The 10 Gig training conundrum

With 10 Gig over copper a reality, do we need to train a whole new classification of installers?

By Gregory A. Bramham

As we begin 2007, I'm in high spirits from many of the good things happening in our industry – from our recovering economy to new technologies and updated standards.

Undeniably, one of the biggest technologies impacting our industry is 10 Gigabit Ethernet over copper. This past June, the IEEE ratification of the 802.3an 10GBASE-T standard paved the way for 10 Gig PHY devices and 10 Gig copper installations. While this laudable achievement generates much opportunity, I am concerned that obtaining the proper performance of these systems will fall on the shoulders of technicians out in the field.

The industry has been working hard to make 10 Gig over copper a reality. Equipment manufacturers are striving to develop 10 Gig PHY devices that will effectively enable 10GBASE-T over 100 meters of copper cabling. Cabling vendors are doing their best to over-engineer Augmented Category 6 components to combat alien crosstalk and provide as much performance headroom as possible. Standards bodies like the TIA are in the process of finalizing critical performance specifications, and providers of testing equipment have managed to develop devices and methods that test to those specifications. But what about the installers? Have their processes improved? Unfortunately, the answer is mostly no. Fortunately, it's not too late to catch up.

Without question, the performance of 10 Gig copper systems is dependent on careful, proper, and systematic installation of cables. The increased diameter and weight of Cat 6A cables makes them more sensitive to installation practices and cable deformation
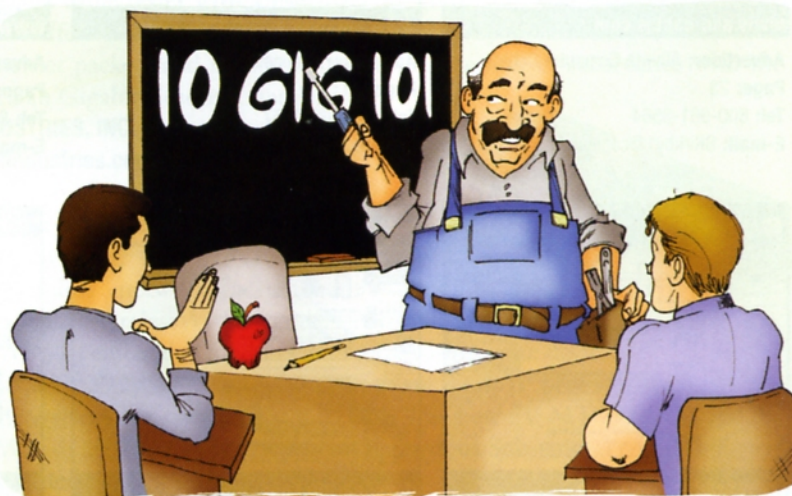

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than ever before, while tight bundles and overfilling of conduit can affect alien crosstalk performance. Proposed changes to the TIA-568-C take some of these issues into consideration, but let's face it – to install and test 10 Gig copper systems, installers must be better prepared and better trained. The more often poorly trained or untrained installers bid on and win high speed copper installations, the more chance we have of not meeting the performance specifications and ultimately providing customers with networks that do not meet their expectations or needs… and that hurts all of us. For 10 Gig copper systems to consistently perform, we must have a consistent method for installing them. At this time, that consistency doesn't exist. How can we, as an industry, address this issue? Here is some food for thought.

Is it time for a new classification of installers specifically trained to install and test 10 Gig systems? Can BICSI step up their level of training to turn out technicians specifically skilled to install and test 10 Gig systems? Then, can we require this BICSI training for all technicians installing these advanced systems? Do cabling vendors need to revisit their certification training and investigate new tools, systems and methods geared towards reliably installing these systems? Should contractors require more stringent training for all their technicians and invest in tools geared toward enabling proper installation?

I don't know if there is any one answer, but I strongly believe improved training of best practices and methods for installing and testing 10 Gig copper cables is necessary. And we need to do a better job of educating the end users – the CIO and the IT manager – on the installation issues surrounding their investment in 10 Gig copper cabling. They need to understand the consequences that installation practices have on the performance of these systems; they need to require specific training and tools; and most of all, they need to face the fact that in this case, low bid does not pay. ⓝⓒ

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