Editor's Report
60802 Draft 1.3

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IEEE802.1 Virtual Plenary

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Current Status

- All comments have been implemented in d1.3
- For the cases in which a contribution is expected, an editor's note has been added as a placeholder.
- Contributions expected:
  - Security - (Initial contribution expected for d1.3)
  - Management model for bridges and end stations in a single chassis (Contribution expected for d1.3)
  - Further refinement of the Management Model (Contribution expected for d1.3)
  - Inclusion of the FLC contribution regarding discovery and time sync to the 60802 draft (Contribution expected for d1.3)
  - Data Sheet Discussion (Contribution likely not ready for d1.3)
  - Diagnostics (Contribution likely not ready for d1.3)

Timeline

- We are behind the most current timeline. We may wish to consider which contributions are ready for inclusion in the draft and when to proceed with a TG ballot as there is already a great deal of new material in the draft.

TG/WG ballot drafts:	Date:
TG D1.3	March 2021
TG D1.4	Oct 2021
WG D2.0	early 2022
WG D2.1 … 2.n	
IEEE SA D3.0	mid to end 2022

Gaps

1. Regular synchronization of .1Qbv “tick” event added to the 802.1Q-2018 Time-aware shaper (i.e. which clock advances the gate control list – see 8.6.9.4.16) possibly in an 802.1Q maintenance item.

   - http://www.ieee802.org/1/files/public/docs2018/60802-stanica-qbv-statemachine-0918-v03.pdf

2. Network diagnostic – based on Gunter’s contribution: (http://www.ieee802.org/1/files/public/docs2018/60802-Steindl-NetworkDiagnostics-0718-v01.pdf).

   Note: PM (Y.1731) should be investigated as a possible solution to this problem. Please refer to comments 391, 389, 51 and 53 of http://www.ieee802.org/1/files/private/60802-drafts/d1/60802-d1-1-dis-v01.pdf

3. Synchronization – base on Gunter’s contribution. (one gap has been identified which may result in an 802.1AS amendment - i.e. should announce and signaling messages be mandatory)? (http://www.ieee802.org/1/files/public/docs2018/60802-Steindl-Synchronization-0718-v03.pdf)

4. Do we need a standardized TLV for LLDP to identify the TSN domain? This work can potentially be done as part of P802.1Qdj.

   (see: https://www.ieee802.org/1/files/public/docs2020/dj-farkas-tsn-domain-boundary-information-1220-v01.pdf).

Gaps

5. How do we deal with destination MAC address constraints? Defined range of stream destination MAC address, do we get our own OUI?

    - http://www.ieee802.org/1/files/public/docs2018/60802-Steindl-DaMacConstraints-0718-v02.pdf

6. The JP needs to consider whether a dependency on the unpublished IEEE Draft Standard P802.1CS, *IEEE Draft Standard for Local and metropolitan area networks—Link-local Registration Protocol,* and P802.1Qdd is appropriate.

7. IEEE Std 802.3 currently mandates the use of certain MDI connectors. Industrial Automation often uses other connectors defined by other standards bodies.

8. A definition for the BMEA is needed.

9. Item j) in 5.4 of IEEE Std 802.1AS-2020 list performance requirements that are not based upon industrial requirements. This item should either be optional or prohibited based upon the outcome of the on-going time synchronization simulations.

Gaps

10. Note that clause 99 in IEEE Std 802.3-2018, which provides “support for Frame Preemption as defined in IEEE Std 802.1Q.” (clause 99.1.1.), “specifies an optional MAC Merge sublayer for use with a pair of full-duplex MACs and a single PHY operating at 100 Mb/s or higher on a point-to-point link” (clause 99.1), defines (in clause 99.3) an specific packet format (MAC Merge Packet or mPacket), and the mPacket format is indicated by the value of the SMD (clause 99.3.3) which is the Start of Mpacket Delimiter. It is the editor's opinion that mPacket format is NOT compatible with the one in Clause 3.1.1 of the standard. The fact that the Clause 99 and Clause 3.1.1 packet format, which is the one on which most older PHY technologies were developed, are not compatible, will cause problems for some of those PHY technologies. For instance, 10BASE-T will not support mPackets, because it does not have a

PCS layer. Therefore, if you change the SFD (Start of Frame Delimiter, in the clause 3.1.1 MAC frame) with a SMD, the PHY will not detect the start of the frame, and that frame will be missed/incorrect when passed on to the MAC reconciliation sub-layer. The 10BASE-T1L standard has a PCS layer and should therefore work like 1000BASE-T and 100BASE-TX regarding pre-emption. However, older PHY technologies, like 10BASE-T, likely will not. Preemption should be tied to MAU type in the case of 10 Mb/s data rates.

11. We need a standardized definition data model outlining how the manufacturer can state the bridge forwarding delays in the PCS proforma (See: https://www.ieee802.org/1/files/public/docs2020/60802-enzinger-switch-timing-parameters-for-datsheets-0620-v01.pdf)

12. 802.1AS: Do we need a constraint on Mean Link Delay Thresh, e.g. less than or equal to 1 us?

Gaps

13. 802.1AS: Security considerations, e.g. gPTP message security is optional but if implemented then it should follow the IEEE1588-2019 message security model.

14. A management approach for distributed configuration is needed.

15. YANG module for configuration of RSTP seems to be missing.

16. A contribution regarding the details of integrating RSTP with VLANs is requested.

Summary

- The 60802 TSN Profile is behind the current timeline (release to SA Ballot in late 2022)
- Still considerable work ahead
  - Further refinement of the management model
  - Discovery and management of the bridges and end stations in a bridged end station model.
  - Distributed management model
  - Security model
- Should we consider a TG Ballot based upon the new material or some subset of the expected contributions?
- We need to establish a plan for resolving each of the identified “gaps”.

Thank you