



TR-42 – Engineering Committee on User Premises Telecommunications Infrastructure

Date: June 10, 2005

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From: Bob Jensen, Chair TIA TR-42 (robert.jensen@flukenetworks.com)

Subject: TR-42 Liaison response on the effect of cable bundling and noise floor on alien crosstalk performance

The purpose of this letter is to provide information concerning the impact of cable bundling on the alien crosstalk performance as well as respond to the measurement noise floor proposal embodied in the 802.3an D2 comment resolution numbered 687.

Concerning alien crosstalk, some preliminary contributions based on lab measurements using category 6 cables tightly bundled together in a six around one configuration at intervals of 3 inches to 12 inches, indicate that the PSAELFEXT and PSANEXT loss can exceed the link segment specifications of IEEE 802.3an draft 2. These results are being further investigated. The results also show that unbundling these cables significantly improves the alien crosstalk resulting in performance consistent with IEEE 802.3an draft 2 specifications. In addition, other mitigation steps will further improve alien crosstalk.

Augmented category 6 cabling will not require this mitigation and will be designed to meet all of the link segment specifications of IEEE 802.3an draft 2 for distances up to 100 meters.

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The TR-42.7 subcommittee will be meeting the week of August 8 - 12. One priority action item is to focus on category 6 mitigation methods, including unbundling cables and replacing cords. We will provide more complete information on the mitigation methods that are required to ensure compliance with 10GBASE-T alien crosstalk requirements for installed category 6 cabling in a future liaison.

Regarding the effect of noise floor on PSAELFEXT measurements, both field testing and laboratory specifications need to be considered. This item was discussed during the June 6th TR 42.7 meeting and will be studied further with an expected response to be developed during the TR-42.7 interim meeting in August 2005.

We appreciate the close cooperation between IEEE 802.3an and TIA TR-42 in the development of the 10GBASE-T link segment requirements. Both TSB-155, "Additional guidelines for 4-pair 100Ω Category 6 cabling for 10GBASE-T applications" and TIA 568 B.2-10, "Transmission performance specifications for 4-pair augmented Category 6 cabling" are now being circulated for committee ballot. A copy of these documents will be forwarded for your review and comment.

Regards,
