

IEEE 802.3 Ethernet Working Group Liaison Communication

Source: IEEE 802.3 Working Group¹

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Subject: Liaison response to ITU-T Study Group 15 from IEEE 802.3 on Home Network
Transport (HNT) Standards Overview and Work Plan

Approval: Agreed to at IEEE 802.3 Interim meeting, Fort Worth, TX, USA, 15th Sept 2016

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. Some of the active projects described in the February 2016 update of this document are now approved amendments; and some new activities relevant to HNT have been added to the work items in the IEEE 802.3 Working Group.

Attached is updated IEEE 802.3 information for your consideration for inclusion in the next issue of the document. We look forward to providing updates in the future.

Sincerely,
David J Law
Chair, IEEE 802.3 Ethernet Working Group

¹ 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.

Update to the IEEE 802.3 table cell of HNT Standards Overview and Work Plan

IEEE Std 802.3-2015, *Standard for Ethernet* is the current revision. IEEE Std 802.3-2015 has a number of approved amendments. (Not all amendments are published as there is a delay between approval of an amendment and its publication.) There also are a number of proposed amendments to the standard.

The following are example applicable technologies in IEEE Std 802.3-2015:

- The 10BASE-T, 100BASE-TX and 1000BASE-T specifications for operation over various grades of twisted pair cabling have long been used as an indoor 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.
- 10GBASE-T provides 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 technologies, 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 power security equipment).

The following approved amendments and amendments pending approval 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-201x (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-201x (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.

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

- IEEE P802.3bv (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.
- IEEE P802.3bv is in the Sponsor ballot stage, with the Task Force working to allow approval by March 2017.
- IEEE P802.3bt DTE Power via MDI over 4-Pair is currently in Working Group 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 working to create 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 anticipated IEEE P802.3.2 (IEEE 802.3cf) YANG Data Model(s) Task Force will focus on development of a draft standard for YANG data models for Ethernet.