

IEEE 802.3 Ethernet Working Group  
**DRAFT** Liaison Communication

Source: IEEE 802.3 Working Group<sup>1</sup>

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Subject: Liaison Communication – Updates to Home Network Transport (HNT) Standards  
Overview and Work Plan

Approval: Agreed to at IEEE 802.3 plenary meeting, Orlando, FL, USA, 9 Nov 2017

Dear Colleagues,

Thank you for the opportunity to update the IEEE 802.3 information found in Clause 6 of the HNT Overview and Work Plan, Version 6. The revision of IEEE Std 802.3 is still on track for completion in 2018. We anticipate the revision project will merge the approved corrigendum, the nine approved amendments and two additional proposed amendments. Other in-process proposed amendments will become proposed amendments to the resulting IEEE Std 802.3-201x (year anticipated to be 2018) once the revision project is approved.

The IEEE P802.3cg Physical Layer Specifications and Management Parameters for 10 Mb/s Operation over Single Balanced Twisted-pair Cabling and Associated Power Delivery project has observed during its ongoing development, interest in applying the PHY type for communication with Internet of Things devices, including smart home devices. Therefore, this project would be appropriate to include in the list of proposed amendments relevant to HNT.

The current work plan includes detailed status for some of the proposed projects. IEEE P802.3bt has progressed from Working Group ballot to the Sponsor ballot stage.

The detailed status of other HNT relevant projects is still accurate.

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<sup>1</sup> This document solely represents the views of the IEEE 802.3 Working Group, and does not necessarily represent a position of the IEEE, the IEEE Standards Association, or IEEE 802.

Attached for your consideration are minimal edits to the current document text to implement updates described above.

Thank you for your continuing interest in the work of IEEE 802.3.

Sincerely,

David Law

Chair, IEEE 802.3 Ethernet Working Group

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## Update to the IEEE 802.3 table cell of HNT Standards Overview and Work Plan, Version 6

WG – IEEE 802.3 Ethernet Working Group

A revision project for IEEE Std 802.3 is underway. This next revision will merge the corrigendum, approved maintenance changes, the nine approved amendments plus **three-two** more amendments currently in sponsor ballot **or pending final approval** with the IEEE Std 802.3-2015 document. This revision project is anticipated to complete in 2018.

IEEE Std 802.3-2015, Standard for Ethernet is the current revision.

IEEE Std 802.3-2015/Cor 1-2017 (IEEE 802.3ce) Corrigendum 1: Multi-lane Timestamping corrects ambiguities in IEEE Std 802.3-2015.

IEEE Std 802.3-2015 currently has nine approved amendments. There also are in process, additional proposed amendments to the standard.

The following are example HNT applicable technologies in IEEE Std 802.3-2015 (including its amendments):

- The 10BASE-T, 100BASE-TX and 1000BASE-T specifications for operation over various grades of twisted pair cabling have long been used as a home networking technology, and they continue to be applicable.
- Home gateways typically include both IEEE Std 802.11 specified capabilities and either 10/100 Mb/s or 10/100/1000 Mb/s Ethernet ports.
- 2.5GBASE-T, 5GBASE-T and 10GBASE-T provide a migration path for higher bandwidth home networks.
- Some Ethernet port types would be applicable to HNT needs though use is not common today. For example BASE-T port types are not appropriate for outdoor cable installations, but fiber optic port types would be acceptable.
- For access to the home, the approved standard includes various speeds of operation for Ethernet Passive Optical Networks.
- The standard also includes DTE Power via the MDI (more popularly called Power over Ethernet) capabilities applicable to HNT (e.g., to provide power to security equipment).

The following approved amendments are relevant to HNT:

- IEEE Std 802.3br-2016, (Amendment 5), *Specification and Management Parameters for Interspersing Express Traffic (IET)* adds capabilities to reduce message latency for time sensitive networking, which among other things provides enhanced capabilities for multimedia, gaming and other applications becoming more common in the home.
- IEEE Std 802.3bn-2016, (Amendment 6), *Physical Layer Specifications and Management Parameters for Ethernet Passive Optical Networks Protocol over Coax (EPoC)* includes new coaxial cable network access capabilities.
- IEEE Std 802.3bz-2016, (Amendment 7), *Media Access Control Parameters, Physical Layers, and Management Parameters for 2.5 Gb/s and 5 Gb/s Operation, Types 2.5GBASE-T and 5GBASE-T* includes new speeds of operation between 1 Gb/s and 10 Gb/s speeds on twisted pair, providing additional migration options which will likely find acceptance where higher than 1 Gb/s operation is needed within the home.
- IEEE Std 802.3bv-2017 (Amendment 9), *Gigabit Ethernet over Plastic Optical Fiber*, specifically addresses in-home networking with 1000BASE-RHA. This port type targets providing an easier to install non-conductive media option for home network needs.

Other projects and study groups adding capabilities to Ethernet that are relevant to HNT:

- IEEE P802.3bt, *DTE Power via MDI over 4-Pair* is currently in **Working Group Sponsor** ballot, progressing toward 2018 approval. This project will support devices requiring more power (Watts) than currently supported in IEEE Std 802.3 specifications.
- IEEE P802.3ca *25 Gb/s, 50 Gb/s, and 100 Gb/s Ethernet Passive Optical Networks Task Force* is developing a draft that will focus on development of symmetric and asymmetric data rate 25G-EPON, 50G-EPON, and 100G-EPON PHYs, supporting operation over point-to-multipoint fiber-based subscriber access networks.
- The IEEE P802.3.2 (IEEE 802.3cf) *YANG Data Model(s) Task Force* is developing a draft standard for YANG data models for Ethernet.
- **The IEEE P802.3cg 10 Mb/s Operation over Single Balanced Twisted-pair Cabling and Associated Power Delivery Task Force** is developing a draft. There has been significant interest within the project in applying this new port type for Internet of Things devices including IOT smart home devices.