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Next generation IT Infrastructures

## HOW GREEN IS MY BROADBAND?

by

Mike Gilmore, Technical Director of the FIA  
for Networking+ (July 2008)

Last year CISCO predicted a doubling of broadband demand, in terms of data throughput, every 18 months but this prediction may not have taken into account the impact of increased oil prices. Recently, a senior BP executive commented that "overall motoring costs, in real terms, are currently 18 % lower than they were 7 years ago". The public perception is somewhat different, failing to recognise that the real costs of car purchases and insurance have actually fallen and focusing, instead, on the day-to-day cost of motoring. The cost of producing petrol has doubled in the last 18 months and the price at our pumps has increased by at least 25% in the same period. We also realise that this situation is not a "blip". There may be small reductions as some of the "Asian Tigers" re-balance their internal economies as they reduce the petrol subsidies that have driven up demand - but the trend is upward. This is bad news for the haulage industry and will certainly impact inflation as delivery costs increase.

As individuals, we can take steps to reduce the impact of the fuel price rises - two obvious solutions are to drive more carefully and also to drive less. Driving less is an initial, automatic, reaction to increased costs but tends to wane over time. Ultimately, for those that drive to work, there is only one real solution - stay at, and work from, home. This will, as has already started to, make companies and their employees seriously consider the possibilities of home-working. In an effort to maintain our "green" credentials, the IEEE are busy producing the Energy Efficient Ethernet (EEE) standard IEEE 802.3az for the office and in Europe the Energy Efficiency Inter-Operator Collaboration Group (EE IOCG) are focussing on broadband delivery. But how much "greener" are we really being if we work from home? We will need our own heating and lighting - which is additional to that already provided for us at our offices - even when we are not there.

However, we are not just staying at home to do the paperwork - we are talking about "unified communications": the full integration of the office and the home using video and audio support as well as simple use of e-mail. As true home-working increases, so do the demands on the broadband network.

Our current broadband service delivery is not symmetrical - we get a much faster download rate than that provided for data upload because today's broadband is designed for the world of the Internet. However, when we try to implement full home-office integration, the upstream and downstream traffic becomes more equal. Network contention on our current broadband systems and the absence of quality of service prioritisation will impact real-time applications (video, audio) - which are not at all forgiving of transmission delays and drop-outs. Our current broadband solutions will fail to provide us with the system performance that we need for true home-working.

So to be "green" in terms of cutting pollution, saving the planets oil resources and our own hard-earned cash, we will need to improved broadband delivery system to the home. GPON, the proposed delivery system for FTTx, provides a 2.5 Gb/s downstream and 1.25 Gb/s upstream split among up to 32 users. This would appear adequate to meet our home-networking needs - so all we need to do is get a regulatory framework within which FTTx can be deployed effectively in the UK. Once we have that sorted out, we need to look at its impact on the core network - the CISCO prediction could fall well short of the mark.

If you would like to have your say on this topic, e-mail [jane@fiasec.demon.co.uk](mailto:jane@fiasec.demon.co.uk).or, alternatively, you can contact the FIA Secretariat in 01763 273039.

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## 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.

Mike also initiated the establishment of the Telecommunications Infrastructure Advisory Board (TIA-B) along with the relevant directors of its other host organisations CMA and ECA-ITEC.

In the UK, Mike is Chairman of TCT7, the BSI Technical Committee responsible for the three panels on telecommunication cabling. He also chairs two of these panels (TCT7/-1 and TCT7/-3) and is Secretary of TCT7/-2. TCT7/-1 and TCT7/-2 act to assist development of European and international standards for the design and installation of telecommunications cabling respectively. TCT7/-2 also manages the implementation of these standards in the UK, where necessary producing supporting national standards.

Mike is involved in CENELEC TC215 - as Convenor of Working Group 1 and Secretary of Working Group 2. These committees are responsible for the development of an integrated series of standards for the design and installation of telecommunications cabling in a range of premises. In 2008 he led the ETSI STF362 on energy efficiency in broadband deployment resulting in the ETSI TS 105174 series documents, allowing Mike to assist in a new TC215 activity covering data centre facilities and infrastructures (monitored in the UK by BSI TCT7/-3).

At international level, Mike is Convenor of the Cabling Implementation Task Group (CITG) within ISO/IEC JTC1 SC25 WG3. This group is responsible for the strategic management of the international standards covering the specification, QA, installation, administration, operation, maintenance and repair of generic cabling. This work supports all the cabling design standards produced by ISO/IEC JTC1 SC25 WG3 including ISO/IEC 11801, ISO/IEC 15018, ISO/IEC 24764 and ISO/IEC 24702 for industrial premises produced by ISO/IEC JTC1 SC25 WG3 IPTG (also convened by Mike Gilmore).

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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