IEEE 802.1 Working Group May 3-7, 2021 Interim Session

Electronic

Session Minutes

The Working Group (WG) Chair, Glenn Parsons, presided.

The Recording Secretary, Jessy Rouyer, wrote and/or edited 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. Discussion points captured do not necessarily reflect the views of the presenter, discussion leader or minute taker, and do not imply consensus unless that is explicitly minuted. The content of draft standards is determined by the ballot process; other formal decisions are the subject of Working Group motions.

1 Attendance and affiliation

The table in this section reflects, for all meetings held in the session, the attendance (denoted by the ● symbol) and affiliation of participants who registered their attendance in IMAT.

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2 802.1 Officers and Leadership

- Chair: Glenn Parsons
- Vice-Chair and Recording Secretary: Jessy Rouyer
- Executive Secretary: Stephan Kehrer
- Liaison Secretary: Karen Randall
- Maintenance TG Chair: Paul Congdon
- Security TG Chair: Mick Seaman
 - o Security TG Vice-Chair: Karen Randall
- TSN TG Chair: János Farkas
 - o TSN TG Vice-Chair: Craig Gunther
 - TSN TG Secretary: Marina Gutiérrez
 - o IEC/IEEE 60802 Joint Project Chair: Ludwig Winkel
 - o IEC/IEEE 60802 Joint Project Secretary: Josef Dorr
 - o IEEE P802.1DP / SAE AS6675 joint project co-Chairs: Abdul Jabbar and János Farkas
- Nendica Chair: Roger Marks
- YANGsters Chair: Scott Mansfield
 - o YANGsters Vice-Chair and Secretary: Stephan Kehrer
- Maintenance of Email exploder: Hal Keen and Mark Hantel
- Maintenance of website: Roger Marks

3 Maintenance Task Group

The table in section 1 reflects, for all meetings held in this session, the attendance and affiliation of participants who registered their attendance in IMAT.

Call to order May 4, 2021 at 14:02 ET 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"

https://www.ieee802.org/1/files/public/templates/admin-WG+TG-intro-0321-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 session.

- Approval of agenda. The Maintenance TG chair presented the agenda in https://1.ieee802.org/may-2021-interim-session-electronic-maintenance-agenda/
 Disposition: The agenda was reviewed, discussed, and updated as recorded by these minutes.
- 3. IEEE 1588 Inclusive Terminology Briefing. Doug Arnold led the discussion of IEEE 1588 Inclusive Terminology.
 - **Disposition:** For information
- P802.1AS-2020/Cor1/D1.0 Comment Resolution. Geoffrey Garner, P802.1AS-2020/Cor1 editor, led the resolution of comments received on https://www.ieee802.org/1/files/private/as-2020-cor-1-drafts/802-1AS-2020-Cor1-d1-0-ln.pdf.
 - **Disposition:** Partial disposition https://www.ieee802.org/1/files/private/as-2020-cor-1-drafts/802-1AS-2020-Cor1-d1-0-pdis.pdf includes the resolution of ballot comments 3, 4, 28, 31 and 32.
- 5. P802.1Q-Rev/D0.4 Comment Resolution. Mick Seaman, P802.1Q-Rev editor, led the resolution of comments received on https://www.ieee802.org/1/files/private/q-rev-drafts/d0/802-1Q-rev-d0-4.pdf.
 - **Disposition:** Partial disposition https://www.ieee802.org/1/files/private/q-rev-drafts/d0/802-1Q-rev-d0-4-pdis-v1.pdf.

16:07 ET recess

Call to order May 07, 2021 at 14:00 ET by Paul Congdon, IEEE 802.1 Maintenance TG Chair who presided and wrote the minutes.

6. Meeting introduction. The Maintenance TG Chair announced that the meeting is subject to the Copyright Policy, Patent Policy and Participants Policy as read and displayed at the opening Maintenance TG meeting and made the Call for Potentially Essential Patents: there were no responses to this Call prior to the end of the session.

- Approval of agenda. The Maintenance TG Chair presented the agenda in https://1.ieee802.org/may-2021-interim-session-electronic-maintenance-agenda/
 Disposition: The agenda was reviewed, discussed, and updated as recorded by these minutes.
- 8. P802.1BA-Rev Status and Plan. David McCall, P802.1BA-Rev editor, led the discussion on the status of the draft.
 - **Disposition:** For information. The plan is to initiate a WG ballot by the end of May 2021 to close in time for the Jul 2021 802.1 plenary session.
- SC6 Status. Karen Randall presented the "ISO/IEC JTC1 SC6 STATUS May 2021" slides in "Maintenance Task Group Conference Call" https://www.ieee802.org/1/files/public/docs2021/maint-congdon-concall-0521-1-v01.pdf.
 Disposition: For information.
- 10. Liaisons:
 - The Maintenance TG Chair reviewed "OTNT Standardization Work Plan Issue 29" https://www.ieee802.org/1/files/public/docs2021/liaison-sg15-LS312-OTNTStdznWorkPlan-0421.zip.
 - The Maintenance TG Chair reviewed "LS 186: Liaison response on the withdrawal of IEEE Std 802.1D-2004" https://www.ieee802.org/1/files/public/docs2021/liaison-SG11-LS186-8021Dwithdrawal-0421.pdf.

Disposition:

- 802.1 WG updates to the OTNT work plan were created in March 2021. ITU-T SG 15 requests an update every nine months. No action is required for this liaison until Nov 2021.
- The Maintenance TG chair will draft a response to LS 186 for review and approval at the Jul 2021 802.1 plenary session.
- 11. Document Vehicle Status. The Maintenance TG Chair presented "Brief Vehicle Status Update" in "Maintenance Task Group Conference Call" https://www.ieee802.org/1/files/public/docs2021/maint-congdon-concall-0521-1-v01.pdf. **Disposition:** For information
- 12. Existing Maintenance Items. The Maintenance TG chair led the discussion of the following existing maintenance items:
 - 0242: IEEE Std 802.1Qcp-2018: Collected issues on data consistency and others
 - 0248: Managed objects for ECP in 802.1Q-2018
 - 0278: Inconsistent Clause 5 and PICS with respect to state machines
 - 0306: Add "derived-from-or-self" to the IEEE 802.1Q bridge YANG for compatibility with interfaces derived from ethernetCsmacd
 - 0309: Preemption in 802.1Q
 - 0310: Preemption in 802.1AC
 - 0311: 802.1Q: Resolution of stream filters with wildcard stream_handle specification
 - 0313: First frame of the stream

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'.

- 13. New Maintenance Items: The Maintenance TG chair led the discussion of the following new maintenance items:
 - 0314: network media and PHY

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'.

 P802.1Q-Rev/D0.4 Comment Resolution. Mick Seaman, P802.1Q-Rev editor, led the resolution of comments received on https://www.ieee802.org/1/files/private/q-rev-drafts/d0/802-1Q-rev-d0-4.pdf.

Disposition: Partial disposition https://www.ieee802.org/1/files/private/q-rev-drafts/d0/802-1Q-rev-d0-4-pdis-v1.pdf. The following comments were discussed: 15, 22, 24, 25, 26, 38, 45, 59, 89, 90, 117 and 118.

- 15. Any Other Business. No other business was discussed by the Maintenance TG in this session.
- 16. Future meetings. The next electronic meeting is scheduled for May 12, 2021 at 12:00 ET https://1.ieee802.org/maintenance-tg-electronic-meeting-agenda-may-12-2021-11-am-et/.
 A subsequent electronic meeting on May 18, 2021 is also scheduled https://1.ieee802.org/maintenance-tg-electronic-meeting-agenda-may-18-2021-11-am-et/.

16:10 ET adjournment

4 Security Task Group

Between this session and the preceding session, the IEEE 802.1 Security Task Group (Security TG) held electronic meetings whose minutes are incorporated to these session minutes by reference as follows:

The table in section 1 reflects, for all meetings held in this session, the attendance and affiliation of participants who registered their attendance in IMAT. The following list reflects additional attendance, in whole or part of a meeting, as noted on the Webex participants list. [IMAT does not allow participants who move between task group meetings running in parallel to register attendance in more than one meeting.]

Belliardi, Rudy Schneider Electric Tues (part)
 Rouyer, Jessy Nokia Thurs
 Rovnan, Mike US Army Fri
 Seaman, Mick Individual Thurs

Call to order May 4, 2021 at 11:06 ET by Mick Seaman, IEEE 802.1 Security TG Chair, who presided and wrote the minutes assisted by Karen Randall, Security TG Vice-Chair.

Agenda items and dispositions:

- 1. Meeting introduction. The Security 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 Calls for Potentially Essential Patents at the beginning of this meeting and at the beginning of the Security TG meeting on May 6, 2021 and May 7, 2021 in this session. There were no responses to these Calls prior to the end of the session.

- Approval of agenda. The Security TG Chair presented the agenda in https://1.ieee802.org/may-2021-interim-session-electronic-security-agenda/
 Disposition: The agenda was reviewed, discussed and updated as recorded by these minutes.
- P802.1AEdk MAC Privacy protection Draft development Don Fedyk, P802.1AEdk Editor, reviewed the current state of the draft (https://www.ieee802.org/1/files/private/dk-drafts/d0/802-1AEdk-d0-6.pdf) and led a discussion of the transmit state machine (encoding) and the priority/PCP tables which had been realigned with 802.1AE-2018.
 Disposition: For further discussion.

12:35 ET recess

Call to order May 6, 2021 at 11:06 ET by Mick Seaman, IEEE 802.1 Security TG Chair, who presided and wrote the minutes assisted by Karen Randall, Security TG Vice-Chair.

- P802.1AEdk MAC Privacy protection Draft development (cont.)
 Don Fedyk, P802.1AEdk Editor, led a discussion of the updated D0.61 draft https://www.ieee802.org/1/files/private/dk-drafts/d0/802-1AEdk-d0-61.pdf
 Discussion:
 - Terminology. In the context of P802.1AEdk "unprotected" means "not privacy-protected". It is probably better to use the latter term, as the P802.1AEdk context may be lost when rolling up amendments into a future revision of 802.1AE. Need better terminology than "None" in the Figures showing Privacy Frame or Privacy Channel mapping.
 - Handling of individual frames that are not privacy-protected is specified, and they may be prioritized over privacy protected frames (or use the same or an inferior access priority). If sent at higher priority such frames (or individual Privacy Frames) can delay the transmission of Privacy Channel frames. This does not result in privacy exposure. The effect on Privacy Channel transmission is determined by the parameters of the shaper that sources MPPDUs for the transmit encoding machine to pack. If the shaper has a burst size that only matches the MPPDU size then preemption by a higher priority frame will cause simple slippage in the regularly timed transmission of the Privacy Channel MPPDUs effectively taking bandwidth from the channel. If the burst size is greater than one, Privacy Channel MPPDUs will follow at a reduced interval, regaining some of the lost channel bandwidth. In neither case are the Privacy Channel MPPDU transmissions a reflection of channel load, and hence are not a privacy exposure. The same consideration applies to potential competition between two Privacy Channels if their shaper parameters dictate different natural intervals between transmissions.
 - Use of the 802.1X/MKA PAE group address as the destination address of privacyprotecting MPPDUs: this should be the default when the PrY and SecY are colocated, and almost always used in in that case. Its use provides alignment
 between the connectivity provided by MACsec and privacy protection. In more
 complex cases the system modeled may be based more on a Provider Edge
 Bridge than a simple EDE. Need to express the default in (or as information for) the
 YANG.
 - Received fragmented and unfragmented frames are delivered to the PrY's user in the order that their reception completes.
 - No standard management controls are envisaged for transmit encoding encapsulation algorithms other than the default.
 - PCP (Priority Code Point) encoding needs additional review.

802.1Q has some PCP treatment in YANG. Need to be sure that 802.1Q and related discussions have not overtaken 802.1AE as the priority/PCP details were set in 2004.

"Annex 1" needs to be "Annex A".

Disposition: For further discussion and updated draft review.

13:05 ET recess

Call to order May 7, 2021 at 11:02 ET by Mick Seaman, IEEE 802.1 Security TG Chair, who presided and wrote the minutes assisted by Karen Randall, Security TG Vice-Chair.

- 3. P802.1AEdk MAC Privacy protection Draft development (cont.)
 Don Fedyk, P802.1AEdk Editor, presented "IEEE 802.1 Security MACsec and MAC Privacy YANG Some Recent Updates" https://www.ieee802.org/1/files/public/docs2021/dk-fedyk-ieee802-dotaedk-management-updates-0521-v00.pdf
 Discussion:
 - Includes earlier discussed controls for "do not fragment" and use of PAE address for MPPDUs.
 - Union for "use PAE address" and actual address used is preferred approach.
 Allows visibility of address used even when "use PAE address" is configured.
 Union also aligns with MIB style.
 - Coding obvious default values, e.g. for 1-to-1 mapping of traffic class to access priority explicitly in YANG not a good idea. Back end code can supply defaults as needed, YANG can specify overrides as required. Detail in presentation.
- 4. Any Other Business MACsec and 802.11. The Security TG chair led a discussion of a comment on the potential use of MACsec with 802.11 from Wilson Llivichuzhca: https://www.ieee802.org/1/files/public/docs2021/ae-llivichuzhca-macsec-plus-wpa2-05-21.pdf.

Discussion:

- The statement "IEEE Std 802.1AE is not intended for use with IEEE Std 802.11" appears in the "Introduction" (not part of the standard) of IEEE 802.1AE-2018.
- This statement appears to be an over statement of the case, and may lead to a reluctance to deploy MACsec in addition to the security methods specified for 802.11 (WPA2/3). Scenarios similar to that specified in Figure 11-2 of 802.1AE-2018, with a lower layer of secure connectivity being provided by WPA2/3 (and not by MACsec) and the upper layer by MACsec may apply.
- The term "with" is unfortunately ambiguous. It was certainly not the intention to
 proscribe the use of MACsec to protect Ethernet connectivity from a wireless
 access point into a provider's network, but an over enthusiastic reading of "with"
 might conclude that.
- The immediately envisaged use case would not be at "enterprise scale" and would not require new key agreement protocol development to be viable.
- Use cases in which the termination point of the WPA2/3 and the MACsec protection coincide, and where the MACsec protection reached further into the network (potentially across a provider network to the users home network) are believed useful.
- In these use cases the keying of the crypto for each layer of protection would be separate, as per best current practice.
- The Security TG agreed (informally, one dissenting) that replacement of the current statement with text along the lines of "IEEE 802.1AE MACsec is not intended to be a replacement for the encryption in dot11" would be useful. Such a clarification would come under the umbrella of "errors and omissions in the description of

existing functionality" and could thus be pursued under the existing P802.1AEdk PAR, without the need for the development and approval of a new PAR.

Disposition: Security TG Chair to work with the commenter and his colleagues to formulate a suitable comment to be submitted on the next TG ballot of P802.1AEdk.

No other business was discussed by the Security TG in this session.

5. Future meetings. Security TG electronic meetings will be scheduled for Jun 1, 2021 13:00 ET and Jun 22, 2021 13:00 ET. Agenda: P802.1AEdk draft development and task group matters arising.

12:49 ET adjournment

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 electronic meetings whose minutes are incorporated to these session minutes by reference as follows:

- Minutes of the IEEE 802.1 TSN TG meeting held 2021-03-22 11:00 13:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&P=212871
- Minutes of the IEEE P802.1DG meeting held 2021-03-23 9:00 11:02 AM ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&P=116121
- Minutes of the IEEE 802.1 TSN TG meeting held 2021-03-25 16:00 18:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&P=213785
- Minutes of the IEEE 802.1 TSN TG meeting held 2021-03-29 11:00 13:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&P=214699
- Minutes of the IEEE P802.1DP/SAE AS6675 meeting held 2021-03-31 10:00 12:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&P=141526
- Minutes of the IEEE P802.1DG meeting held 2021-04-06 9:00 11:01 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&P=133477
- Minutes of the IEEE 802.1 TSN TG meeting held 2021-04-12 11:00 13:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&P=215613
- Minutes of the IEEE P802.1DG meeting held 2021-04-13 9:00 11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&P=139639
- Minutes of the IEEE 802.1 TSN TG meeting held 2021-04-19 11:00 13:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&P=217448
- Minutes of the IEEE P802.1DG meeting held 2021-04-20 9:00 11:01 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&P=154140
- Minutes of the IEEE 802.1 TSN TG meeting held 2021-04-26 11:00 11:55 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&P=218781

The table in section 1 reflects, for all meetings held in this session, the attendance and affiliation of participants who registered their attendance in IMAT.

The TSN TG and the IEC/IEEE 60802 Joint Project held joint meetings minuted in section 5.1.

Call to order May 03, 2021 at 11:31 ET 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-0321-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. The TSN TG Chair presented the agenda in https://1.ieee802.org/2021-05-interim-tsn-agenda/.

Disposition: The agenda was reviewed, discussed and agreed (informally, none dissenting) as presented.

Geoff Garner, P802.1ASdm editor, presented "P802.1ASdm-Rev/D0.2 Editor's Report" https://www.ieee802.org/1/files/public/docs2021/dm-garner-d0-2-tg-ballot-editors-report-0521-v02.pdf and led the resolution of comments received on https://www.ieee802.org/1/files/private/asdm-drafts/d0/802-1ASdm-d0-2-pdis-v03.pdf.
 Disposition: Comments were discussed and resolved, as documented in https://www.ieee802.org/1/files/private/asdm-drafts/d0/802-1ASdm-d0-2-pdis-v03.pdf.

13:32 - 14:00 ET recess

- Stephan Kehrer, P802.1CBcv editor, led the resolution of comments received on https://www.ieee802.org/1/files/private/cv-drafts/d1/802-1CBcv-d1-2.pdf.
 Disposition: Comments 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 were discussed and resolved as documented in https://www.ieee802.org/1/files/private/cv-drafts/d1/802-1CBcv-d1-2-dis-v02.pdf.
- Roger Marks, P802.1CQ editor, presented "P802.1CQ/D0.6 Preview"
 https://www.ieee802.org/1/files/public/docs2021/cq-marks-D06-preview-v01.pdf.

 Disposition: Presentation was discussed. Post-discussion update of the presentation: https://www.ieee802.org/1/files/public/docs2021/cq-marks-D06-preview-v02.pdf.
- 6. Lily Lv presented "Semantic Address with P802.1CQ" https://www.ieee802.org/1/files/public/docs2021/cq-lv-semantic-address-with-P802.1CQ-0501-v01.pdf.

Disposition: Presentation was discussed.

16:02 ET recess

Call to order May 04, 2021 at 09:00 ET by Craig Gunther, IEEE 802.1 TSN TG Vice-Chair, who presided. Marina Gutiérrez, IEEE 802.1 TSN TG Secretary, wrote the minutes.

- The TSN TG Vice-Chair announced that the meeting is subject to the Copyright Policy, Patent Policy and Participants Policy as read and displayed at the opening TSN TG meeting.
- 8. Max Turner, P802.1DG editor, presented "IEEE802.1DG CONFIGURATION PROTOCOLS" https://www.ieee802.org/1/files/public/docs2021/dg-turner-configuration-0521-v02.pdf.

Disposition: Presentation was discussed.

11:00 ET recess

Call to order May 05, 2021 at 09:00 ET by Craig Gunther, IEEE 802.1 TSN TG Vice-Chair, who presided. Marina Gutiérrez, IEEE 802.1 TSN TG Secretary, wrote the minutes.

- The TSN TG Vice-Chair announced that the meeting is subject to the Copyright Policy, Patent Policy and Participants Policy as read and displayed at the opening TSN TG meeting.
- Scott Mansfield, P802.1ABcu editor, led the resolution of comments received on https://www.ieee802.org/1/files/private/abcu-drafts/d1/802-1ABcu-d1-7.pdf.
 Disposition: All comments were resolved as documented in https://www.ieee802.org/1/files/private/abcu-drafts/d1/802-1ABcu-d1-7-dis-v01.pdf.
 Anticipated next: further WG recirculation ballot.
- Marc Holness, P802f editor, led the resolution of comments received on https://www.ieee802.org/1/files/private/802-f-drafts/d0/802f-d0-4.pdf.
 Disposition: All comments were resolved as documented in https://www.ieee802.org/1/files/private/802-f-drafts/d0/802f-d0-4-dis-v01.pdf. Anticipated next: 1st WG ballot.
- 12. Paul Congdon presented "Consideration of Adaptive PFC Headroom in 802.1Q" https://www.ieee802.org/1/files/public/docs2021/new-congdon-a-pfc-h-Q-changes-0521-v01.pdf.

Disposition: Presentation was discussed.

11:05 - 11:32 ET recess

Call to order May 05, 2021 at 11:32 ET by Abdul Jabbar and János Farkas, IEEE P802.1DP / SAE AS6675 joint project co-Chairs, who presided. Marina Gutiérrez, IEEE 802.1 TSN TG Secretary, wrote the minutes.

- 13. The IEEE P802.1DP / SAE AS6675 joint project co-Chairs announced that the meeting is subject to the Copyright Policy, Patent Policy and Participants Policy as read and displayed at the opening TSN TG meeting and that similar SAE policies apply.
- 14. Abdul Jabbar, P802.1DP / SAE AS6675 editor, presented "Summary of Aerospace Use Cases" https://www.ieee802.org/1/files/public/docs2021/dp-Jabbar-Aerospace-UseCase-Summary-0521-v01.pdf.

Disposition: Presentation was discussed.

15. Abdul Jabbar, P802.1DP / SAE AS6675 editor, presented "Summary of Aerospace Traffic Types" https://www.ieee802.org/1/files/public/docs2021/dp-Jabbar-Aerospace-TrafficTypes-Summary-0521-v02.pdf.

Disposition: Presentation was discussed.

16. Abdul Jabbar presented "Two Profile Approach for IEEE/SAE 802.1 DP" https://www.ieee802.org/1/files/public/docs2021/dp-Jabbar-two-profile-approach-0521-v01.pdf.

Disposition: Presentation was discussed.

13:45 - 14:03 recess

Call to order May 05, 2021 at 14:03 ET by János Farkas, IEEE 802.1 TSN TG Chair, who presided. Marina Gutiérrez, IEEE 802.1 TSN TG Secretary, wrote the minutes.

17. Astrit Ademaj presented "Talker Requirements" https://www.ieee802.org/1/files/public/docs2021/dj-ademaj-Talker-Requirements-0521-v01.pdf.

Disposition: Presentation was discussed.

18. Astrit Ademaj presented "MaxLatency Contribution" https://www.ieee802.org/1/files/public/docs2021/dj-ademaj-MaxLatency-contribution-0521-v01.pdf#page=13

Disposition: Presentation was discussed.

19. Johannes Specht presented "Proposed enhancement of the definition of MaxLatency in 46.2.3.6.x of IEEE Std 802.1Qcc-2018" https://www.ieee802.org/1/files/public/docs2021/dj-specht-maxlatencyfixcompat-0521-v01.pdf.

Disposition: Presentation was discussed.

16:02 ET recess

Call to order May 06, 2021 at 09:00 ET by János Farkas, IEEE 802.1 TSN TG Chair, who presided. Marina Gutiérrez, IEEE 802.1 TSN TG Secretary, wrote the minutes.

- 20. 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 TSN TG meeting.
- 21. Christophe Mangin, P802.1CBdb editor, presented "802.1CBdb/D1.3 Editor's report for the 2nd WG recirculation ballot comments resolution"

https://www.ieee802.org/1/files/public/docs2021/db-mangin-d1-3-editors-report-0521-v01.pdf and led the resolution of comments received on

https://www.ieee802.org/1/files/private/db-drafts/d1/802-1CBdb-d1-3.pdf.

Disposition: All comments were resolved as documented in https://www.ieee802.org/1/files/private/db-drafts/d1/802-1CBdb-d1-3-dis-v01.pdf.

22. Stephen Haddock, P802.1ABdh, led the resolution of comments received on https://www.ieee802.org/1/files/private/dh-drafts/d1/802-1ABdh-d1-1.pdf.

Disposition: All comments were resolved as documented in

https://www.ieee802.org/1/files/private/dh-drafts/d1/802-1ABdh-d1-1-dis-v1.pdf.

23. Geoff Garner, P802.1ASdm editor, presented "P802.1ASdm-Rev/D0.2Editor's Report" https://www.ieee802.org/1/files/public/docs2021/dm-garner-d0-2-tg-ballot-editors-report-0521-v02.pdf and continued the resolution of comments received on https://www.ieee802.org/1/files/private/asdm-drafts/d0/802-1ASdm-d0-2-pdis-v03.pdf. Disposition: Comments were discussed and resolved, as documented in https://www.ieee802.org/1/files/private/asdm-drafts/d0/802-1ASdm-d0-2-pdis-v03.pdf.

11:02 ET recess

Call to order May 07, 2021 at 09:00 ET by János Farkas, IEEE 802.1 TSN TG Chair, who presided. Marina Gutiérrez, IEEE 802.1 TSN TG Secretary, wrote the minutes.

- 24. 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 TSN TG meeting.
- 25. Tongtong Wang, P802.1DF editor?, presented "Exploration of deterministic networking from service provider's perspective" https://www.ieee802.org/1/files/public/docs2021/df-jiaxg-service-provider-exploration-on-determinitic-networking-0521-v0.pdf.

Disposition: Presentation was discussed.

- 26. Norman Finn presented "Proposed text for P802.1DF,TSN Profile for Service Provider Networks, clause 9, Interface with DetNet" https://www.ieee802.org/1/files/public/docs2021/df-finn-detnet-interface-text-0521-v01.pdf. Disposition: Presentation was discussed.
- 27. Norman Finn, P802.1DC editor, gave a verbal update on P802.1DC status. **Disposition:** For information only. 10:45 11:30 ET recess
- 28. The TSN TG Chair led the drafting of PAR extensions for P802.1Qcj and P802.1Qcw. **Disposition:** PAR extensions created for P802.1Qcj in https://www.ieee802.org/1/files/public/docs2021/cj-PAR-extension-0521-v01.pdf and for P802.1Qcw in https://www.ieee802.org/1/files/public/docs2021/cw-PAR-extension-0521-v01.pdf.

- 29. Johannes Specht presented "Nendica Study Item: Cut-Through Forwarding in Bridges and Bridged Networks [CTF]" https://l.ieee802.org/nendica-ctf/ to summarize related Nendica progress.
 - **Disposition:** for information only.
- 30. Hiroki Nakano presented "P802.1Qdq (assuming the approvalof the PAR) Text Contribution" https://www.ieee802.org/1/files/public/docs2021/dq-itaya-cas-text-contribution-0521-v01.pdf.
 - **Disposition:** presentation was discussed.
- 31. Geoff Garner, P802.1ASdm editor, presented "P802.1ASdm-Rev/D0.2 Editor's Report" https://www.ieee802.org/1/files/public/docs2021/dm-garner-d0-2-tg-ballot-editors-report-0521-v02.pdf and continued the resolution of comments received on https://www.ieee802.org/1/files/private/asdm-drafts/d0/802-1ASdm-d0-2-pdis-v04.pdf. Disposition: Comments were discussed and resolved as documented in https://www.ieee802.org/1/files/private/asdm-drafts/d0/802-1ASdm-d0-2-pdis-v04.pdf.

13:37 ET adjournment

5.1 IEC/IEEE 60802 Joint Project

Between this session and the preceding session, the IEC/IEEE 60802 Joint Project held electronic meetings whose minutes are incorporated to these session minutes by reference as follows:

- Minutes of the IEC/IEEE 60802 Joint Project meeting held 2021-03-22 9:00 11:00 ET <u>https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-</u>
 MINUTES&O=A&P=120445
- Minutes of the IEC/IEEE 60802 Joint Project meeting held 2021-03-29 9:00 11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-
 MINUTES&O=A&P=136948
- Minutes of the IEC/IEEE 60802 Joint Project meeting held 2021-04-19 9:00 11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-
 MINUTES&O=A&P=163547
- Minutes of the IEC/IEEE 60802 Joint Project meeting held 2021-04-26 9:00 11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&O=A&P=164493

Between this session and the preceding session, the IEC/IEEE 60802 Joint Project System Specification ad hoc (System ad hoc) held the following electronic meetings:

- Minutes of the IEC/IEEE 60802 Joint Project System Specification ad hoc meeting held 2021-03-19 9:00 - 11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&O=A&P=169433
- Minutes of the IEC/IEEE 60802 Joint Project System Specification ad hoc meeting held 2021-03-26 9:00 - 11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&O=A&P=170386
- Minutes of the IEC/IEEE 60802 Joint Project System Specification ad hoc meeting held 2021-04-09 9:00 - 11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&O=A&P=171342
- Minutes of the IEC/IEEE 60802 Joint Project System Specification ad hoc meeting held 2021-04-30 9:00 - 11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&O=A&P=172298

The table in section 1 reflects, for all meetings held in this session, the attendance and affiliation of participants who registered their attendance in IMAT.

Call to order May 3, 2021 at 9:00 ET by Ludwig Winkel, IEC 65C/WG18 Convenor and IEC/IEEE 60802 Joint Project Chair (60802 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 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"

https://www.ieee802.org/1/files/public/templates/admin-WG+TG-intro-0321-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_reguirements/copyright.htm policies.

- 2. Approval of agenda. The 60802 Chair presented the agenda in https://1.ieee802.org/2021-05-interim-tsn-agenda/#TSN-8211 IECIEEE 60802.
 - **Disposition:** The agenda was reviewed, discussed, and agreed (informally, none dissenting) as presented.
- 3. Update on the IEC 61802 conformity assessment project. The 60802 Chair gave a verbal update on the IEC 61802 conformity assessment project. Five consortia are involved to sponsor IEC 61802 development. An editor for the project is not appointed yet. **Disposition:** For information.
- 4. Editor's report. Jordon Woods, 60802 Editor, presented "Editor's Report 60802 Draft 1.2" https://www.ieee802.org/1/files/public/docs2021/60802-woods-D1-2-update-0521-v01.pdf. **Disposition:** For information.
- Update on System Ad Hoc. Mark Hantel, IEC/IEEE 60802 Joint Project System Specification ad hoc Chair (System ad hoc Chair), gave a verbal report of the System ad hoc's work. Agendas and minutes of the meetings are available at https://listserv.ieee.org/cgi-bin/wa?A1=ind21&L=STDS-802-1-MINUTES&O=A&H=0&D=0&T=1.
 - **Disposition:** For information.
- Gaps. Jordon Woods, 60802 Editor, presented and led the discussion on the gaps listed in Annex Z of http://www.ieee802.org/1/files/private/60802-drafts/d1/60802-d1-2.pdf.
 Disposition: Based on the results of the discussion, agreed (informally, none dissenting) to update Annex Z in the next IEC/IEEE 60802 draft. More discussion is needed.
- 7. Discussion on OPC contribution. Jordon Woods, 60802 Editor, presented and led the discussion on "Contribution to IEC/IEEEE 60802" https://www.ieee802.org/1/files/private/liaisons/liaison-OPCF-LLDP-gPTP-usage--0421-v01.pdf, which was provided as a liaison.
 - **Disposition:** Agreed (informally, none dissenting) to invite contributions to derive a stripped-down clause 4 for possible integration into IEC/IEEE 60802. More discussion is needed.
- 8. Review of minutes. This agenda item was skipped by lack of time.

11:00 ET recess

Call to order May 4, 2021 at 11:30, by Janos Farkas, TSN TG Chair, who presided with Ludwig Winkel, 60802 Chair. Josef Dorr, 60802 Secretary, wrote the minutes.

- 9. Meeting introduction and other administrative items. The TSN TG Chair announced that the meeting is subject to the Copyright Policy, Patent Policy and Participants Policy as read and displayed as part of agenda item 1. The 60802 Chair explained that the IEC/IEEE 60802 Joint Project also follows the usual IEC patent and copyright policies.
- 10. Approval of agenda. The 60802 Chair presented the agenda in https://1.ieee802.org/2021-05-interim-tsn-agenda/#TSN-8211 IECIEEE 60802-2.
 - **Disposition:** The agenda was reviewed, discussed, and agreed (informally, none dissenting) as presented.
- 11. Centralized and distributed configuration for industrial automation. Janos Farkas presented and led the discussion on "Central and Distributed Components for TSN Configuration" https://www.ieee802.org/1/files/public/docs2021/60802-farkas-central-and-distributed-configuration-components-0521-v01.pdf.
 - **Disposition:** More discussion is needed.
- 12. RAP in industrial automation. Josef Dorr presented and led the discussion on "RAP in Industrial Automation" https://www.ieee802.org/1/files/public/docs2021/60802-dorr-RAPinIndustrialAutomation-0521-v02.pdf.
 - **Disposition:** More discussion is needed.
- 13. Machine-to-Machine Interaction in a production line. Karl Weber presented and led the discussion on "M2M-Interaction in a production line How to combine different things" https://www.ieee802.org/1/files/public/docs2021/60802-Weber-MMinteract-0521-v01.pdf. Disposition: More discussion is needed.
- 14. Review of minutes. Draft minutes were reviewed under the lead of the 60802 Secretary.

13:40 ET recess

Call to order May 5, 2021 at 9:00 ET, by Ludwig Winkel, 60802 Chair, who presided with János Farkas, TSN TG Chair. Josef Dorr, 60802 Secretary, wrote the minutes.

- 15. Meeting introduction and other administrative items. The 60802 Chair announced that the meeting is subject to the Copyright Policy, Patent Policy and Participants Policy as read and displayed as part of agenda item 1. The 60802 Chair explained that the IEC/IEEE 60802 Joint Project also follows the usual IEC patent and copyright policies.
- 16. Approval of agenda. The 60802 Chair presented the agenda in https://1.ieee802.org/2021-05-interim-tsn-agenda/#TSN-8211 IECIEEE 60802-3.
 - **Disposition:** The agenda was reviewed, discussed, and agreed (informally, none dissenting) as presented.
- 17. Security. Andreas Furch presented the Preface, Goals and Constraints sections of "Security for IEC/IEEE 60802 Goals, Constraints and Use Cases" https://www.ieee802.org/1/files/public/docs2021/60802-Pfaff-et-al-Security-Goals-Constraints-UseCases-0521-v02.pdf. Oliver Pfaff continued the presentation of the Use Cases section of "Security for IEC/IEEE 60802 Goals, Constraints and Use Cases" https://www.ieee802.org/1/files/public/docs2021/60802-Pfaff-et-al-Security-Goals-Constraints-UseCases-0521-v02.pdf.
 - **Disposition:** Agreed (informally, none dissenting) to invite contributions proposing security content for IEC/IEEE 60802. More discussion is needed.
- 18. Review of minutes. This agenda item was skipped by lack of time.

Call to order May 6, 2021 at 11:30 ET by Ludwig Winkel, 60802 Chair, who presided. Josef Dorr, IEC/IEEE 60802 Joint Project Secretary, wrote the minutes.

- 19. Meeting introduction and other administrative items. The TSN TG Chair announced that the meeting is subject to the Copyright Policy, Patent Policy and Participants Policy as read and displayed as part of agenda item 1. The 60802 Chair explained that the IEC/IEEE 60802 Joint Project also follows the usual IEC patent and copyright policies.
- 20. Approval of agenda. The 60802 Chair presented the agenda in https://1.ieee802.org/2021-05-interim-tsn-agenda/#TSN-8211 IECIEEE 60802-4.
 - **Disposition:** The agenda was reviewed, discussed, and agreed (informally, none dissenting) as presented.
- 21. New Simulation Results for dTE for an IEC/IEEE 60802 Network. Geoffrey Garner presented and led the discussion on "New Simulation Results for dTE for an IEC/IEEE 60802, Based on New Frequency Stability Model" https://www.ieee802.org/1/files/public/docs2021/60802-garner-multipe-replic-simulation-results-new-freq-stab-model-0421-v01.pdf.
 - **Disposition:** The simulation results are input to the resolution of the remaining comments received on http://www.ieee802.org/1/files/private/60802-drafts/d1/60802-d1-2.pdf. More discussion is needed.
- 22. IEC/IEEE 60802 D1.2 TG ballot comment resolution. Jordon Woods, IEC/IEEE 60802 Editor, started the resolution of the remaining comments received on http://www.ieee802.org/1/files/private/60802-drafts/d1/60802-d1-2.pdf, which were related to synchronization.
 - **Disposition:** More discussion is needed.
- 23. Review of minutes. Draft minutes were reviewed under the lead of the 60802 Secretary.

13:30 ET recess

Call to order May 7, 2021 at 09:00 ET by Ludwig Winkel, 60802 Chair, who presided with János Farkas, TSN TG Chair. Josef Dorr, IEC/IEEE 60802 Joint Project Secretary, wrote the minutes.

- 24. Meeting introduction and other administrative items. The 60802 Chair announced that the meeting is subject to the Copyright Policy, Patent Policy and Participants Policy as read and displayed as part of agenda item 1. The 60802 Chair explained that the IEC/IEEE 60802 Joint Project also follows the usual IEC patent and copyright policies.
- 25. Approval of agenda. The 60802 Chair presented the agenda 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.
- 26. 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 comment 339 was discussed but not resolved. Additional simulation cases were proposed.
- 27. Review of minutes. Draft minutes were reviewed under the lead of the 60802 Secretary.

11:00 ET recess

6 Nendica

Between this session and the preceding session, the IEEE 802 "Network Enhancements for the Next Decade" Industry Connections Activity (Nendica) held electronic meetings whose minutes are incorporated to these session minutes by reference as follows:

- Minutes of the Nendica meeting held 2020-03-25 09:00-10:45 ET https://listserv.ieee.org/cgi-bin/wa?A2=STDS-802-1-MINUTES;bf4f58bf.21
- Minutes of the Nendica meeting held 2020-04-01 09:00-11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=STDS-802-1-MINUTES;82d42fb6.21
- Minutes of the Nendica meeting held 2020-04-15 09:00-11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=STDS-802-1-MINUTES;56ce02e4.21
- Minutes of the Nendica meeting held 2021-04-22 09:00-11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=STDS-802-1-MINUTES;8098fcfb.21
- Minutes of the Nendica meeting held 2021-04-29 09:00-11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=STDS-802-1-MINUTES;74878595.21

The table in section 1 reflects, for all meetings held in this session, the attendance and affiliation of participants who registered their attendance in IMAT.

Call to order May 6, 2021 at 09:00 ET by Roger Marks, Nendica Chair, who presided and wrote the minutes.

The following list reflects the attendance and affiliation of participants as recorded by the Nendica Chair:

Specht, Johannes Analog Devices, Inc.; Mitsubishi Electric Corporation; Phoenix Contact GmbH & Co. KG; PROFIBUS Nutzerorganisation e.V.; Siemens AG; Texas Instruments, Inc.

Agenda items and dispositions:

- 1. Meeting introduction and other administrative items. 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. The Nendica Chair presented the agenda in https://mentor.ieee.org/802.1/dcn/21/1-21-0026-00-ICne.pdf.
 - **Disposition:** The agenda was reviewed, discussed and agreed (informally, none dissenting) as presented.
- 3. Update. The Nendica Chair reviewed the Nendica web site and the new documents available at the Nendica mentor server.
- Minutes. The Nendica Chair reviewed the draft "Minutes of the Nendica meeting of 2021-04-29" https://listserv.ieee.org/cgi-bin/wa?A2=STDS-802-1-MINUTES;74878595.21
 Disposition: The document was reviewed and agreed (informally, none dissenting) as presented.
- 5. Stream and Flow Interworking [SFI] Work Item. Roger Marks, SFI Editor, provided an update. SFI has not been meeting due to lack of contributions and that meetings will resume when contributions arise.

- Data Center Networks [DCN] Work Item. Paul Congdon, DCN Editor, provided an update.
 The Nendica Report on Intelligent Lossless Data Center Networks was still being prepared
 for publication by IEEE SA staff. Some editorial changes had been introduced, and some
 figures may be replaced.
 - **Disposition:** It was agreed (informally, none dissenting) that participants interested in reviewing the pre-publication documents should contact the DCN Editor and/or the Nendica Chair to volunteer. It was agreed (informally, none dissenting) that, if replacement figures are introduced, the document should be posted for review for consistency by Nendica participants prior to IEEE publication.
- 7. Study Items. Johannes Specht led the discussion of the CTF Study Item on "Cut-Through Forwarding in Bridges and Bridged Networks." Under the topic "Initial proposal of a problem statement for IEEE 802.3," Specht presented Slide 47 of "Tutorial: Cut-Through Forwarding (CTF) in Bridges and Bridged Networks" https://mentor.ieee.org/802.1/dcn/21/1-21-0024-00-ICne.pdf, which was discussed in detail. Specht then presented "CTF: Draft IEEE 802 Tutorial request" https://mentor.ieee.org/802.1/dcn/21/1-21-0025-00-ICne.pdf. This led to discussion of the content and also of the form of future pre-standardization activities and later standardization activities. It was agreed (informally, none dissenting) that Specht would revise this document, according to discussion, as https://mentor.ieee.org/802.1/dcn/21/1-21-0025-01-ICne.pdf.

Disposition: It was noted that that further contributions toward https://mentor.ieee.org/802.1/dcn/21/1-21-0024-00-ICne.pdf are welcome and that slide 47 is not a complete problem statement regarding IEEE 802.3. It was agreed that further development of https://mentor.ieee.org/802.1/dcn/21/1-21-0025-01-ICne.pdf is welcome and that direct participation of 802.3 subject matter experts would improve the program.

- 8. Nendica organization. The Nendica Chair reviewed the schedule in the "Draft Nendica ICAID Renewal Plan" https://mentor.ieee.org/802.1/dcn/21/1-21-0013-00-ICne.pdf and presented "Draft Nendica ICAID Renewal" https://mentor.ieee.org/802.1/dcn/21/1-21-0011-01-ICne.docx toward meeting that schedule. The 802.1 Chair noted his comments. Disposition: The Nendica Chair agreed to post https://mentor.ieee.org/802.1/dcn/21/1-21-0011-01-ICne.docx addressing comments from the 802.1 Chair. It was agreed (informally, none dissenting) that further comments and contributions on this topic are welcome.
- 9. Future Meetings. The Nendica Chair noted Nendica meetings are scheduled on Thursdays 09:00-11:00 ET, with the next meeting one week hence.
- 10. Any Other Business. No other business was discussed by Nendica in this session.

11:00 ET adjournment

7 YANGsters

Between this session and the preceding session, YANGsters held electronic meetings whose minutes are incorporated to these session minutes by reference as follows:

- Minutes of the YANGsters meeting held 2021-03-23 10:00 11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&O=A&P=129493
- Minutes of the YANGsters meeting held 2021-03-30 10:00 11:00 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&O=A&P=130437
- Minutes of the YANGsters meeting held 2021-04-06 10:00 11:01 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&O=A&P=136004

- Minutes of the YANGsters meeting held 2021-04-27 10:00 11:03 ET https://listserv.ieee.org/cgi-bin/wa?A2=ind21&L=STDS-802-1-MINUTES&O=A&P=159956

The table in section 1 reflects, for all meetings held in this session, the attendance and affiliation of participants who registered their attendance in IMAT.

Call to order May 6, 2021 at 14:00 ET by Scott Mansfield, the YANGsters Chair, who presided. Stephan Kehrer, the YANGsters Secretary, wrote the minutes.

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-0321-v01.pdf thereby providing the information on slide 2 of this presentation.

2. Approval of agenda. The YANGsters Chair presented the agenda in https://1.ieee802.org/may-2021-interim-session-electronic-yangsters-agenda/.

Disposition: the agenda was reviewed, discussed, and updated as recorded by these minutes.

3. Introduction to YANGsters. The YANGsters Chair presented:

https://1.ieee802.org/yangsters/,

https://1.ieee802.org/yangsters/yangsters-call-information/.

https://1.ieee802.org/category/yangsters-agenda/, and

https://1.ieee802.org/yangsters/yangsters-guidelines/yangsters-faq/.

Disposition: for information.

- 4. Achievements since last Plenary meeting. The YANGsters Chair provided an overview over the topic.
 - Several topics have been discussed since the March 2021 plenary session. The focus was on the following:
 - Provide guidance on how to write YANG modules in a uniform way across 802.1 standards.
 - Provide guidance on how to roll up standards containing YANG modules.

Disposition: for information.

- 5. P802.1Q-Rev rollup of YANG-related comments. Mick Seaman, P802.1Q-Rev editor, introduced the topic.
 - Renumbering of P802.1Q-Rev clauses/subclauses:
 - Clause 47 is currently marked "Reserved for future use" in P802.1Q-Rev.
 - This numbering gap needs to be avoided so that clause numbering is consecutive at publication.
 - The same is true for some subclauses in clause 48.
 - It is currently unclear how 48.2, 48.3, 48.4, 48.5, and 48.6 can be aligned to each other.
 - The main reason this is unclear is the YANG data scheme trees provided in 48.5.
 - The trees do not exist for types modules therefore alignment between 48.5 and 48.6 is difficult.
 - Several options on how to renumber were discussed.
 - There currently are empty or unused YANG modules. It needs to be discussed what to do with these modules.
 - Security considerations text currently exists per module.
 - It was discussed that the security considerations should be done per model instead of per module.
 - A structure for clause 48 of P802.1Q-Rev was discussed and tentatively agreed pending further contribution(s) to assist the work of the P802.1Q-Rev ballot resolution committee.

Disposition: agreed (informally, none dissenting) to invite contribution(s) proposing and explaining how to possibly restructure P802.1Q-Rev clause 48.

- 6. Status of YANG projects. Discussion was deferred by lack of time.
- 7. On-going Work Status: YANG Language Enhancements (for example string equivalence). Discussion was deferred by lack of time.
- 8. On-going Work Status: YANG Packages/Module Tags. Discussion was deferred by lack of time.
- 9. Tutorials/Guideline Updates: Yanglint and xpath examples. Discussion was deferred by lack of time.
- 10. Review Issues List. Discussion was deferred by lack of time.
- 11. Open Discussion: What is new, upcoming, or topics that need investigation in the YANG area? Discussion was deferred by lack of time.
- 12. Format of reference statement text in YANG modules. Discussion was deferred by lack of time.
- 13. UML-like diagrams and the mapping of datatypes used in the diagrams. Discussion was deferred by lack of time.
- 14. YANG support for P802.1DC. Norman Finn, P802.1DC editor, introduced the topic.
 - YANGsters are encouraged to approach the P802.1DC editor to provide support in creating the YANG module(s) for the project.

Disposition: for information.

- 15. Any Other Business. No other business was discussed by YANGsters in this session.
- 16. Future meetings. YANGsters meet next during the electronic meeting on May 11, 2021.

16:00 ET adjournment

8 Next Session

July 12-20, 2021 electronic plenary session.