

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

April 20, 2020, Virtual Meeting

- Minutes prepared by Dino Pozzebon and Steve Gorshe

ITSA Task Force meeting convened on Monday April 20, 2020 at 10:15AM (EDT) by David Law, IEEE 802.3 Working Group Chair.

- David Law communicated that the ITSA Study Group had been approved to become the ITSA Task Force and move into the Task Force phase of the IEEE 802.3 Standard's Process.
- David appointed Dino Pozzebon to be the Recording Secretary of the ITSA Task Force.
- David Law announced his intention to confirm Steve Gorshe as the ITSA Task Force chair and prior to doing so asked Steve to remove himself from the meeting.
- Steve disconnected from the conference call.
- David put forward the following motion to the Task Force and asked attendees to voice any objectives against the motion via voice or Webex chat.
 - **Motion #1: Confirm Steve Gorshe as IEEE 802.3cx Improved PTP Timestamping Accuracy (ITSA) Task Force Chair**
 - Moved by: *Merek Hajduczenia*, Second by: *Steve Trowbridge*
 - Requires >75% approval
 - PASSES with no objections received
- Steve was then allowed to rejoin the meeting and congratulated for being appointed ITSA TF chair.
- Steve Gorshe takes over as meeting chair and newly appointed 802.3cx Task Force chair.

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

- Steve Gorshe begins presenting the [Agenda and General Information](#) slides
- Chair asks all attendees to email him their name and affiliation for the meeting minutes attendees log. Chair also 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 from the presentation and puts forward a motion to approve the meeting agenda
 - **Motion #2: Approve agenda for meeting as presented in [Agenda and General Information](#)**
 - Requires >50% (Procedural)
 - 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
 - Consider potential solutions for the timestamping issues that have been identified to date

- Discuss solution approaches (E.g., modify existing 802.3 clause text, introduce a new clause, introduce informative annex(es))
- Begin adopting proposed baseline text
- Lay the groundwork for the next meeting
- **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 pointed out that the Private Area for the Task Force had been created, 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. The URL can also be accessed with the general 802.3 username and password.
- **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 NOT used for this meeting.
- **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 brought 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 Comment 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** – None were presented. One goal of this meeting is to discuss if a timeline can be adopted.
- **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/ITSA/public/nov19/Confirmed%20Meeting%20Minutes_ITSA_SG_1113.pdf) held on January 24, 2020 in Geneva, Switzerland. Chair asked if any current attendees had comments regarding the Jan 24th Meeting Minutes. None were received
 - Chair put forward a motion for the Task Force to approve the previous meeting minutes.
 1. **Motion #3: Approve the Meeting Minutes from the January 24, 2020, Geneva, Switzerland meeting**
http://www.ieee802.org/3/ITSA/public/nov19/Confirmed%20Meeting%20Minutes_ITSA_SG_1113.pdf
 2. *Requires >50% (Procedural)*
 3. *PASSES with no objections received*

Approved meeting minutes from Jan 24.2020 are officially here
http://www.ieee802.org/3/ITSA/public/jan20/Approved_Meeting_Minutes_ITSA_SG_0120.pdf
- **Presentations** – In addition to this presentation ([Agenda and General Information](#)), 4 other presentations are on the agenda to be reviewed. Chair introduced the presentations for the day and started the presentation agenda item.

Presentation #1 - Contribution to 802.3cx: Clarifications on Timestamp Impact due to Codeword Marker Insertion/Deletions, Mark Bordogna, Intel

- http://www.ieee802.org/3/cx/public/april20/bordogna_3cx_01_0420.pdf
- Slides 5 & 6 – Jan 2018 liaison response from 802.3 to ITU SG15 on timestamping errors mentions that:
 1. Alignment Marker (AM) insertion as specified in 802.3, could be a source of timestamping error but that there are known compliant implementations that do not introduce any error due to AM insertion.
- Slide 6 & 7 – General agreement that both Alignment Marker(AM) and Codeword Marker (CWM) insertion have the same timestamping impacts and that both terms should be referred to in any updated text and/or proposals.
- Slide 8 – Point was raised that although the proposed text to CL90.7 paragraph 2 makes logical sense the current layered model of the MAC, RS and PCS/FEC layers do not provide any means to implement such a proposal. Question was asked if the interface between the layers should be modified to explicitly provide an implementation between layers to implement the suggested text? Question was tabled as this was to be addressed in [tse_3cx_03_0420.pdf](#)

Presentation #2 - Timestamp Inaccuracy Due to Idle Insert/Delete for AMs, Richard Tse, Microchip Technologies

- http://www.ieee802.org/3/cx/public/april20/tse_3cx_03_0420.pdf
- Jumped into slide 7 with focus on AM insertion and AM related IDLE insertion/removal
- Slides 10.-13 – Proposal to add TSSI primitives providing indication of AM and IDLE events (related to AM/CWM) to the Time Sync client such that the text on slide 9 could be supported.
- It was questioned why AM insertion/removal primitives would be needed since the AM insertion/removal events are expected to be handle like FEC parity insertion/removal. One reply was it would be needed to support the two possible implementations mention in the liaison letter from [bordogna_3cx_01_0420.pdf](http://www.ieee802.org/3/cx/public/april20/tse_3cx_01_0420.pdf) clarifying that some implementations introduce no timestamping inaccuracy due to markers. There was no conclusion on any of these primitives.

Presentation #3 - Timestamp Inaccuracy Due to Different Reference Points, Richard Tse, Microchip Technologies

- http://www.ieee802.org/3/cx/public/april20/tse_3cx_01_0420.pdf
- Slide 3.&.4 – 802.3 2018 CL90.7 packet SFD timestamp reference point mismatches CL7.3.4.1 of IEEE 1588v2 and CL11.3.9 of IEEE 802.1AS, which CL90.7 is intendent to support. ITSA TF will need to address this gap with high precision PTP. Presentation proposed that task force target revising 802.3 CL90 to align it with IEEE 1588 and 802.1AS for high precision PTP.
- Although required, concern was voiced that this would lead to a “pre” and “post” 802.3cx definition of the timestamp reference point around the packet SFD.
 - Comment was made that an auto negotiation would be nice is the proposal was adopted, however there is no 802.3 auto-negotiation mechanism available with optical PHYs.
 - Comments made that 1588 and 802.1AS could be leveraged to provide auto negotiation with PTP packet TLVs. Concerns voiced that both of those standards would not be able to specify this functionality any time soon.

Presentation #4 - Path delay variance from multi-PCS lane distribution, Richard Tse, Microchip Technologies

- http://www.ieee802.org/3/cx/public/april20/tse_3cx_02_0420.pdf
- Slide 3.-7 - Background on how a compliant 802.3 implementation may lead to different PCS layer delays (xMII to MDI) conditional on the packet SFD codeword's allocation to N possible PCS virtual lanes, after transmitter lane distribution and receiver lane merging. Three transmitter implementations and 2 receiver implementations are provided as examples.
- Slide 8 – Two possible methods on how to address the problem.
- Slide 11 – Presenter questioned what the intent of CL90.3. Some discussion on this question with attendees requesting to think about this away from the meeting.

- There was some discussion at to whether the current text in CL90 regarding first departing and last arriving PCS lane already answers that question and whether that test was interpreted to only include the deskew FIFO or delays all the way to/from the xMII.

No decisions were taken regarding either proposed Method.

FUTURE MEETINGS

- Chair reviewed future meetings proposal with the group. As with other IEEE 802.3 Task Force groups, P802.3cx will use virtual meetings until face-to-face meetings are possible again.
- Tentatively the next opportunity looks to be in mid-May, around the time the now-cancelled IEEE 802.3 interim meeting.

Adjourn

- TF Chair proposed adjourning the meeting with the agenda having been completed.
 - **Motion #4: Adjourn the meeting**
 - *Moved by: Steve Trowbridge, Second by: David Ofelt*
 - *Requires >50% approval*
 - *PASSES with no objections received*

Attendance

IEEE 802.3cx Improving PTP Timestamping Accuracy TF IEEE 802.3cx Virtual Interim April 2020				Day 1 April 20
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.				
Last Name	First Name	Employer	Affiliations	Mon
Bordogna	Mark	Intel	Intel	x
Carty	Clark	Cisco	Cisco	x
Hajduczenia	Marek	Charter	Charter	x
He	Xiang	Huawei	Huawei	x
Law	David	HPE	HPE	x
Nataraja	Sriram	Cisco	Cisco	x
Ofelt	David	Juniper Networks	Juniper	x
Parkholm	Ulf	Ericsson	Ericsson	x
Powell	Bill	Nokia	Nokia	x
Takefman	Michael	Inphi	Inphi	x
Trowbridge	Steve	Nokia	Nokia	x
Tse	Richard	Microchip	Microchip	x
Wong	Denny	Xilinx	Xilinx	x
Rodrigues	Silvana	Huawei	Huawei	x
Jackson	Tom	Comira	Comira	x
Wu	Youzi	Comira	Comira	x
Klaps	Bert	Intel	Intel	x
Horn	Aaron	Comira	Comira	x
Ren	Hao	Huawei	Huawei	x
Wang	Xinyuan	Huawei	Huawei	x
Gorshe	Steve	Microchip	Microchip	x
Pozzebon	Dino	Microchip	Microchip	x
Lv	Jingfei	Huawei	Huawei	x