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

July 22, 2020, Virtual Meeting

- Minutes prepare 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
- Chair did a roll call of the virtual meeting attendees asking each of them to present themselves with their company affiliation (any new attendees were also asked to present themselves)
- **Agenda** – Chair presents the agenda for the meeting and asked if anyone had comments, additions or objections for the meeting agenda.
  - Chair put forward a motion for the Task Force to approve the agenda

Motion #1: Approve the agenda per slide 2 of the following presentation:

http://www.ieee802.org/3/cx/public/july20/agenda_3cx_0720.pdf

- *Requires >50% (Procedural)*
- *Moved by : Steve Trowbridge Seconded by: David Olef*
- *PASSES with no objections received*
  - **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, but no password was required.
  - **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 12-16 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.
  - **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 2of5 of the Process slides.
  - **Liaisons and Communications** – There were none to review for this 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 presented the timeline. He asked for comments during the meeting, no comments were made by TF members in attendance. Then the Chair specifically asked David Law for his input on the timeline. David Law confirmed that this is a reasonable timeline.
  - Chair put forward a motion for the Task Force to adopt the timeline

Motion #2: Adopt the timeline per slide 27 of the following presentation:

http://www.ieee802.org/3/cx/public/july20/agenda_3cx_0720.pdf

- *Requires >50% (Procedural)*
- *Moved by : Silvana Rodrigues Seconded by: Ted Sprague*
- *PASSES with no objections received*
  - **Previous Meeting Minutes** - The chair mentioned that no comments had been received regarding the meeting minutes from the last meeting (http://www.ieee802.org/3/cx/public/may20/Unconfirmed_Meeting_Minutes_ITSA_802d3cx_0520.pdf) held on May 12,2020 (virtual call). Chair asked if any current attendees had comments regarding the May 12, 2020 Meeting Minutes. None were received
- Chair put forward a motion for the Task Force to approve the previous meeting minutes.

Motion #3: Approve the Meeting Minutes from the May 12, 2020 virtual meeting:
http://www.ieee802.org/3/cx/public/may20/Unconfirmed_Meeting_Minutes_ITSA_802d3cx_0520.pd

Requires >50% (Procedural)

- *Moved by : Michael Takefman Seconded by: Clark Carty*
- *PASSES with no objections received*

Approved meeting minutes from April20, 2020 are officially here
http://www.ieee802.org/3/cx/public/may20/Approved_Meeting_Minutes_ITSA_802d3cx_0520.pdf

- **Presentations** – In addition to this presentation (Agenda and General Information), 3 other presentations and one spreadsheet are on the agenda to be reviewed. Chair introduced the presentations for the day and started the presentation agenda item.

Presentation #1 - Summary of Contributed Solutions, Richard Tse, Microchip Technologies

- http://www.ieee802.org/3/cx/public/july20/tse_3cx_01_0720.pdf
- It highlights the main issues and the proposals made in previous meetings.
- Slides 6, 7 and 8 give a summary of the 3 solutions proposed for Multi-PCS lane distribution
- There was a question about on how to prove compliance to these solutions, and if there was a contribution to address compliance. No contribution has been put forward to address compliance, and this is already a concern with the current standard.
- There were discussions about Solution #3 and how it is supported. Clause 90-7 was mentioned and Solution #3 alters the timestamp reference point from what is in clause 90.
- There was a discussion about Solution #2 and how it is supported, this solution is in line with the current reference point in Clause 90.

Presentation #2 - Path delay variance from multi PCS lane distribution, Richard Tse, Microchip Technologies

- http://www.ieee802.org/3/cx/public/july20/tse_3cx_02_0520.pdf
- Slides 3, 4, 5 and 6 were presented to give more details on the proposed 3 solutions.
- Then the author presented the spreadsheet

Presentation #3 - Multilane Timestamp Error Analysis Spreadsheet, Richard Tse, Microchip Technologies

- http://www.ieee802.org/3/cx/public/july20/tse_multilane_TE_analysis.xls
- The author presented the spreadsheet in details showing the different options
- There are 3 Tx options and 2 Rx options. The Tx option and the Rx option need to be compatible, otherwise it will result in time error
- There were discussions about option C and there is a need to define the split between Rx and Tx, not a fixed value, but a percentage that is attributed to the RX and to the TX. It was noted that a similar approach was taken in clause 90 for FEC.

- There were discussions about option A and B. These solutions seem to be in line with the current reference point in Clause 90. There was also discussion about the potential challenges of implementing these options in complex PHYs.
- There was a discussion about the fiber delay, as the delays in the fibers are different.

Presentation #4 - Improving PTP Timestamping Accuracy on Ethernet Interfaces, Xiang He, Huawei

- http://www.ieee802.org/3/cx/public/july20/he_3cx_01_0520.pdf
- This document was not presented, as it was already covered by Option B in the Microchip presentation.

- TF Chair proposed the following Straw Poll:

- ***Straw Poll #1:***
- *Approach #1: TX and RX do accurate per-lane TS compensation*
  - *6*
- *Approach #2: TX and RX use a constant TS compensation due to the sum of the end-to-end delay being constant (e.g., like with FEC)*
  - *12*
- *Approach #2: need more information*
  - *0*

FUTURE MEETINGS

- The next IEEE 802.3 meeting will be a virtual meeting, scheduled for the week of September 21
- .

Adjourn

- TF Chair proposed adjourning the meeting with the agenda having been completed.

- ***Motion #4: Adjourn the meeting***
- *Moved by: Silvana Rodrigues, Second by: Denis Beaudoin*
- *Requires >50% approval*
- *PASSES with no objections received*

Attendance

IEEE 802.3cx Improving PTP Timestamping Accuracy TF IEEE 802.3cx Virtual Plenary July 2020				Day 1 July 22				
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	Wed.				
Baggett	Tim	Microchip	Microchip	x				
Beaudoin	Denis	Texas Instruments	Texas Instruments	x				
Bordogna	Mark	Intel	Intel	x				
Brillhart	Theo	Fluke	Fluke	x				
Bruckman	Leon	Huawei	Huawei	x				
Carty	Clark	Cisco	Cisco	x				
Chuang	Keng Hua	HPE	HPE	x				
De Andrea	John	II-VI/Finisar	II-VI/Finisar	x				
de Koos	Andras	Microchip	Microchip	x				
Fan	Dawei	Huawei	Huawei	x				
Gorshe	Steve	Microchip	Microchip	x				
Guendert	Steve	IBM	IBM	x				
Gustlin	Mark	Cisco	Cisco	x				
Hajduczenia	Marek	Charter	Charter	x				
He	Xiang	Huawei	Huawei	x				
Kim	Yong	Axonne	Axonne	x				
Law	David	HPE	HPE	x				
Lv	Jingfei	Huawei	Huawei	x				
Maguire	Val	Siemon	Siemon	x				
Nataraja	Sriram	Cisco	Cisco	x				
Nicholl	Shawn	Xilinx	Xilinx	x				
Ofelt	David	Juniper Networks	Juniper	x				
Parkholm	Ulf	Ericsson	Ericsson	x				
Piehler	David	Dell	Dell	x				

Potterf	Jason			x				
Powell	Bill	Nokia	Nokia	x				
Rodrigues	Silvana	Huawei	Huawei	x				
Sambasivan	Sam	AT&T	AT&T	x				
Shah	Anup	-Mentor	-Mentor	x				
Sprague	Ted	Infinera	Infinera	x				
Takefman	Michael	Inphi	Inphi	x				
Tooyserkani	Pirooz	Cisco	Cisco	x				
Trowbridge	Steve	Nokia	Nokia	x				
Tse	Richard	Microchip	Microchip	x				
Wang	Xinyuan	Huawei	Huawei	x				
Wang	Roy	HPE	HPE	x				
Welch	Jim	Telestream, LLC-	Telestream, LLC-	x				
Withey	James	-Fluke	-Fluke	x				