Liaison report from ISO/IEC JTC 1/SC 25/WG 3 to IEEE 802.3 regarding optical return loss requirement for high data rate (1G and above) Ethernet

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From: ISO/IEC JTC 1/SC 25/WG 3
   Approved at the 48th meeting Buenos Aires, Argentine.
   Date: 2010-02-22/26

Request to IEEE 802.3 regarding optical return loss requirement for high data rate (1G and above) Ethernet

At the Buenos Aires meeting ISO/IEC JTC 1/SC 25/WG 3 held a discussion on optical return loss values, definitions and test methods for installed fibre optic cabling links and channels.

Currently in ISO/IEC premises cabling standard there is a requirement for multimode connecting hardware return loss to be > 20dB, however these standards have no requirement for the optical return loss of the ISO/IEC 11801 channel. SC 25/WG 3 is considering whether it is desirable to introduce a requirement and if so what that requirement should be.

SC 25/WG 3 notes that in all IEEE 802.3 applications on multimode fibre operating at 1 Gbit/s data rates and above there is a requirement for the transmitter to tolerate 12 dB of Optical Return Loss. SC 25/WG 3 is writing to seek some clarification on this requirement. Specifically:

1. Do we understand correctly that this 12 dB requirement includes the optical return loss from the connectors that are plugged into the equipment at each end of the channel?
2. Is it expected that these equipment interface connectors will consist of an open fibre end, i.e. the launch is via free space and not a fibre pigtail, and the receive is open ended to the detector?
3. Does this requirement also include an allowance for reflections back from the receiver at the far end of the link?
4. Do we understand correctly that the Rayleigh scattering from the installed fibre itself is included in this requirement?

Please note; the ISO/IEC 11801 channel does not include the performance of the connecting hardware at the equipment interface.

SC 25/WG 3 would appreciate answers to these questions and any other supplementary information in time for the next meeting of ISO/IEC SC 25/WG 3 scheduled in Seattle on 18-22 October 2010.