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THE SEARCH FOR SELF-KNOWLEDGE – UNIVERSAL CABLING DATASETS

by
Mike Gilmore, Technical Director of the FIA
for Networking+ (May 2006)

During a recent audit undertaken by my company of a site-wide telecommunications infrastructure, comprising both copper and optical fibre cabling, it was discovered that only 5% of the lines were linked with records which described the locations of both ends of the cables. Although the locations of the “comms rooms” were defined, there was no information concerning the remote locations - of almost 19000 lines. It is easy to see how this had happened - the site comprised lots of buildings for which responsibility had been repeatedly transferred - the connectivity data, if it had ever existed, had been lost. When the client was asked the obvious question, i.e. “how do you provide services to your users?” we were advised that “a user simply contacts the “HelpDesk” and requests a specific service at the outlet they are using. The outlet has a label that defines the position of the port in the “comms room” and we connect the required service to that port”. We did not dare ask what happens if the label has fallen off!

The client did not see the absence of data concerning the fixed cabling infrastructure as in anyway serious. No one person was responsible for the management of the system - it is only cabling after all - and operational networking issues always took precedence (which explains the service delivery process outlined above). The real problems only came to light when it was decided to undertake a network upgrade that required the performance of the cabling to be assessed. It rapidly became obvious that not only were the end locations of 95% of the cabling unknown but that no one knew the designs and performance specifications of the cables and connectors, who installed them or when. As a result even the information that was available was considered suspect.

It was also discovered that the format of what little data that had been maintained was different for each type of cabling application. Optical fibre cabling was recorded in one format, balanced data cabling in another with voice cabling subject to a completely different system. The information retained was application-specific rather than cabling-related and as a result could not be easily included in a common infrastructure database.

The complete failure of cabling infrastructure management on this scale is rare but it should be considered to be an extreme example of a more common problem which results from a mind-set that believes that the selection of components takes priority over the need to administer the end result.

The administration of an infrastructure is key to knowledge of the services it provides. Starting with a detailed record of the fixed infrastructure, an administration system should, as a minimum, record the connectivity between the cables that constitute the fixed infrastructure. It may extend to include details of the interconnected equipment and services provided.

At the top of the technological tree we have organisations that have invested heavily in “intelligent patching” systems operated by competent staff whose mission it is to implement managed moves and changes in a most professional manner. They can tell you not only what is connected to what and know the very minute a change is made, by whom and why.

However, administration has ultimately to be undertaken by human beings and there is little point in investing in the best technology if the organisation does not have the corporate structure to use it effectively. So what should the universal foundation be upon which more sophisticated systems can be built - if required? To put this another way - “what is the minimum requirement for infrastructure documentation that will allow any administration system to be implemented?”

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Judging by the number of different Excel spreadsheets and Access databases I have seen created by one might be tempted to think there is no universal system of data recording that can be applied to every installation of fixed cabling. However, this temptation should be resisted. There is just such a system, Universal Cabling Datasets (UCDs) that can be applied to everything from voice cabling to multi-Gigabit optical fibres – blown fibre is trickier but it can still be included. Even more importantly, the UCDs are not proprietary and can be used as source data for easy importation into the more sophisticated administration packages.

UCDs are not only critical to effective record-keeping but are able to develop automatic ID schemes based upon the needs of the clients needs or using standards-based rules such as ANSI/TIA/EIA-606-A. UCDs can also provide other information such as product specifications, supplier details, drawing and photographic records.

The application of UCDs, with access restricted to appropriately trained and authorised staff, removes the need for labels that indicate information about the remote end connection. In recent corporate IT audits this bad practice has roundly been condemned as a critical and notifiable failure of network security. Unfortunately it is the only solution where no other records exist.

For more information about Universal Cabling Datasets contact the FIA Technical Directorate via mike.gilmore@btinternet.com or via the FIA web-site at www.fia-online.co.uk (01763 273039).

Biography

As the Technical and Standards Director of the UK Fibreoptic Industry Association, Mike is heavily involved in the development of training and competence standards for the fibre installation industry and sets down policy in this area. In addition he chairs the audit and arbitration committees for the FIA. His book "Fibre optic cabling; theory design and installation practice" published in 1991 remains a reference for both experts and entrants into this field.

In the UK, Mike is Chairman of TCT/7, the BSI technical committee responsible for the three panels on telecommunication cabling. He also chairs two of these panels (TCT7/-/1 and TCT7/-/3). TCT7/-/1 acts to assist development of European and international standards for telecommunications cabling. TCT7/-/3 manages the implementation of European standards and others in the UK.

At the European level Mike is Convenor of CENELEC TC215 Working Group 1, the group that controls the development of European standards for the design and installation of telecommunications cabling. In the international arena Mike is Convenor of ISO/IEC JTC1 SC25 WG3 IPTG, a standards committee working on generic cabling for industrial premises (ISO/IEC 24702).

Mike is a regular speaker at seminars and conferences in all five continents. He has provided the keynote address and opening presentation in many conferences in the UK, Germany and the Netherlands. His seminars, providing regular updates on the progression of cabling standards are particularly well attended and are operating in the UK and continental Europe.



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