IEEE 802.3 Ethernet Working Group Liaison Communication

To: Dr. Albrecht Oehler, Convenor ISO/IEC SC25 WG3 <albrecht.oehler@fh-reutlingen.de>

CC: Mr. Paul Nikolich, Chair, IEEE 802 LMSC <p.nikolich@ieee.org>
    Mr. Adam Healey, Secretary, IEEE 802.3 Ethernet Working Group <adam.healey@lsi.com>
    Mr. Wael William Diab, IEEE 802.3 Working Group Vice Chair, <wdiab@broadcom.com>
    Mr. Steve Carlson, IEEE 802.3 Working Group Executive Secretary, <scarlson@ieee.org>
    Mr. Adam Healey, IEEE 802.3 Working Group Secretary, <adam.healey@lsi.com>
    Mr. Bill Woodruff, IEEE 802.3 Next Generation BASE-T Study Group Chair,
         <billw@broadcom.com>
    Dr. Walter von Pattay, Secretary ISO/IEC SC25   <walter@pattay.com>
    Mr. Alan Flatman, IEEE 802.3/ISO/IEC SC25 WG3 Liaison Officer
         <a_flatman@tiscali.co.uk>

From: IEEE 802.3 Ethernet Working Group[1]

Subject: Liaison reply to liaison letter from ISO/IEC JTC1/SC 25 WG3 to IEEE 802.3
            regarding a technical report for 40 Gbit/s cabling systems

Date: November 15, 2012

Approval: Agreed to at IEEE 802.3 Plenary meeting, San Antonio, Texas, November 15, 2012

Dear Dr Oehler,

Thank you for the liaison letter from your last meeting (25N2052). This was assigned to the Next Generation BASE-T Study Group which was formed after a successful Call For Interest in July. It was considered at the initial SG meeting held in September.

The NGBASE-T SG has noted the status of your planned TR for 40G cabling systems plus your invitation for SG members to participate in the national review of the PDTR (Proposed Draft Technical Report). A copy of the PDTR has been made available by the liaison officer, Alan Flatman and posted in a password protected area of the SG web site. A comment sheet has also been provided. Some SG members have expressed an interest in reviewing the document and providing comments. We look forward to receiving resolutions and subsequent drafts.

The NGBASE-T SG is investigating the feasibility of BASE-T systems operating at speeds of at least 10G. The SG has already adopted a project objective to include a speed of 40G. Additional speed objectives may be adopted at a future date. The primary application of NGBASE-T will be End-of-Row (EoR) and Top-of-Rack (ToR) links in the data centre with a focus on server-to-switch connectivity. This raises the following observations:

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[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.

1. The existing balanced cabling channel topology defined by ISO/IEC 11801 is 100m max with up to 4 mated connectors, which are both much greater than most data centres require for EoR links. We understand that data centre architectures are changing. Although the SG has not yet adopted a reach objective, it would be valuable to define a new channel topology for EoR links, spanning 20 or so cabinets. This would allow designers to optimise silicon solutions and hence reduce complexity, power consumption and cost.

2. ToR links generally connect server to switch ports within a single cabinet and also sometimes between several cabinets in the case when switches are not housed in every cabinet. This creates a point-to-point link length requirement of 5-10m. Balanced cords would represent an appropriate solution for this requirement. Could you please guide us on specifications and compliance when using cords as "channels".

3. In addition to transmission performance, key considerations for balanced cabling in the data centre environment are cable bulk (diameter, bend radius and flexibility) and also connector density. The smaller, the better.

We would appreciate your response to the above observations and look forward to working with you on this project.

Sincerely,

David Law
Chair, IEEE 802.3 Ethernet Working Group
<dlaw@hp.com>