Approved IEEE 802.3cx Improved PTP Timestamping Accuracy (ITSA) Task Force Meeting Minutes

May 25, 2021, Virtual Meeting

- Minutes prepared by Silvana Rodrigues and Steve Gorshe

Agenda and General Information Presentation by Steve Gorshe, ITSA Task Force Chair

- Steve Gorshe, meeting and task force chair, begins presenting the Agenda and General Information slides
- Since this was a virtual meeting, the attendees were not asked to introduce themselves with their affiliations. Instead, the Chair asked them to identify their affiliation in their WebEx user names.
- **Agenda** – Chair presents the agenda for the meeting and asked if anyone had comments, additions or objections for the meeting agenda per slide 2 of the following presentation: https://www.ieee802.org/3/cx/public/may21/agenda_b_3cx_0521.pdf
- Chair put forward motions for the Task Force to approve the agenda:

Motion #1: Approve the agenda of the current meeting:

- Requires >50% (Procedural)
- Moved by : Marek Hajduczenia Seconded by: Theo Brillhart
- PASSES with no objections received
  Meeting agenda posted here:
  https://www.ieee802.org/3/cx/public/may21/agenda_b_3cx_0521.pdf
- **Task Force Decorum** - Chair reviewed slide and noted that there should be no recording or photography without permission. Chair asked if anyone was attending from the press including those who would run a public blog on this meeting – none responded.
- **Goals for Meeting** – Chair presented the goals with no comment from attendees
- **Big Ticket Items** – Chair presented the Big-Ticket items aligned to goals with no comments from attendees
- **Reflector and Web** – Chair presented the Task Force reflector and web information. All in attendance were invited to subscribe for Task Force communications and updates.
- **Task Force Private Area** – Chair reminded members of the Task Force Private Area, presented the URL to that private area and presented both the Username and Password to gain access to the URL. Chair also noted that the general IEEE 802.3 Username and Password can be used to access the URL.
- **Ground Rules** – Chair review the meeting ground rules based on IEEE 802.3 Rules.
- **Attendance** – Attendees were reminded of the IEEE 802.3 attendance procedures and asked to follow the link to those procedure for further information. IMAT tool was used for this meeting, a password was provided by the Chair.
- **IEEE Structure and Important Bylaws & Rules** – Chair review the IEEE SA structure including a review of how 802.3 WG and the Task Force is located within the structure. The important bylaws and rules were pointed out for all to refer is needed or of interest.

- **IEEE 's Patent Policy and IEEE WG Meeting Guidelines (Slides 12-17 or IEEE SA Slides 0-4)** – All 5 IEEE SA slides were presented with the Chair highlighting that
  1. IEEE's patent policy is described in Clause 6 of the IEEE SA Standards Board Bylaws where they can be referred to and that the IEEE SA Standards Board Patent Committee Administrator may be contacted with further questions
  2. Early identification of patent claims which may be essential for the use of standards under development is strongly encouraged
  3. There may be Essential Patent Claims of which IEEE is not aware. Additionally, neither IEEE, the WG, nor the WG Chair can ensure the accuracy or completeness of any assurance or whether any such assurance is, in fact, of a Patent Claim that is essential for the use of the standard under development.
  4. Participants have a duty to inform the IEEE of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
- The Chair provided an opportunity for participants to identify patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) of which the participant is personally aware and that may be essential for the use of this standard.
  - No such claims were bought to the Chair's attention.
- The chair also reminded attendees of the IEEE copyright policy.
- **Participation in IEEE 802 Meetings** – Chair review the slide
- **Overview of IEEE802.3 Standard Process (5 slides)** – Chair reviewed the standards process slides. Chair highlighted that the ITSA group had completed the Study Group Phase and moved into the Task Force Proposal Selection Phase on slide 2 of 5 of the Process slides.
- **Liaisons and Communications** – Chair noted that the P802.3cx liaison to ITU-T Q13/15 was presented at their April 2021 meeting.
- **Action Items** – There were none to review for this meeting.
- **Task Force Approved Project Documents** – Task Force project documents remain unchanged and were links to the documents were provided.
- **Task Force Objectives** – Chair restated the adopted Task Force objectives.
- **Task Force Timelines** – Chair noted that the timeline has been updated and a motion will be carried at this meeting to approve the new timeline.

  Previous Meeting Minutes - Meeting minutes held on March 10, 2021 (virtual call) are here: https://www.ieee802.org/3/cx/public/march21/Unconfirmed_Meeting_Minutes_ITSA_802d3cx_0321.pdf

  Chair asked if any attendee had any comment regarding the March 10, 2021 Meeting Minutes. None were received

- Chair put forward motions for the Task Force to approve the previous meeting minutes.

Motion #2: Approve the meeting minutes of March 10, 2021:

https://www.ieee802.org/3/cx/public/march21/Unconfirmed_Meeting_Minutes_ITSA_802d3cx_0321.pdf

- Requires >50% (Procedural)
- Moved by : Marek Hajduczenia Seconded by: Mark Bordogna
- PASSES with no objections received

Approved meeting minutes from March 10, 2021 are officially here:

https://www.ieee802.org/3/cx/public/march21/Approved_Meeting_Minutes_ITSA_802d3cx_0321.pdf

- **Presentations** – In addition to this presentation (Agenda and General Information), other presentations are on the agenda to be reviewed. Chair introduced the presentations for the day and started the "D0.5 Comments and Output Documents" agenda item.

Presentation #1 - Proposed responses to P802.3cx D0.5 Comments, Marek Hajduczenia (Editor), Charter Communications

- https://www.ieee802.org/3/cx/public/may21/802d3cx_D0_5_proposed.pdf
- The editor reviewed comment 21. The commenter (Richard Tse) clarified his comment, it was agreed in principle with the following action to Richard:
  "Action item for Richard to supply a comment against the next draft to replace any references to "block" with "word" and consider whether finer resolution (e.b. 1/64 of xMII word) may be needed."
- The editor reviewed the following comments that were accepted in principle:
  Comments 25, 27, 33, 13, 35, 36, 38, 39, 15, 21, 41, 16
  For the resolution of comment 33, it was agreed to collapse registers 3.1813.13 and 3.1813.12 into a single register.
- The editor reviewed the following comments that were accepted:
  Comments 30, 31, 32, 34, 37, 18, 19, 20, 22, 23, 24
- The editor reviewed the following comments that were rejected:
  Comments 28, 29
- There were some comments that were related to the contribution law_3cx_01_0521 "IEEE 802.3 Timestamp and data delay measurement reference points". The Chair asked the editor to have a break on the comments resolution to discuss this contribution.

Presentation #2 - IEEE 802.3 Timestamp and data delay measurement reference points, David Law, HPE

- https://www.ieee802.org/3/cx/public/may21/law_3cx_01_0521.pdf
- It proposes to allow generation of primitives based on either SFD or first symbol after the SFD
- Richard Tse stated that the proposal does not intend to change the SFD, but it allows to select the option to make the time adjustment

- David Law noted that it requires the option selected to match the option selected for the data delay measurement.
- Richard Tse stated that he suggested to replace SFD with the message timestamp (MTP in comment 14, and in that case, there is no need for the TP parameter. At this point the editor resumed the discussion on comment 14.

Presentation #3 - Proposed responses to P802.3cx D0.5 Comments, Marek Hajduczenia, Charter Communications

- https://www.ieee802.org/3/cx/public/may21/802d3cx_D0_5_proposed.pdf
- The editor reviewed comment 14.
- David Law – How the client knows where the timestamp point is? How is that information passed across the MII between the PCS and RS? Is there a register?
- Marek Hajduczenia – Yes there is a register to indicate that. The client does have a way to know.
- David Law – Why has the MAC Merge (MM) changed?
- Richard Tse – The SFD is a different value when the MM is used, and if you use the SFD, you do not need this parameter. It needs to indicate which SFD value you are looking for.
- David Law – You are making existing implementation not compliant. Existing implementation does not support MTP (message timestamp point).
- Marek Hajduczenia – Are we accepting David proposal?
- David Law – It is merge between my proposal and the proposal in Comment 14
- It was agreed to use MTPS for message timestamp point selection
- The editor reviewed the following comments that were accepted in principle: Comments 14, 40, 15, 16, and 26
- The editor reviewed comment 42
- David Law – These primitives are between the RS and the MAC. There is no physical interface defined for those.
- Richard Tse – We understood the problem, but we did not want to change the MII
- David Law – You need to change the MII to get the proper interface.
- Andras de Koos – It is only possible to exchange the information if you use a proprietary interface
- David Law – I think there is a need to modify the MII, just add the signals to MII
- Marek Hajduczenia – Any attempts to modify the MII in the past was shot down
- David Law – But, if you do not do that, then the only way to implement this is in a proprietary way
- Steve Trowbridge – We will not have a standardized way of doing it
- David Law – For the high speed rates, we can just modify the MII.
- Jingfei Lv – The TSN group in 802.1 is going to use the lower rates of 100M and 1G, and they need high performance for the lower rates
- David Law – For the lower rates it could be a problem
- Richard Tse – Not really, these primitives are not necessary for the lower rates, as they do not have AMs or lane striping. Also, there is no need to have idle insertion or deletion for 100M and 1G. You can run the MAC on the rx clock.

- David Law – It is an implementation choice. If you want to do high accuracy for the lower speed rates, then you have to do a specific implementation.
- David Law – For high speed rates, it is better to modify the MII.
- David Law – I looked at the PAR and it is very generic, so modifying the MII is within the scope of the PAR.
- The Chair intervened and propose to have a break on the comment resolution and invited members to bring contribution to solve this problem.

Presentation #4 - Proposed Text for Annex 90A, Richard Tse, Microchip, Steve Gorshe, Microchip, and Marek Hajduczenia, Charter Communications

- https://www.ieee802.org/3/cx/public/may21/tse_hajduczenia_3cx_01a_0521.pdf
- It proposes an informative Annex to clarify 802.3cx specifications
- Andras de Koos – Should we add more details for idle insertion/removal, as some of these numbers in Table 90A-1 shows very high numbers and they do not happen very often.
- Richard Tse – We can add some comments to clarify these further.
- Steve Trowbridge – Is the applicability for these high precision Ethernet rates all the way down to 10M?
- Richard Tse – The industrial automation profile being developed by IEEE 802.1 TSN needs very high accuracy and they use lower Ethernet rates. A particular implementation can avoid idle insertion/removal. If you pick some generic devices, it may not be possible to avoid these.
- Jingfei Lv – If we conclude that there is a problem for the lower Ethernet rates, then we should let 802.1 TSN knows that.
- Richard Tse – There is no problem to get high accuracy if we avoid idle insertion and removal.
- Jingfei Lv – But some PHYs will do it.
- Richard Tse – Correct, but if you want high accuracy with lower Ethernet rates, then you need to make sure that the PHY does not do idle insertion and removal. We can add some text regarding this in the next draft.
  Chair – If we agree to adopt this as a baseline, then these points can be addressed by comments.
- The Chair put forward the following motion

Motion #3: To adopt the proposed text and figures of tse_hajduczenia_3cx_01a_0521, as modified from discussion at this meeting, as a baseline for the P802.3cx annex.

- Requires >50% (Procedural)
- Moved by : Marek Hajduczenia Seconded by: Mark Bordogna
- PASSES with no objections received

Presentation #5 - Proposed responses to P802.3cx D0.5 Comments, Marek Hajduczenia, Charter Communications

- https://www.ieee802.org/3/cx/public/may21/802d3cx_D0_5_proposed.pdf
- The editor continued with comment resolution. " The editor reviewed the following comments:
  - Comments 42, 43, 45, 46. 47, 48, and 50 were accepted in principle.
  - Comments 44, 52, and 53 were accepted.
  - Comments 49 and 51 were rejected.
- The editor mentioned that there were 4 comments received after the deadline. The editor asked if there was any concern in reviewing those comments. There was no concern, and therefore the editor proceeded with the review of those comments.
- The editor reviewed the following comments that were accepted in principle: Comments 56 and 57.
- The editor reviewed comment 55 and it was accepted
- " The editor reviewed comment 54 and it was rejected
- The Chair put forward the following motion:

Motion #4: To authorize the editor to produce D1.0 on the basis of D0.5 and closed comments and the adopted annex from tse_hajduczenia_3cx_01a_0521 (per Motion 3) and begin Task Force Review.

- Requires >50% (Procedural)
- Moved by : Marek Hajduczenia Seconded by: Mark Bordogna
- PASSES with no objections received

- The Chair put forward the following motion:

Motion #5: To update the P802.3cx project timeline per slide 27 of https://www.ieee802.org/3/cx/public/may21/agenda_b_3cx_0521.pdf

- Requires >50% (Procedural)
- Moved by : Marek Hajduczenia Seconded by: Mark Bordogna

PASSES with no objections received

FUTURE MEETINGS

- The next IEEE 802.3cx meeting will be a virtual meeting on June 22, 2021 at 1PM EDT.

New Business

- There was no new business

Adjourn

- TF Chair proposed adjourning the meeting with the agenda having been completed.
- The Chair put forward the following motion:

Motion #7: Adjourn the meeting

- Moved by : Marek Hajduczenia Seconded by: Mark Bordogna
- Requires >50% approval
- PASSES with no objections received

Attendance

IEEE 802.3cx Improving PTP Timestamping Accuracy TF IEEE 802.3cx Virtual Interim meeting, May 2021	May 25th				

By choosing to attend and sign in to this meeting, you acknowledge and agree that your personal data will be documented for IEEE standards development purposes to comply with policies and procedures, legal and accreditation requirements, and evaluation of patent claims by patent offices. See Front Page for additional information.

Last Name	First Name	Employer	Affiliations	Tues.				
Agarwal	Shubham	Cadence	Cadence	x				
Bordogna	Mark	Intel	Intel	x				
Brillhart	Theo	Fluke	Fluke	x				
Carlson	Steve	High-Speed Design	High-Speed Design	x				
Carty	Clark	Cisco	Cisco	x				
Chacon	Geoffrey	Synopsys	Synopsys	x				
Chuang	Keng Hua	HPE	HPE	x				
de Koos	Andras	Microchip	Microchip	x				
Dror	Nitzan	Marvell	Marvell	x				
Fan	Dawei	Huawei	Huawei	x				
Gorshe	Steve	Microchip	Microchip	x				
Guendert	Steve	IBM	IBM	x				
Hajduczenia	Marek	Charter	Charter	x				
He	Xiang	Huawei	Huawei	x				
Huber	Tom	Nokia	Nokia	x				
Huh	Woojung	Microchip	Microchip	x				
Jones	Peter	Cisco	Cisco	x				
Kabra	Lokesh	Synopsis	Synopsis	x				
Kim	Yong	Tenstorrent	Tenstorrent	x				
Laubach	Mark	Independent	Independent	x				
Law	David	HPE	HPE	x				
Lv	Jingfei	Huawei	Huawei	x				
McKeown	Shane	Calnex	Calnex	x				
Nataraja	Sriram	Cisco	Cisco	x				

Nering	Ray	Cisco	Cisco	x				
Nicholl	Gary	Cisco	Cisco	x				
Nicholl	Shawn	Xilinx	Xilinx	x				
Nikolich	Paul	802 Chairman	802 Chairman	x				
Ofelt	David	Juniper Networks	Juniper	x				
Opsasnick	Eugene	Broadcom	Broadcom	x				
Parkholm	Ulf	Ericsson	Ericsson	x				
Pohl	Christopher	Beckhoff Automation	Beckhoff Automation	x				
Powell	Bill	Independent	Independent	x				
Ren	Hao	Huawei	Huawei	x				
Rodrigues	Silvana	Huawei	Huawei	x				
Sambasivan	Sam	AT&T	AT&T	x				
Sivakolundu	Ramesh	Cisco	Cisco	x				
Thompson	Geoff	GraCaSI S.A./ Independent	GraCaSI S.A./ Independent	x				
Trowbridge	Steve	Nokia	Nokia	x				
Tse	Richard	Microchip	Microchip	x				
Wang	Xinyuan	Huawei	Huawei	x				
Withey	James	Fluke	Fluke	x				
Wong	Denny	Xilinx	Xilinx	x				