IEEE 802.3 Maintenance Task Force
11 November 2024

Adam Healey, Broadcom Inc.

Chair, IEEE 802.3 Maintenance TF

Vice Chair, IEEE 802.3 Ethernet WG

Voting at electronic meetings

- IEEE 802.3 Operations Manual 3.4.2

There are two type of votes in the TF; votes on motions and votes in straw polls.

In face-to-face meetings where a TF is operating with membership rules for voting (see 3.3) only the TF members may make and vote on motions. In face-to-face meetings where membership rules are not in force all TF participants may make and vote on motions, subject only to the provision that they believe that they are qualified to vote on the matter before the TF. Electronic meetings that will consider motions shall be approved by the WG Chair prior to the meeting announcement. In such meetings only IEEE 802.3 Working Group members may make and vote on motions. If a motion is not approved by unanimous consent it shall be taken as a roll call vote.

In all cases, regardless of any membership rules that may or may not be in force, all participants who feel qualified may participate in a straw poll.

IEEE 802.3 Maintenance Task Force

General decorum

- An officer is permitted to make an audio or slideshow recording of this meeting exclusively for the purpose of generating minutes which shall not be copied or distributed. IEEE 802.3 meetings do not use this option. Recording of the proceedings by any other participant or observer, in part or in whole, via any means, is prohibited. (*January 2020 IEEE-SA Standards Board Ops Manual 5.3.3.2*)

- Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (*January 2020 IEEE-SA Standards Board Ops Manual 5.3.3.3*)

- Please observe proper decorum in meetings

Teleconference decorum

- **Please MUTE if you are not speaking**
- The conference tool in use for this meeting has a chat function. Public, and in some cases private chats, are available to the teleconference host after the meeting, and should be treated as a public statement that could appear in the minutes. The public chat function shall only be used for official business related to the meeting, as determined by the Chair. Parallel discussions between participants using the public chat function can be a distraction from the meeting and the Chair or designee will ask participants to cease such discussions should they occur.

Agenda

- Review and approve agenda

- Approve meeting minutes

- Guidelines for IEEE-SA Meetings

- IEEE-SA Copyright policy

- Participation in IEEE 802 Meetings

- Attendance procedures

- Consideration of maintenance requests

- Future meetings

Agenda motion

- Motion #1: Approve the agenda
  - M: D. Law   S: L. Kabra
  - Passed by unanimous consent at 1:39 pm PST

- July 2024 minutes were posted on 16 July 2024

- Motion #2: Approve the July 2024 minutes
  - M: D. Law   S: L. Kabra
  - Passed by unanimous consent at 1:40 pm PST

GUIDELINES FOR IEEE SA MEETINGS

- All IEEE SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.

  - Don't discuss the interpretation, validity, or essentiality of patents/patent claims.

  - Don't discuss specific license rates, terms, or conditions.

    - Relative costs of different technical approaches that include relative costs of patent licensing terms may be discussed in standards development meetings.

      - Technical considerations remain the primary focus.

  - Don't discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.

  - Don't discuss the status or substance of ongoing or threatened litigation.

  - Don't be silent if inappropriate topics are discussed. Formally object to the discussion immediately.

For more details, see *IEEE SA Standards Board Operations Manual*, clause 5.3.10 and *Antitrust and Competition Policy: What You Need to Know* at
http://standards.ieee.org/develop/policies/antitrust.pdf

If you have questions, contact the IEEE SA Standards Board Patent Committee Administrator at patcom@ieee.org

IEEE SA STANDARDS ASSOCIATION

08 June 2021

◆IEEE

INSTRUCTIONS FOR CHAIRS OF STANDARDS DEVELOPMENT ACTIVITIES

At the beginning of each standards development meeting the chair or a designee is to:

- Show the following slides (or provide them beforehand)
- Advise the standards development group participants that:
- IEEE SA's copyright policy is described in Clause 7 of the IEEE SA Standards Board Bylaws and Clause 6.1 of the IEEE SA Standards Board Operations Manual;
- Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE SA Copyright Policy;
- Instruct the Secretary to record in the minutes of the relevant meeting:
- That the foregoing information was provided and that the copyright slides were shown (or provided beforehand).

IEEE SA STANDARDS ASSOCIATION

◆IEEE 2

IEEE SA COPYRIGHT POLICY

By participating in this activity, you agree to comply with the IEEE Code of Ethics, all applicable laws, and all IEEE policies and procedures including, but not limited to, the IEEE SA Copyright Policy.

- Previously Published material (copyright assertion indicated) shall not be presented/submitted to the Working Group nor incorporated into a Working Group draft unless permission is granted.
- Prior to presentation or submission, you shall notify the Working Group Chair of previously Published material and should assist the Chair in obtaining copyright permission acceptable to IEEE SA.
- For material that is not previously Published, IEEE is automatically granted a license to use any material that is presented or submitted.

IEEE SA STANDARDS ASSOCIATION

◆IEEE 3

IEEE SA COPYRIGHT POLICY

- The IEEE SA Copyright Policy is described in the IEEE SA Standards Board Bylaws and IEEE SA Standards Board Operations Manual

  - IEEE SA Copyright Policy, see
    Clause 7 of the IEEE SA Standards Board Bylaws
    https://standards.ieee.org/about/policies/bylaws/sect6-7.html#7
    Clause 6.1 of the IEEE SA Standards Board Operations Manual
    https://standards.ieee.org/about/policies/opman/sect6.html

- IEEE SA Copyright Permission
  - https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/permissionltrs.zip

- IEEE SA Copyright FAQs
  - http://standards.ieee.org/faqs/copyrights

- IEEE SA Best Practices for IEEE Standards Development
  - http://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/best_practices_for_ieee_standards_development_051215.pdf

- Distribution of Draft Standards (see 6.1.3 of the SASB Operations Manual)
  - https://standards.ieee.org/about/policies/opman/sect6.html

IEEE SA STANDARDS ASSOCIATION

◆IEEE 4

Participant behavior in IEEE-SA activities is guided by the IEEE Codes of Ethics & Conduct

- All participants in IEEE-SA activities are expected to adhere to the core principles underlying the:
  - IEEE Code of Ethics
  - IEEE Code of Conduct

- The core principles of the IEEE Codes of Ethics & Conduct are to:
  - *Uphold the highest standards of integrity, responsible behavior, and ethical and professional conduct*
  - *Treat people fairly and with respect, to not engage in harassment, discrimination, or retaliation, and to protect people's privacy.*
  - *Avoid injuring others, their property, reputation, or employment by false or malicious action*

- The most recent versions of these Codes are available at http://www.ieee.org/about/corporate/governance

Participants in the IEEE-SA "*individual process*" shall act independently of others, including employers

- The IEEE-SA Standards Board Bylaws require that "*participants in the IEEE standards development individual process shall act based on their qualifications and experience*"

- This means participants:
  - **Shall act & vote** based on their personal & independent opinions derived from their expertise, knowledge, and qualifications
  - **Shall not act or vote** based on any obligation to or any direction from any other person or organization, including an employer or client, regardless of any external commitments, agreements, contracts, or orders
  - **Shall not direct** the actions or votes of other participants or retaliate against other participants for fulfilling their responsibility to act & vote based on their personal & independently developed opinions

- By participating in standards activities using the "*individual process*", you are deemed to accept these requirements; if you are unable to satisfy these requirements then you shall immediately cease any participation

IEEE-SA standards activities shall allow the fair & equitable consideration of all viewpoints

- The IEEE-SA Standards Board Bylaws (clause 5.2.1.3) specifies that "*the standards development process shall not be dominated by any single interest category, individual, or organization*"
  - This means no participant may exercise *"authority, leadership, or influence by reason of superior leverage, strength, or representation to the exclusion of fair and equitable consideration of other viewpoints"* or "*to hinder the progress of the standards development activity*"

- This rule applies equally to those participating in a standards development project and to that project's leadership group

- Any person who reasonably suspects that dominance is occurring in a standards development project is encouraged to bring the issue to the attention of the Standards Committee or the project's IEEE-SA Program Manager

Attendance procedures

- IEEE Meeting Attendance Tool
  - http://imat.ieee.org/

- For more information, please see…
  - https://www.ieee802.org/3/minutes/nov24/1124_imat.pdf

Consideration of maintenance requests

Maintenance request status

- 35(!) new requests received since the July 2024 meeting
- 79 open maintenance requests
- Current status of open requests
    - Approved   0
    - Balloting   0
    - Ready for ballot   40
    - Awaiting clarification   3
    - Errata   0
    - To be categorized   36
- Also see http://www.ieee802.org/3/maint/requests/open_num.html

Maintenance requests to be categorized

- Deadline for consideration at this meeting was 7 October
- New requests to be considered this week

No.	Date	Standard	Reference	Subject
1436	15-Jul-24	802.3ck-2022	162.9.4.7	Correct reference
1437	20-Aug-24	802.3df-2024	45.2.3.1	Update to include 800 Gb/s
1438	20-Aug-24	802.3df-2024	45.2.3.2.7	Update to include 800 Gb/s
1439	20-Aug-24	802.3df-2024	45.2.3.8	Update to include 800 Gb/s
1440	20-Aug-24	802.3df-2024	45.2.3.15.1	Update to include 800 Gb/s
1441	20-Aug-24	802.3df-2024	45.2.4.13	Update to include 800 Gb/s
1442	30-Aug-24	802.3ch-2023	165.4.4.2	Correct min_wait_time scope
1443	10-Sep-24	802.3cz-2023	166.6.4.8.4	Correct hisotgram normalization
1444	10-Sep-24	802.3cz-2023	166.6.2.2	Correct reference and add clarity
1445	17-Sep-24	802.3-2022	148.4.4.2	Alphabetize list

New requests, continued

No.	Date	Standard	Reference	Subject
1446	17-Sep-24	802.3-2022	148.4.4.4	Alphabetize list
1447	4-Oct-24	802.3-2022	149.3.9	Exchange PHY health instead of OAM status
1448	4-Oct-24	802.3-2022	149.3.9	Add "shall" to OAM operational requirements
1449	4-Oct-24	802.3-2022	149.3.9.2.1	PHY frame vs. RS_FEC frame
1450	4-Oct-24	802.3-2022	149.3.9.2.1	Add "shall" to dummy symbol handling
1451	4-Oct-24	802.3-2022	149.3.9.2.1	Add "shall" to transmission order
1452	4-Oct-24	802.3-2022	149.3.9.2.1	Replace D8 with explicit symbol/bit index
1453	4-Oct-24	802.3-2022	149.3.9.2.3	Tie text more closely with Figure 149-22
1454	4-Oct-24	802.3-2022	149.3.9.2.4	Tie text more closely with Figure 149-22
1455	4-Oct-24	802.3-2022	149.3.9.2.11	Description contains unrelated content
1456	4-Oct-24	802.3-2022	149.3.9.2.15	Add "shall" to SNR<1:0> handling for LPI
1457	4-Oct-24	802.3-2022	97.3.8.2.14	Add "shall" to SNR<1:0> handling for LPI
1458	4-Oct-24	802.3-2022	149.3.9.4.2	Subclause has no content
1459	4-Oct-24	802.3-2022	149.3.9.4.3	Redundant "shall" in rx_exp_toggle definition

New requests, continued

No.	Date	Standard	Reference	Subject
1460	4-Oct-24	802.3-2022	Figure 149–24	Add rx_boundary assignment to state diagram
1461	4-Oct-24	802.3-2022	Figure 149–25	Add tx_boundary assignment to state diagram
1462	4-Oct-24	802.3-2022	149.3.9.4.3	PHY frame vs. RS_FEC frame
1463	4-Oct-24	802.3-2022	149.3.9.4.5	Rewrite definition of function rs()
1464	4-Oct-24	802.3-2022	149.3.9.4.5	Rewrite definition of function rs_correct()
1465	4-Oct-24	802.3-2022	149.3.9.2.13	Correct bit index
1466	4-Oct-24	802.3-2022	149.3.9.4.3	Correct reference
1467	4-Oct-24	802.3-2022	Figure 149–24	Missing ")" in state transition condition
1468	4-Oct-24	802.3-2022	149.3.9.2.7	Toggle validity
1469	4-Oct-24	802.3-2022	149.3.9.2.11	OAM message data validity
1470	4-Oct-24	802.3-2022	149.3.9.2.10	OAM message number validity

Consideration of maintenance requests, 1 of 9

No.	Date	Standard	Reference	Synopsis	Complete?	In scope?	Status
1421	11-Oct-23	802.3-2022	97.4.2.4	No update.	N		I
1429	2-Apr-24	802.3-2022	46.3.4.3	No update.	N		R
1433	14-May-24	802.3cx-2023	90.7.1	No update.	N		I
1436	15-Jul-24	802.3ck-2022	162.9.4.7	Change reference to Table 162-13 to Table 120D-4. Table 162-13 is not for the JRMS and Jnu test pattern.	Y	Y	B
1437	20-Aug-24	802.3df-2024	45.2.3.1	Add encoding for "800 Gb/s" to speed selection field (3.0.5:2, also 4.0.5:2 and 5.0.5:2). Add encoding for "Select 800GBASE-R PCS type" to PCS type selection field.	Y	Y	B
1438	20-Aug-24	802.3df-2024	45.2.3.2.7	Add "800GBASE-R" the list of PCSs to which the PCS receive link status bit pertains.	Y	Y	B
1439	20-Aug-24	802.3df-2024	45.2.3.8	Reassign reserved bit to indicate support for the 800GBASE-R PCS type.	Y	Y	B

No.	Date	Standard	Reference	Synopsis	Complete?	In scope?	Status
1440	20-Aug-24	802.3df-2024	45.2.3.15.1	Add reference to the 800GBASE-R PCS in the list of PCS to which the receive link status bit pertains. Similarly in 45.2.4.12.1 and 45.2.5.12.1 (PHY and DTE XS respectively).	Y	Y	B
1441	20-Aug-24	802.3df-2024	45.2.4.13	Add 800GBASE-R to the list of PHYs for which the test-pattern control register is required. Similarly in 45.2.5.13.	Y	Y	B
1442	30-Aug-24	802.3ch-2023	165.4.4.2	Remove PCS_DATA from the list of states associated with min_wait_timer. Review of Figure 165-22 confirms that min_wait_timer is not started in the PCS_DATA state. Similarly in 149.4.4.2.	Y	Y	B
1443	10-Sep-24	802.3cz-2023	166.6.4.8.4	Normalize histogram to Ns (number of elements in signal sequence) instead of Nh (number of bins in the histogram).	Y	Y	B
1444	10-Sep-24	802.3cz-2023	166.6.2.2	Reference to 166.3.4 should be to 166.6.1.1.1. Also re-arrange and amend content of the sublcause to add clarity.	Y	Y	B
1445	17-Sep-24	802.3-2022	148.4.4.2	Alphabetize variable list.	Y	Y	B
1446	17-Sep-24	802.3-2022	148.4.4.4	Alphabetize timer list.	Y	Y	B

No.	Date	Standard	Reference	Synopsis	Complete?	In scope?	Status
1447	4-Oct-24	802.3-2022	149.3.9	"However, if EEE is implemented, then the OAM frame exchange function is implemented to exchange, at a minimum, the link partner PHY health~~OAM status~~." This would make more sense since PHY health is checked during low-power idle, but it is not clear if that is taken for granted and that OAM status is also to be exchanged.	Y		R
1448	4-Oct-24	802.3-2022	149.3.9	"OAM shall be~~is~~ operational as long as both PHYs implement this mechanism and the link is up. It shall continue~~s~~ to be operational during Low Power Idle, albeit the information is transferred at a slower rate during the refresh cycle." Add PICS. The proposed requirement does not appear to be enforceable since 1) "implementation" is not an externally observable trait and 2) the term "operational" does not have a clear definition. For item 1) reference to advertisement of the capability using e.g., the "MultiGBASE-T1 OAM ability" may be more appropriate. For item 2) "operation" apparently means that OAM frames may be exchanged using the mechanism defined in this subclause although there does not appear to be any requirement to do so (except perhaps for EEE support) or how often OAM frames should be exchanged.	N		R

Consideration of maintenance requests, 4 of 9

No.	Date	Standard	Reference	Synopsis	Complete?	In scope?	Status
1449	4-Oct-24	802.3-2022	149.3.9.2.1	"One OAM symbol is placed in the 10-bit OAM field in each RS-FECPHY frame during normal power operation in the data mode. One OAM symbol is placed in the 10-bit OAM field in each refresh cycle during Low Power Idle. The sixteen OAM symbols are consecutively inserted into sixteen consecutive RS-FECPHY frames and/or refresh cycles." Subsequent text appears to confirm that "RS-FEC frame" is correct. [Note that a "PHY frame" is not clearly defined but appears to be equivalent to a block of 8 RS-FEC frames?]	N		R
1450	4-Oct-24	802.3-2022	149.3.9.2.1	"The dummy OAM symbol is all 0's and its value shall beis ignored at the receiver." Clearly indicate that it is a normative behavior for the value of the dummy OAM symbol to be ignored. Add PICS.	Y		R

No.	Date	Standard	Reference	Synopsis	Complete?	In scope?	Status
1451	4-Oct-24	802.3-2022	149.3.9.2.1	"Bit 0 of each OAM symbol shall be~~is~~ the first bit transmitted in the 10-bit OAM field. Symbol 0 shall be~~is~~ the first symbol transmitted in each OAM frame." Replace OAM2 with a new PICS that reflects these transmitter order requirements. However, the replacement would results in no PICS requirement covering that symbol<0> should be inserted in the first RS-FEC frame of an RS-FEC super-frame when L=2 or L=4. It seem that the new requirement should be a separate PICS item.	N		R
1452	4-Oct-24	802.3-2022	149.3.9.2.1	"The OAM frame boundary can be found at the receiver by looking at bit OAM<15:0><8>~~D8~~." Add clarity as to what is meant by "bit D8".	Y	Y	B
1453	4-Oct-24	802.3-2022	149.3.9.2.3	"The Ping RX (PingRx) is..." to tie the text more closely to Figure 149-22.	Y	Y	B
1454	4-Oct-24	802.3-2022	149.3.9.2.4	"The Ping TX (PingTx) is..." to tie the text more closely to Figure 149-22.	Y	Y	B
1455	4-Oct-24	802.3-2022	149.3.9.2.11	149.3.9.2.11 pertains to "OAM message data" but it includes seemingly unrelated content about "OAM message acknowledge" (Ack). The Ack-related content can be removed from 149.3.9.2.11 since it is addressed in 149.3.9.2.8.	Y	Y	B

No.	Date	Standard	Reference	Synopsis	Complete?	In scope?	Status
1456	4-Oct-24	802.3-2022	149.3.9.2.15	"If a PHY receives SNR<1:0> set to 01 by its link partner, then it shall not~~cannot~~ enter into LPI in the egress direction." Clearly indicate the behavior is normative. Add PICS. It is noted that there is a PICS for a similar requirement in Clause 97 (97.11.8 OAM7).	Y		R
1457	4-Oct-24	802.3-2022	97.3.8.2.14	"If a PHY receives SNR<1:0> set to 01 by its link partner, then it it shall not~~cannot~~ enter into LPI in the egress direction." There is already a PICS for this behavior (97.11.8 OAM7).	Y		R
1458	4-Oct-24	802.3-2022	149.3.9.4.2	149.3.9.4.2 has no content and can be removed.	Y	Y	B
1459	4-Oct-24	802.3-2022	149.3.9.4.3	In rx_exp_toggle definition, "This is normally the opposite value of the current toggle value, but is~~shall~~ reset on error conditions...". The shall is redundant with the normative requirement that implementations conform to the state diagrams in Figures 149-24 and 149-25 (see 149.3.9). The change would align it to similar text in Clause 97 (see 97.3.8.4.3).	Y		R

No.	Date	Standard	Reference	Synopsis	Complete?	In scope?	Status
1460	4-Oct-24	802.3-2022	Figure 149-24	Add action "rx_boundary <= FALSE" to state CHECK_READ. The purpose is to add clarity about when the variable is set to FALSE. However, the definition of rx_boundary in 149.3.9.4.3 seems clear that it is set to FALSE when the "receive stream is not at a boundary end". The definition indicates the variable is set to TRUE at the boundary end and is FALSE otherwise.	Y		R
1461	4-Oct-24	802.3-2022	Figure 149-25	Add action "tx_boundary <= FALSE" to state CHECK_ACK and TRANSMIT symbol states. The purpose is to add clarity about when the variable is set to FALSE. However, the definition of tx_boundary in 149.3.9.4.3 seems clear that it is set to FALSE when the "transmit stream is not at a boundary end". The definition indicates the variable is set to TRUE at the boundary end and is FALSE otherwise.	Y		R
1462	4-Oct-24	802.3-2022	149.3.9.4.3	"This variable is set to TRUE whenever the transmit data stream reaches the start of a RS-FEC~~PHY~~ frame and a dummy OAM symbol is not transmitted per..." Refer to similar text in the definition of rx_boundary which includes "This variable is set to TRUE whenever the receive data stream reaches the end of a Reed-Solomon frame and a dummy OAM symbol is not expected...".	Y	Y	R

Consideration of maintenance requests, 8 of 9

No.	Date	Standard	Reference	Synopsis	Complete?	In scope?	Status
1463	4-Oct-24	802.3-2022	149.3.9.4.5	Rewrite definition of function "rs" to clearly identify function inputs and outputs. There is no change to the operation of the function.	Y		R
1464	4-Oct-24	802.3-2022	149.3.9.4.5	Rewrite definition and usage of function "rs_correct" to clearly identify function inputs and outputs. There is no change to the operation of the function.	Y		R
1465	4-Oct-24	802.3-2022	149.3.9.2.13	tx_RSmessage<9:0> should be tx_RSmessage<3259:3250> which is confirmed by the reference to 149.3.2.2.17.	Y	Y	B
1466	4-Oct-24	802.3-2022	149.3.9.4.3	In the definition of mr_tx_valid, "mr_rx_lp_message_num[3:0]" should be "mr_tx_message_num[3:0]". This is clear from other definitions.	Y	Y	B
1467	4-Oct-24	802.3-2022	Figure 149-24	Missing ")" at the end of the transition condition from CHECK_READ and BAD_FRAME. It should be "(rx_cnt = 16) * ((rs_check = BAD) + !frame_boundary)".	Y	Y	B
1468	4-Oct-24	802.3-2022	149.3.9.2.7	Remove "This bit is valid only if Valid is set to 1." The statement at the end of 149.3.9.2.7 seems unnecessary since Table 149-8 assigns a description to all possible combinations of toggle and valid bits.	Y		R

Consideration of maintenance requests, 9 of 9

No.	Date	Standard	Reference	Synopsis	Complete?	In scope?	Status
1469	4-Oct-24	802.3-2022	149.3.9.2.11	Add "These bits are valid only if Valid is set to 1." to the definition of "OAM message data". This seems consistent with the operation of state diagrams in Figures 149-24 and 149-25.	Y		R
1470	4-Oct-24	802.3-2022	149.3.9.2.10	Add "These bits are valid only if Valid is set to 1." to the definition of "OAM message number". This seems consistent with the operation of state diagrams in Figures 149-24 and 149-25.	Y		R

Future meetings

- Next meeting is expected to occur during the January 2025 IEEE 802.3 Working Group interim meeting series
- Meeting details will be announced on the Task Force reflector

Adjourn