

IEEE 802.3 Ethernet Working Group Liaison Communication

Source: IEEE 802.3 Working Group¹

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Subject: Liaison reply to liaison letter from ISO/IEC JTC 1/SC 25/WG 3 to IEEE 802.3 (SC25 N 2099 dated 2013-03-08) regarding a technical report for 40 Gbit/s cabling systems

Date: July 18, 2013

Approval: Agreed to at IEEE 802.3 Plenary meeting, Geneva, Switzerland, July 18, 2013

Dear Dr Oehler,

Thank you for the liaison letter from your meeting in Ixtapa, Mexico 2013-02-25/03-01. This was assigned to the IEEE P802.3bq 40GBASE-T Task Force which was established in May 2013. Project documentation may be found at <http://www.ieee802.org/3/bq/index.html>.

Thank you also for providing copies of the ISO/IEC 11801-99-1 PDTR with an invitation for Task Force members to review and comment. We have made this available to Task Force members via a secure area of our web site. Our liaison officer, Alan Flatman, provided a detailed overview of this document at our meeting in May.

The project objectives for 40GBASE-T are as follows:

- Support full duplex operation only
- Preserve the 802.3 / Ethernet frame format utilizing the 802.3 MAC

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.

- Preserve minimum and maximum Frame Size of current 802.3 standard
- Support a BER better than or equal to 10^{-12} at the MAC/PLS service interface
- Support Auto-Negotiation (Clause 28)
- Support Energy Efficient Ethernet (Clause 78)
- Support local area networks using point-to-point links over structured cabling topologies, including directly connected link segments
- Do not preclude meeting FCC and CISPR EMC requirements
- Support a data rate of 40 Gb/s at the MAC/PLS Service Interface
- Define a link segment based upon copper media specified by ISO/IEC JTC1/SC25/WG3 and TIA TR42.7 meeting the following characteristics:
 - 4-pair, balanced twisted-pair copper cabling
 - up to 2 connectors
 - up to at least 30 m
- Define a single 40 Gb/s PHY supporting operation on the link segment

The objectives include two types of channel, one with 2 mated connectors, typically used for End of Row server-to-switch attachment, the other using “direct attach” links, typically used for Top of Rack server-to-switch attachment within the same cabinet or nearby cabinets.

The IEEE P802.3bq Task Force has formed a channel modeling ad hoc to consider the various channel configurations that may need to be addressed. Part of the remit of this group is to provide feedback to the cabling standards groups on 40GBASE-T requirements.

Since IEEE P802.3bq would like to reference ISO/IEC TR 11801-99-1 in its standard, it is important that the 40GBASE-T channel specification and the TR are closely aligned and synchronized in content. We look forward to working with you to ensure this alignment.

Thank you again for your support.

Sincerely,

David Law
Chair, IEEE 802.3 Ethernet Working Group