<table>
<thead>
<tr>
<th>#</th>
<th>Comment Type</th>
<th>Suggested Remedy</th>
<th>Comment Status</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>253</td>
<td>E</td>
<td>Remove this symbol</td>
<td>A</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>291</td>
<td>E</td>
<td>Change &quot;#6&quot; to &quot;6&quot;</td>
<td>A</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>329</td>
<td>ER</td>
<td>The copyright year is wrong. This draft was produced in 2021, this apparently is not updated with the FrameMaker copyright variable.</td>
<td>A</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>254</td>
<td>E</td>
<td>2017?</td>
<td>A</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>1</td>
<td>E</td>
<td>Copyright date should be 2021</td>
<td>A</td>
<td>ACCEPT.</td>
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</table>

**Type:** TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general

**Comment Status:** D/dispatched  A/accepted  R/rejected  **Response Status:** O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn

**Sort Order:** Clause, Subclause, page, line
Approved Responses

IEEE P802.3cx D2.1 ITSA Task Force 1st Working Group recirculation ballot comments

Marris, Arthur
Cadence Design Systems

Comment Type: ER
Comment Status: A
Tidy up wording of the abstract

SuggestedRemedy

Change: "This amendment to IEEE Std 802.3-202x modifies Clause 90 and adds Annex 90A to enhance support for time synchronization protocols to provide optional sub-nanosecond reporting of the transmit and receive path delays, selection of timing reference point, and dynamic reporting of path delay variation."

To: "This amendment to IEEE Std 802.3-202x modifies Clause 90 and adds Annex 90A to enhance support for time synchronization protocols by providing options for sub-nanosecond reporting of the transmit and receive path delays, for selection of the timing reference point, and for dynamic reporting of path delay variation."

Also use this identical text to describe IEEE Std 802.3cx-202x on page 13 line 28

Response
ACCEPT IN PRINCIPLE.

See comment #346

Kabra, Lokesh
Synopsys Inc

Comment Type: E
Comment Status: A
Sentence construct does not look correct

SuggestedRemedy

Replace "modifies Clause 90 and adds Annex 90A to enhance support for time synchronization protocols to provide optional sub-nanosecond reporting of the transmit and receive path delays, selection of timing reference point, and dynamic reporting of path delay variation."

with "modifies Clause 30, Clause 45, Clause 90 and adds Annex 90A to improve accuracy of time synchronization by providing optional sub-nanosecond reporting of the transmit and receive path delays, selection of timing reference point, and dynamic reporting of path delay variation."

Response
ACCEPT IN PRINCIPLE.

See comment #346

Dawe, Piers
Nvidia

Comment Type: E
Comment Status: A
Don't hide URLs

SuggestedRemedy

Write out the URLs for the "IEEE SA myProject system" and the "Contact Us form" in clear text, ask staff to fix the master frontmatter template. Similarly for "IEEE Xplore" (at least the first time), "IEEE SA Website", "IEEE SA Patent Policy", and any more.

Response
REJECT.

Comment referred to staff for consideration. Out of scope of the WG ballot to change FM.
No changes to the draft.

Dawe, Piers
Nvidia

Comment Type: E
Physical Layer (PHY)

SuggestedRemedy

Physical Layer

Response
ACCEPT.

Wienckowski, Natalie
General Motors

Comment Type: E
The header in the ToC file needs to be updated

SuggestedRemedy

Change: Draft Amendment to IEEE Std 802.3-2018
To: Draft Amendment to IEEE Std 802.3-202x

Response
ACCEPT.
<table>
<thead>
<tr>
<th>CI</th>
<th>FM</th>
<th>SC</th>
<th>FM</th>
<th>P</th>
<th>L</th>
<th>Type</th>
<th>Status</th>
<th>Response</th>
<th>Suggested Remedy</th>
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<td>277</td>
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<td>14</td>
<td>0</td>
<td></td>
<td>E</td>
<td>A</td>
<td>ACCEPT.</td>
<td>Table of contents has a header that says this is a Draft Amendment to IEEE Std 802.3-2018.</td>
</tr>
<tr>
<td>277</td>
<td></td>
<td></td>
<td>17</td>
<td>7</td>
<td></td>
<td>E</td>
<td>A</td>
<td>ACCEPT.</td>
<td>Change header to amendment to IEEE Std 802.3-202x.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>17</td>
<td>10</td>
<td></td>
<td>E</td>
<td>A</td>
<td>ACCEPT.</td>
<td>Amendment: As on page 13: Amendment 6.</td>
</tr>
<tr>
<td>327</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td>TR</td>
<td>A</td>
<td>ACCEPT.</td>
<td>The ballot package for D2.1 is invalid (as was the ballot package for D2.0). The approved documents were not posted to the TF home web page as promised in the response to initial WG ballot comment #223. One has to assume that the draft CSD and PAR links included in the ballot announcement were approved by the EC (CSD) and SASB (PAR) without modification.</td>
</tr>
<tr>
<td>327</td>
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<td>1</td>
<td></td>
<td>ER</td>
<td>A</td>
<td>ACCEPT.</td>
<td>Post the approved PAR, CSD, and Objectives. Recirculate with approved documents pointed to in the ballot package, and or linked on the TF home page.</td>
</tr>
<tr>
<td>411</td>
<td></td>
<td></td>
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<td>1</td>
<td></td>
<td>ER</td>
<td>A</td>
<td>ACCEPT.</td>
<td>The PAR noted in the Ballot announcement is not the final approved PAR. It is only the PAR that was submitted to the 802 EC for consideration. The final approved PAR should be noted to allow judgement of the draft.</td>
</tr>
<tr>
<td>412</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td>ER</td>
<td>A</td>
<td>ACCEPT.</td>
<td>The CSD noted in the Ballot announcement is the CSD that was submitted to 802 EC for consideration and approval, but it is not the final format of the CSD.</td>
</tr>
</tbody>
</table>

**Comment Type:** TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general  
**COMMENT STATUS:** D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn  
**SORT ORDER:** Clause, Subclause, page, line
Approved Responses

IEEE P802.3cx D2.1 ITSA Task Force 1st Working Group recirculation ballot comments

<table>
<thead>
<tr>
<th>Cl</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>10</td>
</tr>
</tbody>
</table>

D'Ambrosia, John  
Futurewei, US Subsidiary off Huawei

**Comment Type**: TR  
**Comment Status**: A  
**Objectives**

This is a pile-on to comment #224. There is no way to judge this draft as there is no metric in the noted ITU-T Recommendation G.8273.2 that the draft can be judged against. The response to comment #224 states - "The goal of P802.3cx TF is to improve timestamping accuracy to allow satisfaction of ITU G.8273.2 performance targets." This statement is clearly incorrect, as there are no performance targets to be measured against. Furthermore, it states that no changes to the draft are needed. Until a clear objective is determined that can be quantifiable, this statement is incorrect. Once a quantifiable objective is determined, then the draft can be evaluated for changes.

**Suggested Remedy**

Establish an objective which is a metric that is quantifiable and can be evaluated. Once this is done the entire draft needs to be re-evaluated to ensure that a new goal has been met.

**Response**  
**Response Status**: C

See https://www.ieee802.org/3/cx/public/jan22/carlson_3cx_01.pdf, slide 3 for the updated objective, adopted per motion #4 from January 2022 meeting.

<table>
<thead>
<tr>
<th>Cl</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>303</td>
</tr>
</tbody>
</table>

Tse, Richard  
Microchip Technology

**Comment Type**: T  
**Comment Status**: A  
**abstract**

This is for text that exists in the Abstract.

The "timing reference point" is not selected by 802.3cx. It is the "data delay measurement point" which is selected by 802.3cx.

NOTE: The only use of the term "timing reference point" in 802.3 is in NOTE 1 of subclause 90.7, where its meaning is equivalent to IEEE 1588's "reference plane", which is the location in the PHY where the timestamp is meant to be captured (i.e., the MDI).

**Suggested Remedy**

Replace "timing reference point" with "data delay measurement point" in the Abstract.

**Response**  
**Response Status**: C

ACCEPT IN PRINCIPLE.

See comment #346
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Subclause</th>
<th>Page</th>
<th>Line</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Commenter</th>
<th>Comment</th>
<th>Suggested Remedy</th>
<th>Response Status</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI 00 SC 0</td>
<td>P 13 L 30</td>
<td># 304</td>
<td></td>
<td>T</td>
<td>A</td>
<td>Tse, Richard</td>
<td>Microchip Technology</td>
<td>This is for text that exists in the Introduction. The &quot;timing reference point&quot; is not selected by 802.3cx. It is the &quot;data delay measurement point&quot; which is selected by 802.3cx. NOTE: The only use of the term &quot;timing reference point&quot; in 802.3 is in NOTE 1 of subclause 90.7, where its meaning is equivalent to IEEE 1588's &quot;reference plane&quot;, which is the location in the PHY where the timestamp is meant to be captured (i.e., the MDI).</td>
<td>Replace &quot;timing reference point&quot; with &quot;data delay measurement point&quot; in the Introduction.</td>
<td></td>
</tr>
<tr>
<td>CI 30 SC 30</td>
<td>P 18 L 21</td>
<td># 348</td>
<td></td>
<td>E</td>
<td>A</td>
<td>Kabra, Lokesh</td>
<td>Synopsys Inc</td>
<td>Missing &quot;and&quot; in the list</td>
<td>Replace &quot;1800.1,&quot; with &quot;1800.1, and &quot; in lines 21-26</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>CI 30 SC 30</td>
<td>P 18 L 44</td>
<td># 413</td>
<td></td>
<td>E</td>
<td>A</td>
<td>Wienckowski, Natalie</td>
<td>General Motors</td>
<td>Delete empty pages</td>
<td>Delete pages 23, 48, and 66.</td>
<td>ACCEPT.</td>
</tr>
<tr>
<td>CI 30 SC 30</td>
<td>P 18 L 44</td>
<td># 347</td>
<td></td>
<td>E</td>
<td>A</td>
<td>Wienckowski, Natalie</td>
<td>General Motors</td>
<td>The header in the Clause 30 file needs to be updated</td>
<td>Change: Draft Amendment to IEEE Std 802.3-2018 To: Draft Amendment to IEEE Std 802.3-202x</td>
<td>ACCEPT.</td>
</tr>
</tbody>
</table>

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line
Comment Type: T | Comment Status: A | aTimeSyncCapabilityRX
For PMA/PMD, the register should be 1.1800.0 instead of 1.1800.1.
The same error exists for WIS, PCS, PHY XS, DTE XS, and TC in the following rows.

SuggestedRemedy
Change register from 1.1800.1 to 1.1800.0 for PMA/PMD.
Make similar corrections for WIS, PCS, PHY XS, DTE XS, and TC in the following rows.

Response | Response Status: C
ACCEPT.

Comment Type: E | Comment Status: A | bucket
"sum of the values of the registers" can create confusion since the two register sets (set 1 = values in ns, set 2 = sub-ns) are to be added and not the 3 registers listed below.

SuggestedRemedy
Replace "registers" with "register sets"

Response | Response Status: C
ACCEPT.

Comment Type: E | Comment Status: A | bucket
"sum of the values of the registers" can create confusion since the two register sets (set 1 = values in ns, set 2 = sub-ns) are to be added and not the 3 registers listed below.

SuggestedRemedy
Replace "registers" with "register sets"

Response | Response Status: C
ACCEPT.

Comment Type: T
This is no longer valid/applicable since 1800.15, 1800.14 bits in all MMDs are now reserved in draft 2.1.

SuggestedRemedy
Delete 30.13.1.7

Response | Response Status: C
ACCEPT IN PRINCIPLE.

See comment #294
### Approved Responses

<table>
<thead>
<tr>
<th>CI 30</th>
<th>SC 30.13.1.7</th>
<th>P 20</th>
<th>L 44</th>
<th># 294</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zimmerman, George</td>
<td>CME Consulting/ADI, APL Gp, Cisco, CommScope,</td>
<td>Comment Type TR</td>
<td>Comment Status A 30.13.1.7</td>
<td></td>
</tr>
<tr>
<td>&quot;Capable of operating according to IEEE Std 802.3-2018 Clause 90 TimeSync model&quot; the differences between the models are not defined here, and, moreover, referencing the model to 802.3-2018 not only removes the specification from this document, but removes any ability for future maintenance should it be needed. According to the behaviour, the difference appears to be whether the new options (sub-nsec accuracy) is enabled. This should be the description.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SuggestedRemedy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change &quot;according to IEEE Std 802.3-2018 Clause 90 TimeSync model&quot;, to &quot;according to IEEE Std 802.3 Clause 90 TimeSync without sub-ns-resolution data delay.&quot; Change &quot;according to IEEE Std 802.3 Clause 90 TimeSync model&quot; to &quot;according to IEEE Std 802.3 Clause 90 TimeSync with sub-ns-resolution data delay.&quot; Consider change names of APPROPRIATE SYNTAX to better reflect the function.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response ACCEPT IN PRINCIPLE.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revise aTimeSyncCapabilityType to aTimeSyncDdmpSelected defined as follows. Update Table 30-6 accordingly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aTimeSyncDdmpSelected</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATTRIBUTE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APPROPRIATE SYNTAX: An ENUMERATED VALUE that takes one of the following entries:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sfd</td>
<td>tab</td>
<td>Uses SFD as DDMP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>first-symbol-after-sfd</td>
<td>tab</td>
<td>Uses the start of first symbol after SFD as DDMP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEHAVIOUR DEFINED AS: This attribute indicates the selected DDMP.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If a Clause 45 MDIO Interface to PMA/PMD, WIS, PCS, PHY XS, DTE XS and/or TC is present, then the value stored in this attribute is calculated as follows, based on values stored in the following instantiated MDIO registers (for each MMD, in case of multiple instances).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The value of 'sfd' indicates that the registers 3.1813.13 and 5.1813.13 (see 45.2.3.69a and 45.2.5.31.1) are both set to 0.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The value of 'first-symbol-after-sfd' indicates that the registers 3.1813.13 and 5.1813.13 (see 45.2.3.69a and 45.2.5.31.1) are both set to 1.;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>CI 30</th>
<th>SC 30.13.1.7</th>
<th>P 20</th>
<th>L 1</th>
<th># 272</th>
</tr>
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<tr>
<td>Zimmerman, George</td>
<td>CME Consulting/ADI, APL Gp, Cisco, CommScope,</td>
<td>Comment Type ER</td>
<td>Comment Status A 30.13.1.7</td>
<td></td>
</tr>
<tr>
<td>Comment #221 on D2.0 said to remove references to IEEE Std 802.3-2018. This was done in Clause 45, but was missed in Clause 30.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SuggestedRemedy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change: 8023bf Capable of operating according to IEEE Std 802.3-2018, Clause 90 TimeSync model 8023cx Capable of operating according to IEEE Std 802.3, Clause 90 TimeSync model To: 8023bf Not capable of sub-ns-resolution 8023cx Capable of sub-ns-resolution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response ACCEPT IN PRINCIPLE.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See comment #294</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CI 30</th>
<th>SC 30.13.1.7</th>
<th>P 21</th>
<th>L 1</th>
<th># 235</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zimmerman, George</td>
<td>CME Consulting/ADI, APL Gp, Cisco, CommScope,</td>
<td>Comment Type TR</td>
<td>Comment Status D 30.13.1.7</td>
<td></td>
</tr>
<tr>
<td>Bits x.1800.15 and x.1800.14 (x = 1, 2, 3, 4, 5, and 6) are reserved bits. I believe bits .2 and .3 are intended.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SuggestedRemedy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change x.1800.15 and x.1800.14 to x.1800.3 and x.1800.2 (x = 1, 2, 3, 4, 5, 6) on lines 1 and 4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposed Response PROPOSED ACCEPT.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>See comment #294</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 30.13.1.7

**Comment**
The register bits X.1800.15 and X.1800.14 were removed in this draft. The 802.3bf and 802.3cx modes in subclause 30.13.1.7 now need to be based on other registers.

**Suggested Remedy**
The 802.3bf and 802.3cx modes could be based on the following registers:
- all the fine resolution path data delay ability registers in the PMA/PMD, WIS, PCS, PHY XS, DTE XS, and TC
- first symbol after SFD data delay measurement point ability registers in the PCS and DTE XS
- multilane support register in the PCS
- TX/RX_NUM_UNIT_CHANGE support register in the PCS

Then:
- 802.3bf TimeSync model is supported if the OR of the registers listed above is equal to FALSE.
- 802.3cx TimeSync model is supported if the OR of the registers listed above is equal to TRUE.

**Response**
ACCEPT IN PRINCIPLE.

See comment #294

---

### 45.2.1

**Comment**
last row in Table 30-6 redundant if above comment is accepted

**Suggested Remedy**
Delete last row of Table 30-6

**Response**
ACCEPT IN PRINCIPLE.

See comment #294
<table>
<thead>
<tr>
<th>Cl</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Response</th>
<th>Response Status</th>
</tr>
</thead>
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<tr>
<td>45</td>
<td>45.2.1.175</td>
<td>24</td>
<td>28</td>
<td>E</td>
<td>A</td>
<td>bucket</td>
<td>C</td>
</tr>
<tr>
<td>Kabra, Lokesh</td>
<td>Synopsys Inc</td>
<td>typo error in paragraph;</td>
<td>Replace &quot;transmit data delay&quot; with &quot;transmit path data delay&quot;; Replace &quot;receive data delay&quot; with &quot;receive path data delay&quot;;</td>
<td>ACCEPT.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>45.2.1.175</td>
<td>24</td>
<td>29</td>
<td>T</td>
<td>A</td>
<td>bucket</td>
<td>C</td>
</tr>
<tr>
<td>Zimmerman, George</td>
<td>CME Consulting/ADI, APL Gp, Cisco, CommScope,</td>
<td>&quot;(in ns-resolution registers 1.1801 through 1.1804 and, separately, in sub-ns-resolution registers,&quot; makes it appear that the name of the registers is &quot;ns-resolution&quot; and &quot;sub-ns-resolution&quot; when, in fact, that isn't the name. this needs to be reworded more clearly. Note - this same text shows up twice in this subclause and then later in 45.2.2.20, 45.2.4.28, 45.2.5.28, and 45.2.6.14. The text in the tables is a bit clearer, so perhaps it is just the hyphenation and the statement that the values are &quot;in registers&quot; would clarify...</td>
<td>SuggestedRemedy</td>
<td>Suggest, change &quot;(in ns-resolution registers 1.1801 through 1.1804 and, separately, in sub-ns-resolution registers 1.1809)&quot; to &quot;(in ns resolution in registers 1.1801 through 1.1804 and, separately, in sub-ns resolution in registers 1.1809).&quot; and similar in the other sections.</td>
<td>ACCEPT.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>45.2.1.175</td>
<td>24</td>
<td>43</td>
<td>E</td>
<td>A</td>
<td>bucket</td>
<td>C</td>
</tr>
<tr>
<td>Dawe, Piers</td>
<td>Nvidia</td>
<td>In the text &quot;with sub-ns-resolution in&quot;, sub-ns-resolution is not a compound adjective, but a compound adjective and a noun.</td>
<td>SuggestedRemedy</td>
<td>Remove the second hyphen: &quot;with sub-ns resolution&quot;. Similarly at lines 45, 48, 50, 45.2.2.20 and 45.2.3.67</td>
<td>ACCEPT.</td>
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<td>Tse, Richard</td>
<td>Microchip Technology</td>
<td>The PMA/PMD fine resolution Tx/Rx path data delay capability register bit names were appended with the word &quot;ability&quot; in the last WG ballot comment resolution. The normal resolution PMA/PMD Tx/Rx path data delay capability register bit names should likewise be appended with the word &quot;ability&quot; to make them consistent.</td>
<td>SuggestedRemedy</td>
<td>Change &quot;TimeSync transmit path data delay&quot; to &quot;TimeSync transmit path data delay ability&quot;. Change &quot;TimeSync receive path data delay&quot; to &quot;TimeSync receive path data delay ability&quot; Also make this change for WIS, PCS, PHY XS, DTE XS, and TC.</td>
<td>ACCEPT.</td>
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<td>Kabra, Lokesh</td>
<td>Synopsys Inc</td>
<td>Inclusion of &quot;Fine resolution path delay registers&quot; redundant as they are part of TimeSync path delay register set</td>
<td>SuggestedRemedy</td>
<td>Delete &quot;and fine resolution transmit path data delay&quot;</td>
<td>ACCEPT.</td>
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<td>C</td>
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<td>Dawe, Piers</td>
<td>Nvidia</td>
<td>Style guide: use the same name for something, every time. &quot;the integer nanoseconds portion of the maximum PMA/PMD transmit path data delay, in units of ns&quot; uses two names</td>
<td>SuggestedRemedy</td>
<td>Change &quot;units of ns&quot; to &quot;units of nanoseconds&quot; or &quot;units of 1 ns&quot;, several times. &quot;units of 2^-16 ns&quot; can stay as it is.</td>
<td>ACCEPT IN PRINCIPLE.</td>
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**Comment Type:** TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

**Comment Status:** D/dispatched A/accepted R/rejected

**Response Status:** O/open W/written C/closed U/unsatisfied Z/withdrawn
### Approved Responses

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- **Nicholl, Shawn** Xilinx

**Comment Type** E  **Comment Status** A  **bucket**

- Currently says "the register", but mentions two register; Also, the style of text is different from the style earlier in the paragraph.

**SuggestedRemedy**

- Propose to replace with:
  - (Registers 1.1800.1 and 1.1800.3, see Table 45-139)

- Same comment for other text in 45.2.1.176 and in sub-clauses 45.2.1.177, 45.2.2.21, 45.2.2.22, 45.2.3.68, 45.2.4.29, 45.2.4.30, 45.2.5.29, 45.2.5.30, 45.2.6.15, 45.2.6.16.

**Response**  **Response Status** C

- ACCEPT.

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- **Kabra, Lokesh** Synopsys Inc

**Comment Type** E  **Comment Status** A  **bucket**

- Inclusion of "Fine resolution path delay registers" redundant as they are part of TimeSync path delay register set

**SuggestedRemedy**

- Delete "and fine resolution receive path data delay"

**Response**  **Response Status** C

- ACCEPT.

**Comment**

- Names be made more consistent

**SuggestedRemedy**

- Modify the existing lines in Table 45-141 as follows

  - 1.1805.15:0 Maximum PMA/PMD receive path data delay in ns, lower
    - PMA_PMD_delay_ns_RX_max[15:0]
  - 1.1806.15:0 Maximum PMA/PMD receive path data delay in ns, upper
    - PMA_PMD_delay_ns_RX_max[31:0]
  - 1.1807.15:0 Minimum PMA/PMD receive path data delay in ns, lower
    - PMA_PMD_delay_ns_RX_min[15:0]
  - 1.1808.15:0 Minimum PMA/PMD receive path data delay in ns, upper
    - PMA_PMD_delay_ns_RX_min[31:0]
  - 1.1811.15:0 Maximum PMA/PMD receive path data delay in sub-ns
    - PMA_PMD_delay_sub-ns_RX_max[15:0]
  - 1.1812.15:0 Minimum PMA/PMD receive path data delay in sub-ns
    - PMA_PMD_delay_sub-ns_RX_min[15:0]

**Response**  **Response Status** C

- ACCEPT IN PRINCIPLE.

**Changes per** https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf

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- **Kabra, Lokesh** Synopsys Inc

**Comment Type** E  **Comment Status** A  **bucket**

- Names be made more consistent

**SuggestedRemedy**

- Modify the existing lines in Table 45-140 as follows

  - 1.1801.15:0 Maximum PMA/PMD transmit path data delay in ns, lower
    - PMA_PMD_delay_ns_TX_max[15:0]
  - 1.1802.15:0 Maximum PMA/PMD transmit path data delay in ns, upper
    - PMA_PMD_delay_ns_TX_max[31:0]
  - 1.1803.15:0 Minimum PMA/PMD transmit path data delay in ns, lower
    - PMA_PMD_delay_ns_TX_min[15:0]
  - 1.1804.15:0 Minimum PMA/PMD transmit path data delay in ns, upper
    - PMA_PMD_delay_ns_TX_min[31:0]
  - 1.1809.15:0 Maximum PMA/PMD transmit path data delay in sub-ns
    - PMA_PMD_delay_sub-ns_TX_max[15:0]
  - 1.1810.15:0 Minimum PMA/PMD transmit path data delay in sub-ns
    - PMA_PMD_delay_sub-ns_TX_min[15:0]

**Response**  **Response Status** C

- ACCEPT IN PRINCIPLE.

**Changes per** https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf

---

**TYPE:** TR/technical required  **ER:** editorial required  **GR:** general required  **T:** technical  **E:** editorial  **G:** general

**COMMENT STATUS:** D/dispatched  **A:** accepted  **R:** rejected  **RESPONSE STATUS:** O/open  **W:** written  **C:** closed  **U:** unsatisfied  **Z:** withdrawn

**SORT ORDER:** Clause, Subclause, page, line
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<td>&quot;The TimeSync WIS capability register (see Table 45-230) indicates the capability of the PMA/PMD to.&quot;</td>
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<td>&quot;The TimeSync WIS capability register (see Table 45-230) indicates the capability of the WIS to.&quot;</td>
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Comment Type E  Comment Status A

Names be made more consistent

**Suggested Remedy**

- Modify the existing lines in Table 45-231 as follows:
  2.1801.15:0 Maximum WIS transmit path data delay in ns, lower
     WIS\_delay\_ns\_TX\_max[15:0]
  2.1802.15:0 Maximum WIS transmit path data delay in ns, upper
     WIS\_delay\_ns\_TX\_max[31:0]
  2.1803.15:0 Minimum WIS transmit path data delay in ns, lower
     WIS\_delay\_ns\_TX\_min[15:0]
  2.1804.15:0 Minimum WIS transmit path data delay in ns, upper
     WIS\_delay\_ns\_TX\_min[31:0]
  2.1809.15:0 Maximum WIS transmit path data delay in sub-ns
     WIS\_delay\_sub-ns\_TX\_max[15:0]
  2.1810.15:0 Minimum WIS transmit path data delay in sub-ns
     WIS\_delay\_sub-ns\_TX\_min[15:0]

**Response**  Response Status C

ACCEPT IN PRINCIPLE.

Changes per https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf

Comment Type E  Comment Status A

Names be made more consistent

**Suggested Remedy**

- Modify the existing lines in Table 45-232 as follows:
  2.1805.15:0 Maximum WIS receive path data delay in ns, lower
     WIS\_delay\_ns\_RX\_max[15:0]
  2.1806.15:0 Maximum WIS receive path data delay in ns, upper
     WIS\_delay\_ns\_RX\_max[31:0]
  2.1807.15:0 Minimum WIS receive path data delay in ns, lower
     WIS\_delay\_ns\_RX\_min[15:0]
  2.1808.15:0 Minimum WIS receive path data delay in ns, upper
     WIS\_delay\_ns\_RX\_min[31:0]
  2.1811.15:0 Maximum WIS receive path data delay in sub-ns
     WIS\_delay\_sub-ns\_RX\_max[15:0]
  2.1812.15:0 Minimum WIS receive path data delay in sub-ns
     WIS\_delay\_sub-ns\_RX\_min[15:0]

**Response**  Response Status C

ACCEPT IN PRINCIPLE.

Changes per https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf

Comment Type E  Comment Status A

Title of registers can be made consistent

**Suggested Remedy**

- Modify the existing lines in Table 45-233 as follows:
  3.1801 through 3.1804 TimeSync PCS transmit path data delay in ns
    45.2.3.68
  3.1805 through 3.1808 TimeSync PCS receive path data delay in ns
    45.2.3.69
  3.1809 through 3.1810 TimeSync PCS transmit path data delay in fractional ns
    45.2.3.68
  3.1811 through 3.1812 TimeSync PCS receive path data delay in fractional ns
    45.2.3.69
  3.1813 TimeSync PCS configuration

**Response**  Response Status C

ACCEPT IN PRINCIPLE.

Changes per https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf
### Approved Responses

#### IEEE P802.3cx D2.1 ITSA Task Force 1st Working Group recirculation ballot comments

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</table>

Kabra, Lokesh Synopsys Inc

**Comment Type**: E  **Comment Status**: A

**SuggestedRemedy**

Replace the "the report of" with "the reporting of" in both the sentences (line 29, 31)

**Response**  **Response Status**: C

ACCEPT.

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</table>

Nicholl, Shawn Xilinx

**Comment Type**: E  **Comment Status**: A

Currently says "support the report of" in two places.

**SuggestedRemedy**

Propose to change to:
- "support the reporting of".

**Response**  **Response Status**: C

ACCEPT.

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<td>45.2.3.67</td>
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He, Xiang Huawei Technologies

**Comment Type**: TR  **Comment Status**: A

The sentence "When read as a one, bit 3.1800.13 indicates that the PCS supports the use of the beginning of the SFD as the data delay measurement point to calculate the TX_NUM_UNIT_CHANGE and RX_NUM_UNIT_CHANGE values" has the implication that the measurement point is only used to calculate the dynamic delay by TX_NUM_UNIT_CHANGE and RX_NUM_UNIT_CHANGE. But the fact is the static data delay (e.g., the reported maximum/minimum data delay) and the multi-PCS lane dynamic data delay are also reported based on the same measurement point.

Propose to make this sentence to cover both static and dynamic delay measurement.

If this comment is accepted, do the similar change for the second paragraph of 45.2.3.67.1, and the first and second paragraphs of 45.2.3.67.2, 45.2.5.28.1 and 45.2.5.28.2.

**SuggestedRemedy**

Change the sentence

"When read as a one, bit 3.1800.13 indicates that the PCS supports the use of the beginning of the SFD as the data delay measurement point to calculate the TX_NUM_UNIT_CHANGE and RX_NUM_UNIT_CHANGE values."

to

"When read as a one, bit 3.1800.13 indicates that the PCS supports the use of the beginning of the SFD as the data delay measurement point to calculate the PCS transmit path data delay."

**Response**  **Response Status**: C

ACCEPT.
Comment Type: E  Comment Status: A

Why can't this capability independently exist for implementations in which XX_NUM_UNIT_CHANGE capability is not present? Implementations can still get better accurate timestamping with this capability than the default. Moreover, in some cases/modes like 1000BASE-X, dynamic data path delay may not exist at all in PCS layer.

Suggested Remedy
Delete 3rd paragraph

Response  Response Status: C
ACCEPT.

See comment #415

He, Xiang  Huawei Technologies

Comment Type: TR  Comment Status: A

The sentence "This bit is only valid when the TX/RX_NUM_UNIT_CHANGE support bit in this register (3.1800.10) is set to 'PCS supports TX/RX_NUM_UNIT_CHANGE indication capability'" implies that the measurement point is only valid when the TX/RX_NUM_UNIT_CHANGE is valid. However, the static data delay (e.g., the reported maximum/minimum data delay) and the multi-PCS lane dynamic data delay are also reported based on the measurement point (3.1800.13). For implementations not supporting the TX/RX_NUM_UNIT_CHANGE indication capability, the measurement point could still be valid, which is used for the measurement of other delays.

Propose to delete this sentence.

If this comment is accepted, do the similar change for the third paragraph of 45.2.3.67.2.

Suggested Remedy
Delete the sentence on page 32, line 15-16.

Response  Response Status: C
ACCEPT.
The sentence "When both registers 3.1800.12 and 3.1800.13 are zero, the location of the data delay measurement point is the beginning of the SFD" can be contradictory with the configuration of register 3.1813.13, where:

0 = PCS is configured to use the data delay measurement point at the beginning of the SFD
1 = PCS is configured to use the data delay measurement point at the beginning of the first symbol after the SFD

For example, if both 3.1800.12 and 3.1800.13 are zero, meaning the measurement point is the beginning of the SFD; 3.1813.13 could be set to 1 (the first symbol after the SFD). To avoid this, a new sentence can be added that reads "and the value of the register 3.1813.13 is ignored."

If the proposal is accepted, do the similar change for the fourth paragraph of 45.2.3.67.2, and the third paragraph of 45.2.5.28.1 and 45.2.5.28.2.

SuggestedRemedy

Change the sentence

"When both registers 3.1800.12 and 3.1800.13 are zero, the location of the data delay measurement point is the beginning of the SFD."

to

"When both registers 3.1800.12 and 3.1800.13 are zero, the location of the data delay measurement point is the beginning of the SFD, and the value of the register 3.1813.13 is ignored."

Response

ACCEPT.
### Approved Responses

**IEEE P802.3cx D2.1 ITSA Task Force 1st Working Group recirculation ballot comments**

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SuggestedRemedy

"(3.1805 and 3.1808)." should be "(3.1805 through 3.1808)."

Response

Response Status C

Accept.

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SuggestedRemedy

"(3.1805 and 3.1808)." should be "(3.1805 through 3.1808)."

Response

Response Status C

Accept.

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SuggestedRemedy

Inclusion of "Fine resolution path delay registers" redundant as they are part of TimeSync path delay register set

Response

Response Status C

Accept.

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</tbody>
</table>

SuggestedRemedy

Inclusion of "Fine resolution path delay registers" redundant as they are part of TimeSync path delay register set

Response

Response Status C

Accept.
Approved Responses

Comment Type: E  Comment Status: A

names be made more consistent

Suggested Remedy

Modify the existing lines in Table 45-232 as follows
3.1805.15:0 Maximum PCS receive path data delay in ns, lower
PCS_delay_ns_RX_max[15:0]
3.1806.15:0 Maximum PCS receive path data delay in ns, upper
PCS_delay_ns_RX_max[31:0]
3.1807.15:0 Minimum PCS receive path data delay in ns, lower
PCS_delay_ns_RX_min[15:0]
3.1808.15:0 Minimum PCS receive path data delay in ns, upper
PCS_delay_ns_RX_min[31:0]
3.1811.15:0 Maximum PCS receive path data delay in sub-ns
PCS_delay_sub-ns_RX_max[15:0]
3.1812.15:0 Minimum PCS receive path data delay in sub-ns
PCS_delay_sub-ns_RX_min[15:0]

Response  Response Status: C

ACCEPT IN PRINCIPLE.

Changes per https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf

Comment Type: ER  Comment Status: A

Currently it reads like a status register when it is actually a control register.

Suggested Remedy

Propose to change (in two places) to:
- "Configures the PCS to use ..."

Response  Response Status: C

ACCEPT.

Comment Type: ER  Comment Status: A

Propose to delete "used in the calculation of the optional
TX_NUM_UNIT_CHANGE and RX_NUM_UNIT_CHANGE values, passed from the PCS
across the xMII to the gRS" that describes the use of the measurement point, which has
been defined in 45.2.3.67.1 and 45.2.3.67.2. Seems to be unnecessary.

If the proposal is accepted, do similar changes for the first paragraph of 45.2.5.31.1.

Suggested Remedy

Delete "and renumber existing subclauses as needed" or specify what needs to be
renumbered.

Proposed Response  Response Status: C

PROPOSED ACCEPT.

Delete "and renumber existing subclauses as needed"
Comment Type: ER  |  Comment Status: A

"When this bit is set to 0 the beginning of the SFD is used as the data delay measurement point to calculate the TX_NUM_UNIT_CHANGE and RX_NUM_UNIT_CHANGE values."

Propose to delete "to calculate the TX_NUM_UNIT_CHANGE and RX_NUM_UNIT_CHANGE values" as this is repeating what has already been said in 45.2.3.67.1.

If the proposal is accepted, do similar changes for the second paragraph of 45.2.5.31.1.

Suggested Remedy
Change
"When this bit is set to 0 the beginning of the SFD is used as the data delay measurement point to calculate the TX_NUM_UNIT_CHANGE and RX_NUM_UNIT_CHANGE values."

to
"When this bit is set to 0 the beginning of the SFD is used as the data delay measurement point."

Response  |  Response Status: C |  ACCEPT.

Comment Type: ER  |  Comment Status: A

"When set to 1 the first symbol after the SFD is used as the data delay measurement point to calculate the TX_NUM_UNIT_CHANGE and RX_NUM_UNIT_CHANGE values."

Propose to delete "to calculate the TX_NUM_UNIT_CHANGE and RX_NUM_UNIT_CHANGE values" as this is repeating what has already been said in 45.2.3.67.2.

If the proposal is accepted, do similar changes for the third paragraph of 45.2.5.31.1.

Suggested Remedy
Change
"When set to 1 the first symbol after the SFD is used as the data delay measurement point to calculate the TX_NUM_UNIT_CHANGE and RX_NUM_UNIT_CHANGE values."

to
"When set to 1 the first symbol after the SFD is used as the data delay measurement point."

Response  |  Response Status: C |  ACCEPT.
"Writes to this bit are ignored if the TX/RX_NUM_UNIT_CHANGE support bit in register (3.1800) is set to 'PCS does not support TX/RX_NUM_UNIT_CHANGE indication capability. Writes to this bit are also be ignored if they attempt to set the bit to a value that the equivalent capability bits in register (3.1800) indicate is not supported."

The second sentence can cover the first sentence. Proposed to delete one. A single quote mark is also missing in the first sentence.

If the proposal is accepted, do similar changes for the fourth paragraph of 45.2.5.31.1.

Suggested Remedy

"Writes to this bit are ignored if the TX/RX_NUM_UNIT_CHANGE support bit in register (3.1800) is set to 'PCS does not support TX/RX_NUM_UNIT_CHANGE indication capability. Writes to this bit are also be ignored if they attempt to set the bit to a value that the equivalent capability bits in register (3.1800) indicate is not supported."

to

"Writes to this bit are ignored if they attempt to set the bit to a value that the equivalent capability bits in register (3.1800) indicate is not supported."

Response

Accept.

Comment

Cl 45 SC 45.2.3.69a.1 P 36 L 7 # 421

He, Xiang
Huawei Technologies

Comment Type: ER
Comment Status: A

Missing closing single quote. There is an opening quote preceding "PCS does not support", but the closing quote is missing.

Suggested Remedy
Propose to add the closing single quote at the end of the sentence:
- 'PCS does not support TX/RX_NUM_UNIT_CHANGE indication capability'.

Same comment for DTE XS in 45.2.5.31.1

Response
Response Status: C
Accept.

Comment

Cl 45 SC 45.2.3.69a.1 P 36 L 8 # 333

Nicholl, Shawn
Xilinx

Comment Type: E
Comment Status: A

There seems to be an unclosed single quote: "is set to 'PCS does not support." does not seem to close.

Suggested Remedy
Delete the single quote or identify where it closes

Response
Response Status: C
Accept.

Comment

Cl 45 SC 45.2.3.69a.1 P 36 L 8 # 278

Zimmerman, George
CME Consulting/ADI, APL Gp, Cisco, CommScope

Comment Type: E
Comment Status: A

Extraneous "be". Also, use of "they" is strange.

Suggested Remedy
Propose to change to:
- "Writes to this bit are also ignored if there is an attempt to set the bit ..."

Same comment for DTE XS in 45.2.5.31.1

Response
Response Status: C
Accept.

See comment #421.
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<td>E</td>
<td>A</td>
<td>The last sentence of the final paragraph seems unrelated to the discussion earlier in the paragraph. Move the Note to a new paragraph. Also, simplify the note to avoid repeating the definition of DDMP.</td>
<td></td>
<td></td>
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<td>T</td>
<td>A</td>
<td>&quot;PMA/PMD&quot; should be &quot;PHY XS&quot;</td>
<td>Kabra, Lokesh</td>
<td>Synopsys Inc</td>
</tr>
<tr>
<td>45</td>
<td>45.2.4.29</td>
<td>37</td>
<td>29</td>
<td>E</td>
<td>A</td>
<td><em>typo error in paragraph;</em> Inclusion of &quot;Fine resolution path delay registers&quot; redundant as they are part of TimeSync path delay register set</td>
<td>Kabra, Lokesh</td>
<td>Synopsys Inc</td>
</tr>
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</table>
Comment Type: E  Comment Status: A
Names be made more consistent

Suggested Remedy

Modify the existing lines in Table 45-337 as follows
4.1801.15:0  Maximum PHY XS transmit path data delay in ns, lower
PHY_XS_delay_ns_TX_max[15:0]
4.1802.15:0  Maximum PHY XS transmit path data delay in ns, upper
PHY_XS_delay_ns_TX_max[31:0]
4.1803.15:0  Minimum PHY XS transmit path data delay in ns, lower
PHY_XS_delay_ns_TX_min[15:0]
4.1804.15:0  Minimum PHY XS transmit path data delay in ns, upper
PHY_XS_delay_ns_TX_min[31:0]
4.1809.15:0  Maximum PHY XS transmit path data delay in sub-ns
PHY_XS_delay_subns_TX_max[15:0]
4.1810.15:0  Minimum PHY XS transmit path data delay in sub-ns
PHY_XS_delay_subns_TX_min[15:0]

Response  Response Status: C
ACCEPT IN PRINCIPLE.

Changes per https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf

---

Comment Type: E  Comment Status: A
Names be made more consistent

Suggested Remedy

Modify the existing lines in Table 45-338 as follows
4.1805.15:0  Maximum PHY XS receive path delay in ns, lower
PHY_XS_delay_ns_RX_max[15:0]
4.1806.15:0  Maximum PHY XS receive path delay in ns, upper
PHY_XS_delay_ns_RX_max[31:0]
4.1807.15:0  Minimum PHY XS receive path delay in ns, lower
PHY_XS_delay_ns_RX_min[15:0]
4.1808.15:0  Minimum PHY XS receive path delay in ns, upper
PHY_XS_delay_ns_RX_min[31:0]
4.1811.15:0  Maximum PHY XS receive path delay in sub-ns
PHY_XS_delay_subns_RX_max[15:0]
4.1812.15:0  Minimum PHY XS receive path delay in sub-ns
PHY_XS_delay_subns_RX_min[15:0]

Response  Response Status: C
ACCEPT IN PRINCIPLE.

Changes per https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf

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Comment Type: E  Comment Status: A
Title of registers can be made consistent

Suggested Remedy

Modify the existing lines in Table 45-339 as follows
5.1801 through 5.1804  TimeSync DTE XS transmit path data delay in ns
45.2.5.29
5.1805 through 5.1808  TimeSync DTE XS receive path data delay in ns
45.2.5.30
5.1809 through 5.1810  TimeSync DTE XS transmit path data delay in fractional ns
45.2.5.29
5.1811 through 5.1812  TimeSync DTE XS receive path data delay in fractional ns
45.2.5.30
5.1813  TimeSync DTE XS configuration
45.2.5.31

Response  Response Status: C
ACCEPT IN PRINCIPLE.

Changes per https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf
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<td>E</td>
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<td>52</td>
<td>384</td>
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<td>Synopsys Inc</td>
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<td>typo error in paragraph;</td>
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<td>T</td>
<td>40</td>
<td>51</td>
<td>512</td>
<td>Tse, Richard</td>
<td>Microchip Technology</td>
<td>T</td>
<td>DTE XS subclause needs change:  1. &quot;PMA/PMD&quot; should be &quot;DTE XS&quot;  2. DTE XS has more than just Tx and Rx data delay capability registers so its description in 45.2.5.28 must describe this appropriately.  3. Only 2 of its capability register bits are described in subclauses. The rest are described in the introductory statement.</td>
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<td></td>
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<tr>
<td>45</td>
<td>45.2.5.28</td>
<td>E</td>
<td>39</td>
<td>52</td>
<td>384</td>
<td>Kabra, Lokesh</td>
<td>Synopsys Inc</td>
<td>E</td>
<td>type error in paragraph;  Replace &quot;transmit data delay&quot; with &quot;transmit path data delay&quot;; Replace &quot;receive data delay&quot; with &quot;receive path data delay&quot;;</td>
<td>ACCEPT.</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>45.2.5.28</td>
<td>T</td>
<td>40</td>
<td>51</td>
<td>512</td>
<td>Tse, Richard</td>
<td>Microchip Technology</td>
<td>T</td>
<td>DTE XS subclause needs change:  1. &quot;PMA/PMD&quot; should be &quot;DTE XS&quot;  2. DTE XS has more than just Tx and Rx data delay capability registers so its description in 45.2.5.28 must describe this appropriately.  3. Only 2 of its capability register bits are described in subclauses. The rest are described in the introductory statement.</td>
<td></td>
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</tr>
<tr>
<td>45</td>
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<td>E</td>
<td>39</td>
<td>52</td>
<td>384</td>
<td>Kabra, Lokesh</td>
<td>Synopsys Inc</td>
<td>E</td>
<td>typo error in paragraph;  Replace &quot;transmit data delay&quot; with &quot;transmit path data delay&quot;; Replace &quot;receive data delay&quot; with &quot;receive path data delay&quot;;</td>
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Approved Responses

Comment Type | Comment Status | Response Status | Response | Suggested Remedy | Comment Status | Response Status | Response | Suggested Remedy | Comment Status | Response Status | Response
---|---|---|---|---|---|---|---|---|---|---|---

45 | 45.2.5.29 | P 41 | L 27 | #385 | Kabra, Lokesh | Synopsys Inc | E | A | C

Comment Type: E
Comment Status: A
Response Status: C

Inclusion of "Fine resolution path delay registers" redundant as they are part of TimeSync path delay register set

**Suggested Remedy**

Delete "and fine resolution transmit path data delay"

Response

CHEET.

Changes per https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf

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45 | 45.2.5.30 | P 42 | L 35 | #387 | Kabra, Lokesh | Synopsys Inc | E | A | C

Comment Type: E
Comment Status: A
Response Status: C

Inclusion of "Fine resolution path delay registers" redundant as they are part of TimeSync path delay register set

**Suggested Remedy**

Delete "and fine resolution receive path data delay"

Response

CHEET.

Changes per https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf

---

45 | 45.2.5.29 | P 42 | L 8 | #386 | Kabra, Lokesh | Synopsys Inc | E | A | C

Comment Type: E
Comment Status: A
Response Status: C

Names be made more consistent

**Suggested Remedy**

Modify the existing lines in Table 45-362 as follows

5.1801.15:0  Maximum DTE XS transmit path data delay in ns, lower
DTE_XS_delay_ns_TX_max[15:0]
5.1802.15:0  Maximum DTE XS transmit path data delay in ns, upper
DTE_XS_delay_ns_TX_max[31:0]
5.1803.15:0  Minimum DTE XS transmit path data delay in ns, lower
DTE_XS_delay_ns_TX_min[15:0]
5.1804.15:0  Minimum DTE XS transmit path data delay in ns, upper
DTE_XS_delay_ns_TX_min[31:0]
5.1809.15:0  Maximum DTE XS transmit path data delay in sub-ns
DTE_XS_delay_sub-ns_TX_max[15:0]
5.1810.15:0  Minimum DTE XS transmit path data delay in sub-ns
DTE_XS_delay_sub-ns_TX_min[15:0]

Response

CHEET.

ACCEPT IN PRINCIPLE.

Changes per https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf

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45 | 45.2.5.30 | P 43 | L 11 | #388 | Kabra, Lokesh | Synopsys Inc | E | A | C

Comment Type: E
Comment Status: A
Response Status: C

Names be made more consistent

**Suggested Remedy**

Modify the existing lines in Table 45-363 as follows

5.1805.15:0  Maximum DTE XS receive path data delay in ns, lower
DTE_XS_delay_ns_RX_max[15:0]
5.1806.15:0  Maximum DTE XS receive path data delay in ns, upper
DTE_XS_delay_ns_RX_max[31:0]
5.1807.15:0  Minimum DTE XS receive path data delay in ns, lower
DTE_XS_delay_ns_RX_min[15:0]
5.1808.15:0  Minimum DTE XS receive path data delay in ns, upper
DTE_XS_delay_ns_RX_min[31:0]
5.1811.15:0  Maximum DTE XS receive path data delay in sub-ns
DTE_XS_delay_sub-ns_RX_max[15:0]
5.1812.15:0  Minimum DTE XS receive path data delay in sub-ns
DTE_XS_delay_sub-ns_RX_min[15:0]

Response

CHEET.

ACCEPT IN PRINCIPLE.

Changes per https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf
<table>
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<td>Modify the existing lines in Table 45-364 as follows</td>
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<td>6.1801 through 6.1804</td>
<td>TimeSync TC transmit path data delay in ns</td>
</tr>
<tr>
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<td>6.1805 through 6.1808</td>
<td>TimeSync TC receive path data delay in ns</td>
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<td>6.1809 through 6.1810</td>
<td>TimeSync TC transmit path data delay in fractional ns</td>
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<td></td>
<td>6.1811 through 6.1812</td>
<td>TimeSync TC receive path data delay in fractional ns</td>
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<td>Tse, Richard</td>
<td>Microchip Technology</td>
<td>T</td>
<td>A</td>
<td>&quot;PMA/PMD&quot; should be &quot;TC&quot;</td>
<td>ACCEPT.</td>
</tr>
</tbody>
</table>
| | | | | | "The TimeSync TC capability register (see Table45-375) indicates the capability of the PMA/PMD to."
| | | | | | to
| | | | | | "The TimeSync TC capability register (see Table45-375) indicates the capability of the TC to." |
Comment Type: E  Comment Status: A
Names be made more consistent

Suggested Remedy
Modify the existing lines in Table 45-375 as follows:

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<td>Maximum TC transmit path data delay in ns, lower</td>
</tr>
<tr>
<td>6.1802.15:0</td>
<td>Maximum TC transmit path data delay in ns, upper</td>
</tr>
<tr>
<td>6.1803.15:0</td>
<td>Minimum TC transmit path data delay in ns, lower</td>
</tr>
<tr>
<td>6.1804.15:0</td>
<td>Minimum TC transmit path data delay in ns, upper</td>
</tr>
<tr>
<td>6.1809.15:0</td>
<td>Maximum TC transmit path data delay in sub-ns</td>
</tr>
<tr>
<td>6.1810.15:0</td>
<td>Minimum TC transmit path data delay in sub-ns</td>
</tr>
</tbody>
</table>

Response  Response Status: C
ACCEPT IN PRINCIPLE.

Changes per https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf

Comment Type: E  Comment Status: A
Names be made more consistent

Suggested Remedy
Modify the existing lines in Table 45-377 as follows:

<table>
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<th>Description</th>
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<tr>
<td>6.1805.15:0</td>
<td>Maximum TC receive path data delay in ns, lower</td>
</tr>
<tr>
<td>6.1806.15:0</td>
<td>Maximum TC receive path data delay in ns, upper</td>
</tr>
<tr>
<td>6.1807.15:0</td>
<td>Minimum TC receive path data delay in ns, lower</td>
</tr>
<tr>
<td>6.1808.15:0</td>
<td>Minimum TC receive path data delay in ns, upper</td>
</tr>
<tr>
<td>6.1811.15:0</td>
<td>Maximum TC receive path data delay in sub-ns</td>
</tr>
<tr>
<td>6.1812.15:0</td>
<td>Minimum TC receive path data delay in sub-ns</td>
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Response  Response Status: C
ACCEPT IN PRINCIPLE.

Changes per https://www.ieee802.org/3/cx/public/jan22int/kabra_3cx_01_0122_2.pdf

Comment Type: E  Comment Status: A
Redundant "the"

Suggested Remedy
Replace "for the full-duplex mode" with "for full-duplex mode"

Response  Response Status: C
REJECT.


"Notice that English tends to treat mass nouns and plural nouns as generic when they have a modifier before them (Chinese history). But when they are followed by a modifier, especially by an of-phrase, the normally has to be present (the history of China)."
Comment Type ER  Comment Status D
Zimmerman, George CME Consulting/ADI, APL Gp, Cisco, CommScope,
The text being edited is not the same as 802.3dc D3.0. The edit appears unnecessary. "are all compatible with the <UL> generic Reconciliation Sublayer (gRS) <UL> sublayer <SO> defined in 90.5" whereas 802.3dc D3.0 reads "are all compatible with the gRS sublayer defined in 90.5" - note that I have submitted a comment on 802.3dc D3.0 to insert "generic Reconciliation Sublayer" and fix this sentence, as it appears to be the first instance of gRS in IEEE Std 802.3 outside of the list of acronyms & abbreviations.

SuggestedRemedy Align text with latest draft of 802.3dc
Proposed Response REJECT.

Comment Status D
Response Status C
Zimmerman, George CME Consulting/ADI, APL Gp, Cisco, CommScope,

Comment Type E  Comment Status A
Kabra, Lokesh Synopsys Inc
Not all 10 Mb/s nodes have MII defined (e.g 10BASE-5, 10BASE-T). Hence revert back to original text.

SuggestedRemedy Replace "NOTE 1-In this figure, the xMII is used as a generic term for the Media Independent Interfaces for implementations of 10 Mb/s and above. For example: for 10Mb/s and 100Mb/s implementations" with "NOTE 1-In this figure, the xMII is used as a generic term for the Media Independent Interfaces for implementations of 10BASE-T1L, 10BASE-T1S, and 100 Mb/s and above. For example: for 100 Mb/s implementations"

Response ACCEPT IN PRINCIPLE.

See comment #281
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<td>CME Consulting/ADI, APL Gp, Cisco, CommScope,</td>
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Comment: The change to the NOTE says that the MII is the interface for implementations of 10 Mb/s and above. This is technically incorrect with most of the 10 Mb/s implementations, and is OUTSIDE THE SCOPE OF THE PAR - which is "Define optional enhancements to Ethernet support for time synchronization protocols to provide improved timestamp accuracy in support of ITU-T Recommendation G.8273.2 'Class C' and 'Class D' system time error performance requirements." as it is unrelated to the timestamp accuracy.

Suggested Remedy: Delete the proposed changes to NOTE 1 of Figure 90-1, reverting to the language in 802.3dc D3.0.

Response: ACCEPT.

Comment: The word "capture" is inserted, and should be underlined.

Suggested Remedy: Underline capture as an insert.

Response: ACCEPT.

Comment: The word "may" is formally "is permitted to" in IEEE-SA standards, and is generally used for options or text speaking to requirements. This is descriptive text, and the word "can" is more appropriate for the description of things that the TimeSync Client can do with the information.

Suggested Remedy: Replace usages of "may" with "can" in lines 8 through 18 of page 52, relating to the timesync client.

Response: ACCEPT.

Comment: "to calculate the accuracy of the calculated eggers time at the MDI" should be "to improve the accuracy of the calculated ingress time at the MDI"

Suggested Remedy: Replace "to calculate the accuracy of the calculated eggers time at the MDI" with "to improve the accuracy of the calculated ingress time at the MDI"

Response: ACCEPT.
Approved Responses

IEEE P802.3cx D2.1 ITSA Task Force 1st Working Group recirculation ballot comments

Cl 90 SC 90.4.2 P 52 L 25 # 284
Zimmerman, George CME Consulting/ADI, APL Gp, Cisco, CommScope, bucket
Comment Type E Comment Status A
"model used in this / the service specification" - the sentence speaks to only THIS specific service specification - the original language is more appropriate. Additionally, this kind of change is unnecessary and unrelated to the purpose of the project - arguably out of scope.
SuggestedRemedy revert change from "this" to "the".
Response Response Status C ACCEPT.

Cl 90 SC 90.4.3.1 P 52 L 34 # 3
Huber, Tom Nokia bucket
Comment Type E Comment Status A
Missing an editorial instruction regarding this subclause and 90.4.3.1.2.
SuggestedRemedy Add an editing instruction: Change 90.4.3.1 and subclauses as shown. Delete the editing instruction for 90.4.3.1.1.
Response Response Status C ACCEPT.

Cl 90 SC 90.4.3.1 P 52 L 37 # 336
Nicholl, Shawn Xilinx bucket
Comment Type E Comment Status R
"sub-layer" should be "sublayer", but actually is redundant (since gRS stands for generic Reconciliation Sublayer) - but was used in the original text.
SuggestedRemedy change "sub-layer" to "sublayer" or simply delete "sub-layer".
Response Response Status C ACCEPT IN PRINCIPLE.
Delete "sub-layer"

Cl 90 SC 90.4.3.1.1 P 53 L 2 # 285
Zimmerman, George CME Consulting/ADI, APL Gp, Cisco, CommScope, bucket
Comment Type TR Comment Status R
"The use of the beginning of the SFD, or the beginning of the first symbol after the SFD, as the measurement point requires consistent configuration of both the gRS and the PCS (see 45.2.3.69a) for correct operation." - this seems like a VERY IMPORTANT technical point, but is buried in the middle of a discussion of semantics. It needs to be put somewhere more prominent. Suggest some description of these functions in 90.2 is warranted. Same text is also in 90.4.3.2.1 on P 54, so copying rather than moving the text seems appropriate.
SuggestedRemedy Copy the quoted sentence and put it as a new paragraph at the end of 90.2 Overview. Editor/Task Force to consider other important description of changes and options that need to be highlighted for the reader to understand how TSSI has changed.
Response Response Status C REJECT.
The placement of the proposed text in 90.2 would make reference to data delay measurement point options before they are first introduced in detail. No changes to the draft necessary.
Approved Responses

IEEE P802.3cx D2.1 ITSA Task Force 1st Working Group recirculation ballot comments

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Nicholl, Shawn
Xilinx

Comment Type  T  MM
Comment Status  R

This sub-clause needs text to handle MAC Merge sublayer case. Also, cross-references for SFD, SMD-E, and SMD-S can be consolidated here to simplify sub-clause 90.5.1.

SuggestedRemedy

Propose to preface the second paragraph with "When the MAC Merge sublayer is not instantiated," and add SFD cross-reference such that it reads as follows:

"When the MAC Merge sublayer is not instantiated, the data delay measurement point (DDMP) parameter can take one of two possible values, SFD and FIRST_SYMBOL. The value SFD indicates that the TS_TX.indication primitive was issued as the result of the beginning of Start Frame Delimiter (SFD, see 3.1.1 and 3.2.2) being transferred across the transmit path of the xMII. The value FIRST_SYMBOL ...

Propose to add a new paragraph after the existing text "for correct operation" (i.e. between the second and third paragraphs):

"When the MAC Merge sublayer is instantiated, the data delay measurement point (DDMP) parameter can take one of two possible values, SMD and FIRST_SYMBOL. The value SMD indicates that the TS_TX.indication primitive was issued as the result of the beginning of an Start mPacket Delimiter for an express packet or preemptable packet start (SMD-E or SMD-S, see 99.3.3) being transferred across the transmit path of the xMII. The value FIRST_SYMBOL indicates that the TS_TX.indication primitive was issued as the result of the beginning of the first symbol after an SMD-E or SMD-S being transferred across the transmit path of the xMII. The use of the beginning of the SMD, or the beginning of the first symbol after the SMD, as the measurement point requires consistent configuration of both the gRS and the PCS (see 45.2.3.69a) for correct operation."

Response  C

The existing text was written this way because the MAC Merge function is not relevant if the symbol-after-SFD is selected. The gRS does not generate a TS_TX/RX.indication primitive event for this symbol. Correspondingly, the draft currently says the MM parameter is not provided this scenario.

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Nicholl, Shawn
Xilinx

Comment Type  T  MM
Comment Status  R

The MM parameter is solely relevant when the MAC Merge sublayer is instantiated. When MAC Merge sublayer is not instantiated, MM parameter is not needed. The last sentence of the paragraph seems to conflate the existence of MM parameter with other conditions.

SuggestedRemedy

Propose to change to:

- "The MM parameter is not provided when the MAC Merge sublayer is not instantiated."

Same comment for RX in 90.4.3.2.1

Response  C

REJECT.

The existing text was written this way because the MAC Merge function is not relevant if the symbol-after-SFD is selected. The gRS does not generate a TS_TX/RX.indication primitive event for this symbol. Correspondingly, the draft currently says the MM parameter is not provided this scenario.

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Kabra, Lokesh
Synopsys Inc

Comment Type  T  G
Comment Status  A

last sentence of third paragraph is a repeat of the last sentence of first paragraph and hence is redundant

SuggestedRemedy

Delete last sentence of third paragraph

Response  C

ACCEPT IN PRINCIPLE.

Changes per comment. Additionally, the last sentence of the first paragraph needs to be corrected wrt "...as the measurement point". This should be "...as the data delay measurement point."

---
Cl 90 SC 90.4.3.2 P 53 L 35 # 4
Huber, Tom  
Nokia

Comment Type E  Comment Status A  bucket
Missing an editorial instruction regarding this subclause, and also missing one for 90.4.3.2.2

SuggestedRemedy
Add an editing instruction: Change 90.4.3.2 and subclauses as shown, and add new subclause 90.4.3.2.3. Delete the editing instructions for subclauses 90.4.3.2.1 and 90.4.3.2.3.

Response  Response Status C
ACCEPT.

Cl 90 SC 90.4.3.2.1 P 54 L 3 # 300
Tse, Richard  
Microchip Technology

Comment Type E  Comment Status A  bucket
This sentence should be deleted as it is immediately followed by an almost identical, but better, sentence.

"The use of the beginning of an SFD, or the beginning of the first symbol after an SFD as the measurement point has to be configured consistently in both the gRS and all associated PHY registers for correct operation."

SuggestedRemedy
remove the sentence identified in the comment

Response  Response Status C
ACCEPT IN PRINCIPLE.

Cl 90 SC 90.4.3.2.1 P 54 L 20 # 315
Tse, Richard  
Microchip Technology

Comment Type T  Comment Status A  bucket
For the Rx datapath, PDDPD gives a dynamic delay that already took place. So, "experiences" should be changed to "experienced".

SuggestedRemedy
Change

"...the beginning of the first symbol after the SFD (see 45.2.3.69a), of the packet that generated the primitive, experiences in the PCS within the PHY."

"...the beginning of the first symbol after the SFD (see 45.2.3.69a), of the packet that generated the primitive, experienced in the PCS within the PHY."

Response  Response Status C
ACCEPT.

Cl 90 SC 90.4.3.2.1 P 54 L 24 # 400
Tse, Richard  
Microchip Technology

Comment Type T  Comment Status A  bucket
last sentence of third paragraph is a repeat of the last sentence of first paragraph and hence is redundant

SuggestedRemedy
Delete last sentence of third paragraph

Response  Response Status C
ACCEPT IN PRINCIPLE.

Comment type changed to T
See comment #300
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**SuggestedRemedy**

Replace "are defined to enable the PHY to provide the gRS dynamic data information to forward to the TimeSync Client to support the calculation of high accuracy data delay values" with "output from the PHY to the gRS. These signals provides the dynamic data path delay information to be forwarded to the TimeSync Client for enabling the calculation of highly accurate data path delay values."

Response | Response Status | C |
| ACCEPT. |

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This comment assumes that implementations not supporting the MAC Merge sublayer have two allowable locations for the data delay measurement point (DDMP). Similarly, this comment assumes that implementations supporting the MAC Merge sublayer also have two allowable locations for the data delay measurement point (DDMP). If either of these assumptions is not true, then that needs to be clearly stated in the draft.

Assuming both assumptions are true, then details related to the DDMP should be re-located to sub-clause 90.4.3.1.1 (see separate comment) and redundant information can be removed from sub-clause 90.5.1.

**SuggestedRemedy**

Propose to update sub-clause 90.5.1 to include only the following text:

The TS_DDMP_Detect_TX function observes the xMII transmit signals.

The TS_DDMP_Detect_TX function detects the occurrence of the data delay measurement point in compliance with the specifications of the given type of the instantiated xMII. The service primitive across the TSSI, i.e., TS_TX.indication, shall be generated only when the data delay measurement point is detected on the transmit signals of the xMII.

When the MAC Merge sublayer is instantiated, the value of MM shall indicate whether an SMD-E (MM=EMAC) or an SMD-S (MM=PMAC) was detected.

Response | Response Status | C |
| REJECT. |

The existing text was written this way because the MAC Merge function is not relevant if the symbol-after-SFD is selected. The gRS does not generate a TS_TX/RX.indication primitive event for this symbol. Correspondingly, the draft currently says the MM parameter is not provided this scenario.

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"SFD" is no longer a parameter of TX_TS.indication

**SuggestedRemedy**

Replace "SFD=DETECTED" with "DDMP=SFD"

Response | Response Status | C |
| ACCEPT. |

Comment type changed to T

---

**TYPE:** TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general  
**COMMENT STATUS:** D/dispatched  A/accepted  R/rejected  
**RESPONSE STATUS:** O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn

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<td>This comment assumes that implementations not supporting the MAC Merge sublayer have two allowable locations for the data delay measurement point (DDMP). Similarly, this comment assumes that implementations supporting the MAC Merge sublayer also have two allowable locations for the data delay measurement point (DDMP). If either of these assumptions is not true, then that needs to be clearly stated in the draft. Assuming both assumptions are true, then details related to the DDMP should be re-located to sub-clause 90.4.3.1.1 (see separate comment) and redundant information can be removed from sub-clause 90.5.2.</td>
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<td>Propose to update sub-clause 90.5.2 to include only the following text: The TS_DDMP_Detect_RX function observes the xMII receive signals. The TS_DDMP_Detect_RX function detects the occurrence of the data delay measurement point in compliance with the specifications of the given type of the instantiated xMII. The service primitive across the TSSI, i.e., TS_RX.indication, shall be generated only when the data delay measurement point is detected on the receive signals of the xMII. When the MAC Merge sublayer is instantiated, the value of MM shall indicate whether an SMD-E (MM=EMAC) or an SMD-S (MM=PMAC) was detected.</td>
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<td>In Figure 90-2, the TX_NUM_UNIT_CHANGE and RX_NUM_UNIT_CHANGE signals should be present only on the right side of the gRS as they are terminated by the gRS. On the left side of the gRS, these signals should no longer be present since their function is now performed by the PDDPD parameter in the TS_TX.indication and TS_RX.indication primitives.</td>
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<td><strong>ACCEPT.</strong></td>
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The existing text was written this way because the MAC Merge function is not relevant if the symbol-after-SFD is selected. The gRS does not generate a TS_TX/RX.indication primitive event for this symbol. Correspondingly, the draft currently says the MM parameter is not provided this scenario.
This is more of a question - but is potentially important. The text as written defines a relationship between TX_CLK and TXD. TX_CLK is an XGMII (and higher rate) xMII signal generated by the RS. Gigabit Ethernet uses GTX_CLK, also generated by the RS. MII (100 Mb/s) uses TX_CLK sourced from the PHY (see 22.2.2.1).

While everything seems correct for XGMII and above, mention of GTX_CLK for gigabit needs to be added as appropriate, and specific consideration needs to be taken to ensure that the timing works for MII where the PHY sources the TX_CLK.

**SuggestedRemedy**

Suggest adding "(GTX_CLK for GMII)" after TX_CLK on line 38 and in Figure 90-3. Also, consider whether there are any ramifications of the differences inherent in MII from the higher speed phys due to clock sourcing.

**Response**

Add "(GTX_CLK for GMII)" after TX_CLK on line 38 and in Figure 90-3.

**Tse, Richard**

**Microchip Technology**

**Comment Type**: T  
**Comment Status**: A

**Comment**: Per the spirit of https://www.ieee802.org/3/cx/public/nov21int/proposed_res_for_comments_135_177_137_181.pdf, recommendations about alignment marker, codeword marker, and/or idle insertion/removal should not be part of this subclause.

**SuggestedRemedy**

Remove this sentence:

"To avoid dynamic transmit path data delay that cannot be reported to the TimeSync client, it is recommended to avoid alignment marker insertion, codeword marker insertion, and/or idle rate adaptation insertion/removal in any PHY sublayer other than the PCS."

**Response**

**Response Status**: C

**ACCEPT.**
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**Comment:** Improper sentences

**Suggested Remedy:**

Replace "that provides dynamic receive path data delay values to support the calculation of high accuracy receive path data delay values by the TimeSync client. They are defined as logical signals intended for use with an intra-chip interface, physical instantiation of these signal is not defined." with "providing dynamic receive path data delay values to support the calculation of highly accurate receive path data delay values by the TimeSync client. Even though they are specified as logical signals intended for use with an intra-chip interface, physical instantiation of these signals are not defined."

**Response:** REJECT.

There is nothing "improper" about the quoted text. No change needed at this time.

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**Comment:** Sentence format could be improved

**Suggested Remedy:**

Change "They are defined as logical signals intended for use with an intra-chip interface, physical instantiation of these signal is not defined." to "They are defined as logical signals intended for use with an intra-chip interface. A physical instantiation of these signals is not defined."

**Response:** ACCEPT.

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**Comment:** Sentence format could be improved

**Suggested Remedy:**

Change "3.1813 is not a capability register but a configuration register" to "3.1813 is not a capability register but a configuration register"

**Response:** ACCEPT.

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**Comment:** Usually when "respectively" is used, there are two lists of equal length. In this case, there are 7 items in the first list and 2 in the second. I believe each reference in the second list applies to 2 items in the first list.

**Suggested Remedy:**

I'm not sure how to rewrite this as I don't know which register is defined in 30.13.1.1 and which is defined in 30.13.1.2. There is no way to determine this from the spec.

**Response:** ACCEPT IN PRINCIPLE.

Rewrite the sentence to "aTimeSyncCapabilityTX and aTimeSyncCapabilityRX managed objects, as defined in 30.13.1.1 and 30.13.1.2, respectively, reflecting the status of a series of MDIO capability registers (1.1800, 2.1800, 3.1800, 3.1813, 4.1800, 5.1800, and 6.1800)"
**Comment Type:** E  
**Comment Status:** A

**Comment:** Usually when "respectively" is used, there are two lists of equal length. In this case, there are 18 (?) items in the first list and 2 in the second. I believe the range in the first list refers to the first reference and then the two registers separated by a comma reference to the second reference.

**Suggested Remedy:**

- **Change:** 1.1801 through 1.1804, 1.1809, 1.1810, 2.1801 through 2.1804, 2.1809, 2.1810, 3.1801 through 3.1804, 3.1809, 3.1810, 4.1801 through 4.1804, 4.1809, 4.1810, 5.1801 through 5.1804, 5.1809, 5.1810, and 6.1801 through 6.1804, 6.1809, 6.1810, as defined in 30.13.1.3 and 30.13.1.4, respectively.
- **To:** 1.1801 through 1.1804, 2.1801 through 2.1804, 3.1801 through 3.1804, 4.1801 through 4.1804, 5.1801 through 5.1804, and 6.1801 through 6.1804, as defined in 30.13.1.3 and 1.1809, 1.1809, 1.1810, 2.1809, 2.1810, 3.1809, 3.1810, 4.1809, 4.1810, 5.1809, 5.1810, 6.1809, 6.1810, as defined 30.13.1.4.

**Response:** Response Status C

**Accept.**

**Comment Type:** E  
**Comment Status:** A

**Comment:** Usually when "respectively" is used, there are two lists of equal length. In this case, there are 18 (?) items in the first list and 2 in the second. I believe the range in the first list refers to the first reference and then the two registers separated by a comma reference to the second reference.

**Suggested Remedy:**

- **Change:** 1.1805 through 1.1808, 1.1811, 1.1812, 2.1805 through 2.1808, 2.1811, 2.1812, 3.1805 through 3.1808, 3.1811, 3.1812, 4.1805 through 4.1808, 4.1811, 4.1812, 5.1805 through 5.1808, 5.1811, 5.1812, and 6.1805 through 6.1808, 6.1811, 6.1812, as defined in 30.13.1.5 and 30.13.1.6, respectively.
- **To:** 1.1805 through 1.1808, 2.1805 through 2.1808, 3.1805 through 3.1808, 4.1805 through 4.1808, 4.1811, 4.1812, 5.1805 through 5.1808, 5.1811, 5.1812, and 6.1805 through 6.1808, 6.1811, 6.1812, as defined in 30.13.1.5 and 30.13.1.6.

**Response:** Response Status C

**Accept.**

**Comment Type:** ER  
**Comment Status:** A

**Comment:** There are inserts in table 90-1 that are not shown. (e.g., 1.1809 through 1.1810 isn’t in 802.3dc d3.0)

**Suggested Remedy:**

- Compare table 90-1 to latest draft of 802.3dc and underline inserts as appropriate.

**Response:** Response Status C

**Accept.**
The added text about multilane interfaces, "multi-PCS lane distribution", is somewhat awkward. Since distribution of the PCS already implies that there are multiple lanes, it is not really necessary to say "multi-PCS lane distribution" throughout the paragraph, and perhaps more clear to introduce the concept as 'distribution of the PCS signal to multiple lanes'.

**Suggested Remedy**

Revise the paragraph to read as follows:

If a PHY includes an FEC function or distributes the PCS signal to multiple lanes, the transmit and receive path data delays may show significant variation depending upon the position of the data delay measurement point within the FEC block and in the PCS lane distribution sequence. However, since the variation due to this effect in the transmit path is expected to be compensated by the inverse variation in the receive path, it is recommended that the transmit and receive path data delays be reported as if the data delay measurement point is at the start of the FEC block and/or PCS lane distribution sequence. For PHYs with both FEC and distribution to multiple PCS lanes, the start of the FEC block is guaranteed to coincide with the start of a PCS lane distribution sequence.

**Response**

ACCEPT IN PRINCIPLE.

See comment #251.

---

"multi-PCS lane distribution" doesn't work: we aren't discussing multiple PCSs. "multi-PCS" and "multi-FEC" aren't defined kinds of PCS and FEC. "multi-PCS-lane distribution" is clumsy. As "multi-physics" is a thing, "multi-physical" in 90A.2 is a problem.

We don't need to say "a multi-lane FEC and/or PCS lane distribution function" because there would be no distribution function if there weren't multiple lanes. It turns out that there is no need for "multi-PCS-lane distribution" or "multi-FEC-lane distribution", or "multi-lane PCS lane distribution" or "multi-lane FEC lane distribution".

Also, functions -> function.

**Suggested Remedy**

Change "an FEC and/or multi-PCS lane distribution functions" to "an FEC and/or PCS lane distribution function". Change "in the multi-PCS lane distribution sequence" to "in the PCS lane distribution sequence" (or "in the PCS or FEC lane distribution sequence") and similarly (including for FEC) throughout the document.

In 90A.2, change "multi-physical coding sublayer (PCS) lane distribution/merging" to "PCS lane distribution/merging".

**Response**

ACCEPT IN PRINCIPLE.

change "multi-PCS lanes" to "multiple PCS lanes"

See also comment #7 for deletion of statement "multi-FEC lane distribution/merging operation".

---

"PTP" should be removed

**Suggested Remedy**

delete the word "PTP"

**Response**

ACCEPT.
Here and in the next paragraph there are "the PTP data delay measurement point". This is the first time that "PTP" has appeared except for document title or abstract, where it doesn't matter so much that "Precision Time Protocol" is not defined (and 90.3 implies that it's out of scope). 93 other times we have simply "data delay measurement point".

**Suggested Remedy**
Delete "PTP" twice

**Response**
ACCEPT.

---

**Comment** 90 SC 90.7 P61 L11 #323

**Commenter**: Piers Dawe, Nvidia

**Comment Type** E: Note

**Comment Status** A: Accepted

"PTP" should be removed

**Suggested Remedy**
Delete the word "PTP"

**Response**
ACCEPT.

---

**Comment** 90 SC 90.7 P62 L37 #422

**Commenter**: Richard Tse, Microchip Technology

**Comment Type** T: Technical

**Comment Status** R: Rejected

NOTE 4 proposes to report the transmit delay on the last-departing lane, but the last paragraph on page 61 line 34-36 proposes to report the mid-point between the first-departing lane and the last-departing lane. Seems inconsistent.

**Suggested Remedy**
Clarify the consistency between NOTE 4 and the description on page 61, line 34-36.

**Response**
REJECT.

No change is proposed. As indicated in NOTE 4, this is a special case where additional benefits could be derived.

---

**Comment** 90 SC 90.7 P62 L41 #423

**Commenter**: Xiang He, Huawei Technologies

**Comment Type** E: Editorial

**Comment Status** A: Accepted

NOTE 5 has been covered by line 32-33 on page 61.

**Suggested Remedy**
Propose to delete NOTE 5

**Response**
ACCEPT.

---

**Comment** 90 SC 90.7 P61 L2 #250

**Commenter**: George Zimmerman, CME Consulting/ADI, APL Gp, Cisco, CommScope

**Comment Type** E: Editorial

**Comment Status** A: Accepted

usually a "see" goes to a cross reference. NOTE 4 is not an active cross reference. Where is NOTE 4? Is it the one on page 62? If it is, since it is part of this same subclause, and not referenced elsewhere, the separation just makes it harder to find. why not move it up to where it is relevant as part of the description?

**Suggested Remedy**
Suggest that NOTE 4 be moved up to the point where it is referenced, and simply added as text. (not a Note.)

**Response**
ACCEPT IN PRINCIPLE.

Fixed subclause to 90.7

Move NOTE 4 to under page 61, line 37. Remove "(see NOTE 4)" statement. Renumber notes as needed.
This comment assumes that implementations not supporting the MAC Merge sublayer have two allowable locations for the data delay measurement point (DDMP). Similarly, this comment assumes that implementations supporting the MAC Merge sublayer also have two allowable locations for the data delay measurement point (DDMP). If either of these assumptions is not true, then that needs to be clearly stated in the draft.

**Suggested Remedy**

Propose following changes in the table:

- For Item TS_TX, change the Status cell to "M".
- For Item TS_RX, change the Status cell to "M".
- For Item TS_T2, delete the row.
- For Item TS_R2, delete the row.

**Response**

**Response Status** C

**ACCEPT IN PRINCIPLE.**

Changes per comment. Additionally, in the "Feature" column for TS_T3 and TS_R3, add a suffix of ".indication" to names of primitives.

---

**Comment Type** E

Gratuitous capitals

**Suggested Remedy**

- Change "Timestamping Accuracy Considerations" to "Timestamping accuracy considerations".
- Change "High Accuracy Timestamping Introduction" to "High accuracy timestamping introduction" and so on. Including Table 90A-1.

**Response**

**Response Status** C

**ACCEPT.**

---

**Comment Type** E

Duplicate terms

**Suggested Remedy**

Delete one of the repeated "Timestamp Reference".

**Response**

**Response Status** C

**ACCEPT IN PRINCIPLE.**

See comment #326.

---

**Comment Type** E

The "Timestamp reference" and "Timestamp reference, first symbol after the SFD" registers have new names and these need to be updated in this sentence.

**Suggested Remedy**

Change "Timestamp reference" to "SFD data delay measurement point ability".

**Response**

**Response Status** C

**ACCEPT.**

---

**Comment Type** E

Having "Client" capitalized looks wrong in this context.

**Suggested Remedy**

Consider changing "Client" to "client".

**Response**

**Response Status** C

**ACCEPT.**
Cl 90A SC 90A.2 P67 L26 #408
Kabra, Lokesh Synopsys Inc

Comment Type E Comment Status R bucket

Comment: Comma missing

Suggested Remedy
Add comma as indicated below "subclauses 45.2.1 to 45.2.6), could lead"

Response Response Status C

REJECT.

Comma is not needed.

Cl 90A SC 90A.2 P67 L34 #343
Nicholl, Shawn Xilinx

Comment Type E Comment Status A bucket

Comment: It would be best to reference DDMP definition in 90.4.3.1.1, rather than reference to 90.7.

Suggested Remedy
Propose to change the third paragraph to:

Timestamping accuracy can also be impaired when two TimeSync Clients do not use the same data delay measurement point. As specified in 90.4.3.1.1, this standard...

Response Response Status C

ACCEPT IN PRINCIPLE.

Change the third paragraph to:

Timestamping accuracy can also be impaired when two TimeSync Clients do not use the same data delay measurement point. As specified in 90.7 and 90.4.3.1.1, there are two options for the data delay measurement point (...). The use of the beginning of the first symbol after the SFD is consistent with IEEE Std 1588 and IEEE Std 802.1AS.

Cl 90A SC 90A.3 P68 L14 #262
Dawe, Piers Nvidia

Comment Type E Comment Status A bucket

Comment: Column headings and footnotes take more space than they should

Suggested Remedy
Make the table full width, optimise the column widths. Frame has a menu item to do this.

Response Response Status C

ACCEPT.

Cl 90A SC 90A.3 P68 L38 #263
Dawe, Piers Nvidia

Comment Type T Comment Status A bucket "TimeSync message" not defined

Suggested Remedy
If this has a different name, use it. If not, explain what you mean by "a TimeSync message".

Response Response Status C

ACCEPT IN PRINCIPLE.

Change

"The path data delay of a TimeSync message is only affected when the message coincides with an alignment marker, codeword marker, or Idle insertion/removal event."

to

"The path data delay of a packet can be affected when its data delay measurement point occurs after an alignment marker, codeword marker, or Idle insertion/removal event."

Also, replace "TimeSync message" with "packet" in Annex 90A
Footnotes d and e imply that 10GBASE-R is like 1000BASE-X, and 10GBASE-X is like 1000BASE-T, which looks like a mistake, and if it isn't, is confusing.

Suggested Remedy
Use separate notes for 1000M and 10G

REJECT.
It does not imply anything about the given PHY type being the same, just about the timing impairment being similar.

Comment Type: T  Comment Status: A
"byte time": no such thing in the base document, although a couple of clauses use "octet time"

Suggested Remedy
Use the proper terminology. Maybe you mean 8 BT (bit times).

ACCEPT IN PRINCIPLE.
Change "byte time" to "octet time" (one instance in the draft)
**Comment Type** T  **Comment Status** A
PDDPD parameter should be included in the examples

**Suggested Remedy**
1. Change subclause header to "Example use of TX_NUM_UNIT_CHANGE and PDDPD"
2. Modify text for step b to the following
   "Scenario with alignment marker, codeword marker, or Idle insertion/removal in which the PDDPD parameter, which mirrors the corresponding value of TX_NUM_UNIT_CHANGE, is used to account for the Tx PCS path data delay variation, allowing the Tx PCS path data delay to be modeled as a constant."
3. Change "TX_NUM_UNIT_CHANGE" to "PDDPD" in all subsequent steps of this example

**Response**
ACCEPT.

---

**Comment Type** T  **Comment Status** A
"positive when data is inserted ahead": I think you mean when alignment marker, codeword marker, or Idle insertion/removal are inserted. These are NOT data (see Clause 4). That's the reason that this document is talking about "path data delay" rather than just "path delay."

**Suggested Remedy**
If there is a generic term for these non-data inserts, it could be used. If not, one could be invented, or for the few times it would be used, just write out "alignment marker, codeword marker, or Idle". Similarly in 90A.5.2 b iii

**Response**
ACCEPT IN PRINCIPLE.

---

**Comment Type** T  **Comment Status** A
Font far too small

**Suggested Remedy**
Fix. Also change any grey text to black.

**Response**
ACCEPT IN PRINCIPLE.

---

**Comment Type** E  **Comment Status** A
Avoid? reduce the need? negate the need?

**Suggested Remedy**
Change "negate the need" to "avoid the need"

---

**Comment Type** E  **Comment Status** A
bucket

**Suggested Remedy**
Font far too small

**Response**
ACCEPT IN PRINCIPLE.

---

**Comment Type** E  **Comment Status** A
bucket

**Suggested Remedy**
Fix. Also change any grey text to black.

**Response**
ACCEPT IN PRINCIPLE.

---

**Comment Type** E  **Comment Status** A
bucket

**Suggested Remedy**
Fix. Also change any grey text to black.

**Response**
ACCEPT IN PRINCIPLE.
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<td>If these are informative references, and outside the scope of 802.3 as 90.3 implies, why are the references dated? Obviously, reference to 1588-2008 should be changed, but do we need to exclude future revisions? The introduction to 1.4, Definitions, says “For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies”, but there is no introduction to Annex A, Bibliography</td>
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