the opening plenary meeting.

16. János Farkas led the drafting of https://www.ieee802.org/1/files/public/docs2020/dp-farkas-TSN-for-Aerospace-draft-PAR-0920-v04.pdf and https://www.ieee802.org/1/files/public/docs2020/dp-farkas-TSN-for-Aerospace-draft-CSD-0820-v03.pdf.
    Disposition:
    - Updated PAR: https://www.ieee802.org/1/files/public/docs2020/dp-draft-PAR-0920-v01.pdf
    - Updated CSD: https://www.ieee802.org/1/files/public/docs2020/dp-draft-CSD-0920-v01.pdf

1:35 PM recess.

Call to order Sep 25, 2020 at 11:30 AM by János Farkas, IEEE 802.1 TSN TG Chair, who presided and Marina Gutiérrez, IEEE 802.1 TSN TG Secretary wrote the minutes.

17. Meeting introduction. The TSN TG Chair announced that the meeting is subject to the Copyright Policy, Patent policy and Participants Policy as read and displayed at the opening plenary meeting.

18. Don Pannell presented "Practical Use Cases for Ethernet Redundancy" https://www.ieee802.org/1/files/public/docs2020/dg-pannell-PracticalUseCasesForEthernetRedundancy-0920-v2.pdf.
    Disposition: presentation was discussed. Related to an ongoing project.

19. Max Turner presented “IEEE802.1DG - TRAFFIC CATEGORIES” https://www.ieee802.org/1/files/public/docs2020/dg-turner-traffic-classification-0920-v01.pdf.
    Disposition: presentation was discussed. Related to an ongoing project.

1:41 PM adjournment

5.1 IEC/IEEE 60802 Joint Project

Between this session and the preceding session, the IEC/IEEE 60802 Joint Project held the following electronic meetings:

- Minutes of the IEC/IEEE 60802 Joint Project meeting held 2020-07-27 9:00 AM - 11:00 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&O=A&P=17809
- Minutes of the IEC/IEEE 60802 Joint Project meeting held 2020-08-03 9:00 AM - 11:00 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&O=A&P=27805
- Revised Minutes (List of participants updated) of the IEC/IEEE 60802 Joint Project meeting held 2020-08-10 9:00 AM - 11:00 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&O=A&P=38831
- Minutes of the IEC/IEEE 60802 Joint Project meeting held 2020-08-17 9:00 AM - 11:00 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&O=A&P=82761
- Minutes of the IEC/IEEE 60802 Joint Project meeting held 2020-08-24 9:00 AM - 11:00 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&O=A&P=57488
- Minutes of the IEC/IEEE 60802 Joint Project meeting held 2020-08-31 9:00 AM - 11:00 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&O=A&P=83748
- Minutes of the IEC/IEEE 60802 Joint Project meeting held 2020-09-14 9:00 AM - 11:00 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&O=A&P=84688

Call to order Sep 21, 2020 at 9:00 AM EDT by Ludwig Winkel, IEC 65C/WG18 Convenor and IEC/IEEE 60802 Joint Project Chair (60802 JP Chair), who presided with János Farkas, IEEE 802.1 TSN TG Chair (TSN TG Chair). Josef Dorr, IEC/IEEE 60802 Joint Project Secretary (60802 Secretary), wrote the minutes.

Agenda items and dispositions:

1. Meeting introduction and other administrative items. The 60802 Chair showed:
   - The IEEE SA Copyright Policy slides,
   - The IEEE SA PatCom Patent Slides for Standards Development Meetings,
   - The IEEE SA slides regarding IEEE Codes of Ethics and Conduct, participation in the “individual process”, and dominance,
   - The decorum information, and
   - The reminder for participants to register their attendance in IMAT

   contained in “MEETING INTRODUCTION” http://www.ieee802.org/1/files/public/templates/admin-WG+TG-intro-0720-v01.pdf thereby providing the information on slides 2 and 5 of this presentation, and made the Call for Potentially Essential Patents: there were no responses to this Call prior to the end of the meeting. The 60802 Chair explained that the IEC/IEEE 60802 Joint Project also follows the usual IEC patent https://www.iec.ch/members_experts/tools/patents/patent_policy.htm and copyright

https://www.iec.ch/standardsdev/resources/draftingpublications/overview/rules_requirements/copyright.htm policies.

2. Approval of agenda. The 60802 JP Chair presented the agenda in https://1.ieee802.org/2020-09-interim-tsn-agenda/#TSN_8211_IECIEEE_60802, which is also available in https://collaborate.iec.ch/#/pages/workspaces/677749/documents/138995/details/509906?onlyWithPreview=false&fileId=509906.
   Disposition: the agenda was reviewed, discussed, and agreed (informally, none dissenting) as presented.
3. IEC/IEEE 60802 D1.2 TG ballot comment resolution. Jordon Woods, IEC/IEEE 60802 Editor, continued the resolution of comments received on http://www.ieee802.org/1/files/private/60802-drafts/d1/60802-d1-2.pdf.
   Disposition: Partial disposition. Ballot comments 398, 1006, 675, 235, 342, 236, 774 were resolved as documented in https://www.ieee802.org/1/files/private/60802-drafts/d1/.
   Ballot comments 620, 676, 301 were to be discussed in the IEC/IEEE 60802 Joint Project System Specification ad hoc (System ad hoc).
   As a consequence of the discussion on comment 398 a contribution on how to use IEEE 802.1CB in industrial automation was considered necessary.
4. Review of minutes. Draft minutes were reviewed at the end of the electronic meeting under the lead of the 60802 Secretary.

11:00 AM recess

Call to order Sep 22, 2020 at 11:30 AM EDT by Ludwig Winkel, 60802 JP Chair, who presided with János Farkas, IEEE 802.1 TSN TG Chair. Josef Dorr, 60802 Secretary, wrote the minutes.

5. Meeting introduction. The TSN TG Chair announced that the meeting is subject to the Copyright Policy, Patent policy and Participants Policy as read and displayed at the opening plenary meeting. The 60802 JP Chair explained that the IEC/IEEE 60802 Joint Project also follows the usual IEC patent and copyright policies.
6. Approval of agenda. The 60802 JP Chair presented the agenda in https://1.ieee802.org/2020-09-interim-tsn-agenda/#TSN_8211_IECIEEE_60802-2, which is also available in https://collaborate.iec.ch/#/pages/workspaces/677749/documents/138995/details/509906?onlyWithPreview=false&fileId=509906.
   Disposition: the agenda was reviewed, discussed, and agreed (informally, none dissenting) as presented.
7. IEC/IEEE 60802 D1.2 TG ballot comment resolution. Jordon Woods, IEC/IEEE 60802 Editor, continued the resolution of comments received on http://www.ieee802.org/1/files/private/60802-drafts/d1/60802-d1-2.pdf.
   Disposition: Partial disposition. Ballot comments 886, 782, 783, 775, 621, 784, 776, 786, 623, 1007, 711, 777, 1008, 27, 26 were resolved as documented in https://www.ieee802.org/1/files/private/60802-drafts/d1/.
   Ballot comments 24, 567, 887 were to be discussed in the System ad hoc group.
   The resolution of ballot comment 302 was deferred pending outcome of the synchronization simulation results.
   The resolution of comment 303 was deferred so that “IEC/IEEE 60802 End station model Requirements and assigned features” https://www.ieee802.org/1/files/public/docs2020/60802-Steindl-EndStationModel-0920-v3.pdf can be analyzed offline beforehand.
   The discussion of comment 24 showed that a contribution on different requirements on bridged end stations and pure bridges was considered necessary.

8. Review of minutes. Draft minutes were reviewed at the end of the electronic meeting under the lead of the 60802 Secretary.

1:30 PM EDT recess

Call to order Sep 23, 2020 at 9:00 PM EDT by Ludwig Winkel, 60802 JP Chair, who presided with János Farkas, IEEE 802.1 TSN TG Chair. Josef Dorr, 60802 Secretary, wrote the minutes.

9. Meeting introduction. The TSN TG Chair announced that the meeting is subject to the Copyright Policy, Patent policy and Participants Policy as read and displayed at the opening plenary meeting. The 60802 JP Chair explained that the IEC/IEEE 60802 Joint Project also follows the usual IEC patent and copyright policies.
10. Approval of agenda. The 60802 JP Chair presented the agenda in https://1.ieee802.org/2020-09-interim-tsn-agenda/#TSN_8211_IECIEEE_60802-3, which is also available in https://collaborate.iec.ch/#/pages/workspaces/677749/documents/138995/details/509906?onlyWithPreview=false&fileId=509906.
    Disposition: the agenda was reviewed, discussed, and agreed (informally, none dissenting) as presented.
11. New Simulation Results for Time Error Performance for Transport over an IEC/IEEE 60802 Network Based on Updated Assumptions. Geoffrey Garner presented "New Simulation Results for Time Error Performance for Transport over an IEC/IEEE 60802 Network Based on Updated Assumptions Revision 1" https://www.ieee802.org/1/files/public/docs2020/60802-garner-new-simulation-results-dte-updated-assumptions-60802-network-0920-v01.pdf.
    Disposition: The presentation was discussed as next agenda item.
12. Q&A, discussion. Geoffrey Garner led the discussion on agenda item 11.
    - GM rateRatio using successive Sync messages would require an IEEE 802.1AS-2020 amendment. Several participants raised concerns.
    - Synchronization startup time is another important aspect of industrial applications. If this is to be analyzed a more detailed description of the assumptions is needed. The definition of "in-sync" is part of the IEEE P802.1ASdm amendment.
    - The assumptions may not be fulfillable by constrained devices. More stable oscillators may be a better solution.
    - Case 3 with smaller PDelay turnaround times was suggested.
    - It was asked what the exact effect is of increased residence time compared to sync interval.
    - The author asked if it would be helpful to redo the simulations with the revisions/corrections outlined in the presentation.

    Disposition: More discussion needed. The discussion will continue on Oct 5, 2020.
13. Review of minutes. Draft minutes were reviewed at the end of the electronic meeting under the lead of the 60802 Secretary.

11:10 AM recess

Call to order Sep 24, 2020 at 09:00 AM EDT by Ludwig Winkel, 60802 JP Chair, who presided with János Farkas, IEEE 802.1 TSN TG Chair. Josef Dorr, IEC/IEEE 60802 Joint Project Secretary, wrote the minutes.

14. Meeting introduction. The TSN TG Chair announced that the meeting is subject to the Copyright Policy, Patent policy and Participants Policy as read and displayed at the opening plenary meeting. The 60802 JP Chair explained that the IEC/IEEE 60802 Joint Project also follows the usual IEC patent and copyright policies.

15. Approval of agenda. The 60802 JP Chair presented the agenda in https://1.ieee802.org/2020-09-interim-tsn-agenda/#TSN_8211_IECIEEE_60802-4, which is also available in https://collaborate.iec.ch/#/pages/workspaces/677749/documents/138995/details/509906?onlyWithPreview=false&fileId=509906.
    Disposition: the agenda was reviewed, discussed, and agreed (informally, none dissenting) as presented.
16. Closing the gap between preemption and T1L. Jordon Woods presented "Closing the gap between preemption and T1L" https://www.ieee802.org/1/files/public/docs2020/60802-woods-Preemption-Gap-0920-v01.pdf and led a discussion on the topic.
    Disposition: More discussion needed. There is a desire in 60802 to support link speeds from 10 Mb/s to 1 Gb/s. Clarification is needed on whether IEEE 802.3 allows support of preemption with 10 Mb/s link speeds.
17. IEC/IEEE 60802 D1.2 TG ballot comment resolution. Jordon Woods, IEC/IEEE 60802 Editor, continued the resolution of comments received on http://www.ieee802.org/1/files/private/60802-drafts/d1/60802-d1-2.pdf.
    Disposition: Partial disposition. Ballot comments 303, 880, 791, 881, 879, 792, 1009, 201, 72, 562 were resolved as documented in https://www.ieee802.org/1/files/private/60802-drafts/d1/.
    The discussion of comment 303 raised the question of whether the configuration of the enhancements for scheduled traffic (MIB or YANG) can be applied to end stations as well.
18. Review of minutes. Draft minutes were reviewed at the end of the electronic meeting under the lead of the 60802 Secretary.

11:00 AM recess

Call to order Sep 25, 2020 at 09:00 AM EDT by Ludwig Winkel, 60802 JP Chair, who presided with János Farkas, IEEE 802.1 TSN TG Chair. The 60802 JP Chair wrote the minutes.

19. Meeting introduction. The TSN TG Chair announced that the meeting is subject to the Copyright Policy, Patent policy and Participants Policy as read and displayed at the opening plenary meeting. The 60802 JP Chair explained that the IEC/IEEE 60802 Joint Project also follows the usual IEC patent and copyright policies. The TSN TG Chair presented the tentative schedule of the upcoming November 2020 plenary that will be substituted by a series of electronic meetings, see https://1.ieee802.org/tsn/tsn-tg-meetings/#IEEE_802_Plenary_Session_November_2_8211_10_2020. Be aware that the dates are different from the originally announced plenary session dates.
20. Approval of agenda. The 60802 JP Chair presented the agenda in https://1.ieee802.org/2020-09-interim-tsn-agenda/#TSN_8211_IECIEEE_60802-4, which is also available in https://collaborate.iec.ch/#/pages/workspaces/677749/documents/138995/details/509906?onlyWithPreview=false&fileId=509906.
    Disposition: the agenda was reviewed, discussed, and agreed (informally, none dissenting) as presented.
21. IEC/IEEE 60802 D1.2 TG ballot comment resolution. Jordon Woods, IEC/IEEE 60802 Editor, continued the resolution of comments received on http://www.ieee802.org/1/files/private/60802-drafts/d1/60802-d1-2.pdf.
    Disposition: Partial disposition. Ballot comments 7, 286, 213, 231, 214, 215, 216 were resolved as documented in https://www.ieee802.org/1/files/private/60802-drafts/d1/.
22. Review of minutes. Draft minutes were reviewed at the end of the electronic meeting under the lead of the 60802 JP Chair.

11:05 PM EDT adjournment

6 Nendica

Between this session and the preceding session, Nendica held the following electronic meetings:

- Subject: Minutes of the Nendica meeting held 2020-08-06 09:00-10:20 AM ET https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&O=A&P=24430
- Subject: Minutes of the Nendica meeting held 2020-08-20 09:00-10:13 AM ET https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&O=A&P=41900

The table in section 1 reflects the attendance and affiliation of participants who registered their attendance in IMAT.

Call to order September 17, 2020 at 9:03 AM ET by Roger Marks, Nendica Chair, who presided and wrote the minutes.

Agenda items and dispositions:

1. Meeting introduction. The Nendica Chair showed:
   - The IEEE SA Copyright Policy slides,
   - The Guidelines for IEEE SA Meetings slide,
   - The IEEE SA slides regarding IEEE Codes of Ethics and Conduct, participation in the "individual process", and dominance,
   - The decorum information, and
   - The reminder for participants to register their attendance in IMAT

   contained in "MEETING INTRODUCTION" http://www.ieee802.org/1/files/public/templates/admin-prePAR-intro-0720-v01.pdf thereby providing the information on slide 2 of this presentation.
2. Approval of agenda. Chair presented the agenda in https://1.ieee802.org/agenda-ieee-802-nendica-telecon-dcn/.
   Disposition: The agenda was reviewed, discussed and agreed (informally, none dissenting) as presented. It is recorded as "Approved Agenda of the Nendica Meeting of 2020-09-17" https://mentor.ieee.org/802.1/dcn/20/1-20-0051-00-ICne.pdf.
3. Update. The Nendica Chair reviewed the Nendica web site and the new documents available at the Nendica mentor server.
   Disposition: No discussion.
4. Minutes. The Nendica Chair reviewed the draft "Minutes of the Nendica meeting held 2020-08-20 09:00-10:13 AM ET" https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&O=A&P=41900.
   Disposition: The document was reviewed and agreed (informally, none dissenting) as presented.
5. Stream and Flow Interworking (SFI) Work Item. Roger Marks, SFI Editor, noted that SFI has not been meeting due to lack of contributions and that meetings will resume when contributions arise.
6. Data Center Networks (DCN) Work Item.
   6.1. Paul Congdon, DCN Editor, presented a pre-draft version of "IEEE 802 Nendica Report: Intelligent Lossless Data Center Networks" https://mentor.ieee.org/802.1/dcn/20/1-20-0038-05-ICne.pdf, highlighting material added since the prior version and shown in markup.
   Disposition: Further review of the material, and additional material, is welcome, with inputs directed to the Editor, to the Nendica Email list, or to Mentor.

Draft

6.2. The participants discussed “NIC For Lossless Network” https://mentor.ieee.org/802.1/dcn/20/1-20-0050-00-ICne.docx, in the absence of the contributor, Qingchun Song.
Disposition: The contribution will be entered onto the agenda of next week’s meeting, and participants will encourage the contributor to attend.

7. Study Item: Managed LAN as a Service [MLaaS].
Disposition: No discussion.
8. Future Meetings. The Chair noted that Nendica has scheduled DCN meetings on alternate Thursdays 09:00 AM -11:00 AM ET. He noted that Nendica is also scheduled to meet on September 24, 2020 09:00 AM -11:00 AM ET during the 802.1 WG Interim Session and that all Nendica topics will be suitable for that meeting.
9. Any Other Business. No other business was discussed by Nendica in this session.

9:54 AM ET adjournment

7 YANGsters

Between this session and the preceding session, YANGsters held the following electronic meetings:

- Minutes of the YANGsters meeting held 2020-08-04 10:14 AM - 11:00 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&X=O93A7C7C5D1AF714387&Y=stephan.kehrer.committees%40gmail.com&P=26329
- Minutes of the YANGsters meeting held 2020-08-11 10:00 - 10:55 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&X=O93A7C7C5D1AF714387&Y=stephan.kehrer.committees%40gmail.com&P=44146
- Minutes of the YANGsters meeting held 2020-08-18 10:00 - 10:50 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&X=O93A7C7C5D1AF714387&Y=stephan.kehrer.committees%40gmail.com&P=44928
- Minutes of the YANGsters meeting held 2020-08-25 10:05 - 11:05 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&X=O93A7C7C5D1AF714387&Y=stephan.kehrer.committees%40gmail.com&P=53313
- Minutes of the YANGsters meeting held 2020-09-01 10:00 AM - 11:00 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&X=O93A7C7C5D1AF714387&Y=stephan.kehrer.committees%40gmail.com&P=64939
- Minutes of the YANGsters meeting held 2020-09-15 10:00 AM – 11:00 AM EDT https://listserv.ieee.org/cgi-bin/wa?A2=ind20&L=STDS-802-1-MINUTES&X=O190C51ED69340D16A1&Y=stephan.kehrer.committees%40gmail.com&P=98950

Call to order Sep 24, 2020 at 2:00 PM EDT by Scott Mansfield, the YANGsters Chair, who presided. Stephan Kehrer, the YANGsters Secretary, wrote the minutes.

The table in section 1 reflects the attendance and affiliation of participants who registered their attendance in IMAT.

Agenda items and dispositions:

1. Meeting introduction. The YANGsters Chair reminded participants that the following information was made available before the meeting

- The IEEE SA Copyright Policy slides,
- The Guidelines for IEEE SA Meetings slide,
- The IEEE SA slides regarding IEEE Codes of Ethics and Conduct, participation in the "individual process", and dominance,
- The decorum information, and
- The reminder for participants to register their attendance in IMAT

contained in "MEETING INTRODUCTION" http://www.ieee802.org/1/files/public/templates/admin-prePAR-intro-0720-v01.pdf thereby providing the information on slide 2 of this presentation.
The YANGsters Chair made the Call for Potentially Essential Patents: there were no responses to this Call prior to the end of the session.

2. Approval of agenda. The YANGsters Chair presented the agenda in https://1.ieee802.org/september-2020-interim-session-electronic-yangsters-agenda/.
Disposition: the agenda was reviewed, discussed and agreed (informally, none dissenting) as presented.
3. YANG discussion related to P802.1CBcv but have general applicability. Stephan Kehrer led the discussion.
    - Discussion of semantics related to usage of the "mandatory true" statement.
    - Comments #1 and #32 in https://www.ieee802.org/1/files/private/cv-drafts/d0/802-1CBcv-d0-4-pdis-v02.pdf were shown to illustrate the issue.
    - Agreed (informally, none dissenting) that the "mandatory true" statement is not meant to convey a statement on conformance. It was pointed out that adding semantics to a YANG construct that go beyond what is specified in RFC 7950 is best avoided.
    - Information is expected to be added to the instructions for YANG editors to make it clear that the "mandatory true" statement should not be used to express conformance.
    - Structure of YANG modules (separate types file and what goes where)
    - Comment #5 in https://www.ieee802.org/1/files/private/cv-drafts/d0/802-1CBcv-d0-4-pdis-v02.pdf was shown to illustrate the issue.
    - Separating YANG files into two files (types and base YANG file) by default and including all types and groupings in the types file make reading the files much harder and provide no real benefit.
    - The first conclusion of the discussion was to suggest to YANG editors that YANG modules should be initially structured as a monolithic file. Types can then be moved to a separate types file on a case by case basis, if required.
    - The first conclusion of the discussion was to suggest to YANG editors that groupings should only be done as separate groupings if they are used more than once in the YANG file. If that is not the case the contents of the grouping should be kept in-line in the YANG module to improve readability.

    Disposition: Agreed (informally, none dissenting) to update the guidelines for YANG editors with the conclusions stated above for the two topics.
4. Continue Maintenance/Guidelines Discussion. Johannes Specht led the discussion on http://www.ieee802.org/1/files/public/docs2019/maint-specht-yang-comments-0919-v01.pdf
    - Three options for continuing the work on the issues list were discussed.
    - The first option means to leave the structure the way it is and add instructions to add and correct what is missing.
    - The second option is to restructure the FDB section of the 802.1Q Bridge module.
    - A third option is to do the work in P802.1Q-Rev. This could be done via ballot comments in the current P802.1Q-Rev ballot.

- Option one is considered maintenance by YANGsters, option two is considered to be work for a new project.

Disposition: Agreed (informally, none dissenting) to discuss the options with the Maintenance TG chair and the editor of IEEE Std 802.1Qcp.

5. Review of IETF drafts related to YANG. The YANGsters Chair presented https://datatracker.ietf.org/doc/draft-ietf-netmod-intf-ext-yang/ and https://datatracker.ietf.org/doc/draft-ietf-netmod-sub-intf-vlan-model/, and led the discussion.
   Disposition: Agreed (informally, none dissenting) that interested individuals can discuss presented items on the IETF mailing list.
6. Update on Hot Issues. The YANGsters Chair presented the issues in the "YANGsters Issue List" https://1.ieee802.org/yangsters/yangsters-issue-list/.
   - P802f was briefly discussed. "P802f YANG Data Model for EtherTypes Overview and Open Issues" https://www.ieee802.org/1/files/public/docs2020/802f-holness-status_for_RAC-0820-v01.pdf has been discussed with the RAC that would create an ad hoc between the RAC and 802.1 to discuss P802f.
   - Marc Holness, P802f editor, presented https://www.ieee802.org/1/files/private/802-f-drafts/d0/802f-d0-1.pdf.

   Disposition: Agreed (informally, none dissenting) to move the discussions to an electronic meeting of the ad hoc with the RAC.
7. Any Other Business. No other business was discussed by YANGsters in this session.
8. Future meetings. YANGsters meet next during the electronic meeting on September 29, 2020.

4:00 PM adjournment

8 Next Session

Nov 2-10, 2020 electronic plenary session.

Draft