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IMPORTANT - PLEASE CHANGE YOUR RECORDS!

As from 2nd January 2001, the **NEW** address of the FIA Secretariat will be:

The Manor House, Buntingford, Herts SG9 9AB

Telephone, fax, email and web site details remain the same

FIA Breakfast Seminar - 13th March 2001

THE NEW OPTICAL FIBRE CATEGORIES - WHAT DO THEY PROMISE?

The first of the 2001 *FIA Breakfast Seminars* is to be held at Bisham Abbey, Marlow, Buckinghamshire on 13th March.

It will be presented by Mike Gilmore, Technical Director of the FIA, who will have just returned from the ISO/IEC meeting in Nice where the future "Categorization" of optical fibre will have been discussed. The OM3 Category, offering high bandwidth for LASER-based LANs will be of significant interest - both for what it offers and for what it does not!

Mike will also discuss the latest plans for 10 Gigabit Ethernet and the launch of the FIA LAN Application Support Guide discussed below.

Presentation Times:

08.15 - Breakfast - in the Great Hall.

09.00 - Warwick Room - Introduction by Andrew Watson

09.10 - presentation by Mike Gilmore

11.15 - tea and coffee and discussions

11.30 - presentation by Club Optique and Expositum

The seminar is expected to finish by 1 p.m. You will notice that the FIA will welcome members of the French trade association Club Optique.

If you wish to attend this important event, the delegate cost is £45.00 + VAT for members or £125 + VAT for non-members. Bookings should be made via the FIA Secretariat on 01763 273039

Further seminars are now being planned and the provisional dates and subjects are as follows:

5th June - *Installation Practices - Are you in Control?* It is hoped to repeat this seminar in Scotland on 12th June 2001.

11th September - *Services to the Desk - Challenging Approaches.*

4th December - *New Singlemode Technologies.* It is hoped to repeat this seminar in Scotland on 11th December 2001.

FIA LAN Application Guide

March 2001 sees the keenly awaited publication of the FIA LAN Application Support Guide (ASG).

FIBREOPTIC INDUSTRY ASSOCIATION

Management Council

Mike Phillips - Chairman
(*Fibre Optic Solutions*)

Andrew Watson - Vice Chairman and Commercial
(*Molex Premise Networks*)

Mike Gilmore - Technical Director and Treasurer
(*The Cabling Partnership*)

Industry Sector Directors

Paul Bateson - Test & Measurement
(*Optical Test and Calibration*)

Stuart Smith - Training and Qualifications
(*Cabling Science Ltd.*)

Installation

John Cupitt - (*Dwellight*)

Peter Thompsett - (*Ensign Communications*)

Steve Strange (*Anixter (UK)*)

Secretary: Lady Helen Long

FIA Administrator: Jane Morrison

The FIA is a Company Limited by Guarantee

A warm welcome to the following NEW MEMBERS

Corporate

443 ECET Networks UK - Corporate

444 ITT Industries NS & S - Corporate

445 Storm Products (UK) Ltd - Corporate

446 Systems Communications and Networks (SCN)
Ltd - Corporate

447 Millepede Marketing Ltd - Corporate

448 Vital Resources - Corporate

449 Microsens GmbH & Co. KG - Corporate

450 Boulting Group plc - Corporate

The conventional way of designing optical fibre cabling has been to ensure that the optical loss budget of the cabling is conformant with the optical power budget of the equipment to be connected to it. The actual loss of the cabling, verified during post-installation testing, is required to be conformant with its optical loss budget.

This approach to the design and implementation of optical fibre cabling is described in BS7718 (1996). However, the data rates used for local area network (LAN) telecommunications have increased dramatically and are still doing so. As part of that process we have moved from loss-limited (or attenuation-limited) applications such as Token Ring and FDDI to bandwidth-limited applications such as 1000BASE-SX/LX and the emerging IEEE 802.3ae 10 Gigabit Ethernet. This evolution has brought with it new design rules and enhanced performance options for multimode optical fibre cabling together with an increased emphasis on singlemode technology.

Objective

The object of the FIA LAN ASG is to provide the reader with an understanding of both the "old" and "new" design issues. The key issues addressed are the specification of optical fibre performance, the selection of optical fibre type and the design of optical fibre cabling channels.

In support of this Technical Support Guide, the Fibreoptic Industry Association has produced a spreadsheet that allows calculation of application support in accordance with the overall design rules. This spreadsheet can be downloaded from the FIA web-site once the LAN ASG is published.

Free to Members

The FIA LAN ASG is one of a series of FIA Technical Support Guides. The document will be **free to FIA members** via downloads from the FIA web-site (www.fibreoptic.org.uk). Non-members are also able to purchase the document (at £150.00 per copy) by contacting the Secretariat directly. Members and non-members are also able to receive the documents in hard-copy or diskette/CD ROM by contacting the Secretariat.

However, the rapidly changing nature of our technology means that web-based documents can be amended and revised easily and it is the responsibility of the reader to ensure that the latest issue of a document is used. The FIA web-site will indicate the issue status of each document and will have links to previous issues so that any changes made will be clear to readers.

What's next from the Technical Directorate?

The completion of FIA LAN ASG allows the Technical Directorate to move on to other tasks. The first two in the pipeline will be the generation of documents relating to **Optical Fibre Safety** (optical power, chemical and sharps handling) and a **Cost Modelling Tool** for use by FIA members.

FIA Council welcomes new directors

At the recent FIA AGM, **Stuart Smith**, was formally appointed to take over the training and qualifications role within the FIA Council.

Stuart, Managing Director of Cabling Science Ltd. has been involved in Networks for over 25 years with British Airways, Rank Xerox and the Aerospace industry; and went on to establish a structured cabling installation company in 1989, which he sold in 1999. Whilst working for British Airways he became involved in staff training and has combined these skills throughout his

career. In the early 90's he began authoring and teaching network courses for Protocol International and then in 1992 becoming an author & instructor for Learning Tree International, specializing in Structured Cabling. Training has taken him around the globe with courses developed and delivered from China to Brazil. Cabling Science Ltd. now provides bespoke Structured Cabling training courses and consultancy to major clients and vendors alike, both in the UK and abroad. During this time Stuart has taken a keen interest in cabling standards and market development with participation in a number of associations.

Also at the AGM, **John Cupitt**, was elected as a Council Member and agreed to assist Peter Thompsett in the Installation area.

John joined Connectdata in 1995 after working for a Manchester-based company as a senior site engineer and eventually Project Manager. As the Northeast Region Projects Manager with Connectdata, John managed the roll out of 160 branches of the Halifax plc during their migration from LWSI cabling to structured Category 5 LAN and fibre optic WAN along with various other projects throughout the UK. In 1997, John joined Dwellight Electrical of Leeds as Data Installation Design Manger to establish the arm of the business covering the design and installation of structured and fibre optic cabling.

This Newsletter is provided as a means of maintaining communication with our Members.

However, it can also promote the activities of these Members to other Members. Articles, product information, news items etc. are always welcome.

Please send the information via email (jpg illustrations) to Roy Atterbury via roy@attassoc.demon.co.uk

Exporting to South East Asia?

An Anglo/Asian sales and marketing team comprising 14 highly-skilled multi-lingual commercial specialists is offering its services to British manufacturers and other exporters in South East Asia.

The company is called Export Sales Consultancy and the team is based in Kuala Lumpur city centre. It reaches out to all the nations in the region, particularly the ASEAN group (Malaysia itself, Singapore, Thailand, Indonesia and the Philippines) as well as some of the newer member countries. The organisation also provides export penetration into Japan, Korea and Taiwan. The company claims to have excellent communication skills which are enhanced by the linguistic skills of ESC executives who speak Japanese, Chinese and Bahasa Malay.

The company says that it is uniquely placed to provide support to companies of all sizes. It acts for major quoted companies as well as small firms with less than 50 employees. Dedicated market research is provided and the company operates in both the public and private sectors in the regional capitals.

ESC will work alongside company export personnel or it will even be the full exporting presence for a client company. There are

significant cost savings by engaging ESC, taking into account the cost of accommodating and positioning full-time staff in Asia.

ESC personnel, we hear, quickly absorb the philosophy and product profile of their client companies with a sole objective of winning significant new export orders. In effect, British companies can take advantage of an immediate export department in place in this lucrative economic region of the world.

For further information, companies can contact Paul Atkinson or Edward Unwin at: Export Sales Consultancy, Suite 29.01 Level 29 Menara Citibank, 165 Jalan Ampang, 50450 Kuala Lumpur, Malaysia.

Tel: 00 603 216 33380; Fax: 00 603 216 33379

Email globalkl@ppp.nasionet.net Website: www.exportsales.org

OptiNet China 2001

This Conference and Exhibition will take place from 12th – 14th June at the Kerry Center Hotel in Beijing, PRC, and may be of interest to some readers.

Under the title *Shaping China's Optical Networking Market & Future*, the conference covers the latest technological trends and applications in optical networking. Attendees will largely be Chinese communication providers and enterprises seeking products and profitable solutions to meet the exploding demand for bandwidth and new network services. For 2001, the focal points of the conference will be on developments in Metro Area Networks, Access Technologies, Long Haul Transmission as well as Wide-Area Optical Cross-Connects.

Claimed to be the leading Chinese venue for sharing knowledge, OptiNet China brings the best minds in the industry together with key Chinese decision-makers. An accompanying exhibition draws attention and awareness to the latest products and companies in the market.

As with most events of this type, visitors are said to comprise senior executives and technology professionals involved in planning, deployment and management from telcos, regional PTAs, CATVs, ISPs, datacom centres, Internet data centres, private ministries (rail/power/public security), research institutes, investment analysts, vendors, and major enterprises. The event is claimed to be the leading forum for those who shape the future of optical communications in China including vendors, service providers, telecom officials and other industry experts. Discussions related to architecture, fundamentals, business drivers, planning, implementation experience, networking management, recent development, etc. are welcome. Commercial presentations are currently being accepted from companies that plan to sponsor or exhibit at OptiNet China.

For more information, contact:

Infoex-World Services Ltd., 202 GITIC Center, 28 Queens Road East, Hong Kong, SAR China

Tel: 00 852 2865 1118 Fax: 00 852 2865 1129

email: info@infoexws.com

ITU Announces New Optical Network Standards

The ITU has announced that its Telecommunication Standardisation Sector has approved new world standards for next generation optical networks that will provide ultra-high capacity using Dense Wavelength-Division Multiplexing (DWDM).

The new standards are a result of the work programme initiated by ITU to define optical technology which goes beyond point-to-point architectures, thus allowing for intelligent optical networking.

Because DWDM uses different optical wavelengths to transmit multiple signals over a single optical fibre, ultra-high service capacity can be offered over fibre cables, making the most of the existing infrastructure.

End-to-end "Optical Transport Netowrking (OTN)" will allow the delivery of robust managed high-bandwidth services.

"The OTN work answers the urgent need of telecommunication providers to manage ultra-high capacity networks and provides the capabilities for evolving to a multi-service transport platform supporting Internet, IP, other packet-based data transport services and legacy traffic", said Peter Wery, Chairman of ITU-T Study Group 15.

ITU-T Recommendation G.872, the first standard in the Optical Transport Network (OTN) series, was approved in 1999 and addressed the optical transport network architecture.

ITU-T Recommendation G.709 specifies the interfaces for interconnection between service providers/network operators and facilitates mid-span meet between equipment from different vendors. ITU-T Recommendation G.959.1 specifies physical layer interfaces for the OTN.

Optical signals with bit rates of 2.5, 10, and 40 Gbits are supported.

Initial clients are SDH/SONET and data services including Ethernet, IP, ATM and Fibre Channel. Management capabilities for connectivity verification, performance assessment, and fault sectionalization are defined supporting the multiplicity of roles (user, service provider network operator) and organizations in today's transport network.

Work is already underway on other standards for the OTN series, such as automatic switched transport networks and their control mechanisms, to support bandwidth-on demand applications, OTN equipment functionality, optical protection/restoration and OTN management.

For further details, visit: <http://www.itu.int/newsroom>

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CableNet launches 50% discount Voucher Scheme

CableNet Training has announced the release of a series of discount vouchers enabling SME (small to medium enterprises) to save up to 50% off the cost of training.

The voucher books are being sold in books of ten and twenty vouchers and cost £500 and £1,000, respectively. Each voucher entitles a company to claim a 50% discount per day's training, which can be redeemed against any of CableNet's courses with

the exception of the BICSI RCDD and BICSI LAN Specialist programmes.

The vouchers can be used in any combination by employees within participating organisations. Availability is limited as the deadline to purchase the vouchers is 31st March this year, and all vouchers must be redeemed before 31st December 2001.

Andrew Stevens, CableNet Sales and Marketing Director said, "We are aiming to give our customers the incentive to commit to a level of training per year at a fixed cost, whilst providing flexibility in terms of courses chosen and delegates trained".

All costs are exclusive of VAT. For further details contact Hayley Smyth at CableNet Training on 01284 718417.

Is There a Future for Cat 7?

The journal *Network Cabling News* asked the FIA the question 'Does Category 7 have a future in the network cabling industry or will fibre-based systems become the preferred option for installers and end users? How can copper compete with fibre in the longer term?

Andrew Watson of Molex Premise Networks, the FIA's Commercial Director, replied as follows:

Fibre-based systems are already the preferred option for enlightened end users who know that, however much bandwidth is provided on installation, it will soon be inadequate.

No matter how hard the copper industry fights the trend with increasingly complex cable arrangements - Category 5, Cat5e, Cat 6, and now Cat 7 – it knows that these will only delay the inevitable.

Innovative compression techniques mean that more and more information can now be forced down a copper cable, but the reliability reduces dramatically with distance. With fibre, the intrinsic bandwidth is almost limitless – a minimum of 25GHz before wavelength division techniques need to be used – and the minimum distances are, without exception, longer than copper. If you want to future-proof your network, there is no substitute for fibre. Category 7 does not yet exist, achieving a successful Category 6 installation is fraught with difficulties and maintaining the design bandwidth becomes increasingly difficult with time.

Although some installers still regard fibre with an unwarranted degree of suspicion, advances in fibre-optic termination technology and design now enable installation companies to offer fibre as a realistic alternative to copper. Providing that power budgets have been properly calculated, maintaining design bandwidth is not an issue in fibre networks.

In the longer term, copper is likely to retain its place for lower performance networks and also with in the growing SOHO type networks where bandwidth is less of an issue. In mission critical, higher density installations, fibre will be more commercially viable.

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Why choose a Category 6 cabling system?

Mr. Watson's company is heavily involved in both fibre and copper networks and, with regard to his comments above, it is interesting to note the views of Molex on a thorny area concerned with copper.

While this is a subject that has previously been discussed by the FIA's Technical Director Mike Gilmore, it is worth looking at an industry view of a situation associated with Category 6 cable as many FIA installer members are involved in both copper and fibre installations. The following comments from Molex should, in no way, be construed as being a recommendation to use Cat 6 cable – but different situations require different approaches although Andrew Watson has made the FIA's views very clear.

However, the views of the FIA members considering a Cat 6 approach would be welcomed.

Molex asks:

Would any network manager in their right mind choose a cabling system that is not standards-based?

In reply, the company replies - Well, yes actually! For most end users Cat 6 is technical overkill, but there are some groups for which the undisputed performance advantages offered by a 200MHz cabling system are worth the investment.

For example, an organisation which is currently using (or considering using) Gigabit Ethernet has two options when it decides to re-cable. It can extend the existing Category 5e network and hope the future upgrading of active equipment and software does not force another re-cabling too soon.

Alternatively, it can opt for Cat 6 cabling in the knowledge that, even without a ratified standard, the available channel bandwidth has doubled.

This is true for all sizes of organisation – not just large ones. Many small and medium-sized engineering, design and graphics companies for example, are running high speed data networks.

Then there are organisations, such as universities, colleges or charitable organisations who may have budget available to re-cable now, but do not anticipate having any in the future, for the next 15-20 years, say. They must squeeze all the useful life out of the cabling system they buy. So, do they buy a 100MHz cabling system or one with double the bandwidth? Many such organisations are only now giving up on their Category 3 installations and looking for a new long term solution; Category 6.

Which Category 6 system should you choose?

With the standard for Cat 6 as yet unratified, it is important to understand exactly what you are buying. Not all systems claiming Category 6 performance can actually deliver it, and with vendor inter-operability not yet provided for in the standards, making an informed decision is vital. Buyer beware!

There are some questions you can ask, to cut through the marketing spin.

First, does the system provided meet all the end-to-end channel performance parameters? Never mind any ambitious claims about top end frequencies or a magical ability never to drop a single 1 or 0. The key question is: Does the system meet the (draft) standard?

Second, can the manufacturer supply reference site details? You don't want your installation to be a manufacturers test site!

And finally, don't take their word for it. Make sure that the system has been independently tested. Be a nuisance and ask for the test results and a copy of the certificate.

If any of these are lacking, keep looking!

What if the standards change when ratified?

The current messages from the cabling standards bodies suggest that the channel performance limits for Category 6 are stable and unlikely to change. Remember, at the end of the day, it is the channel performance in which the end user is interested.

How am I going to install it?

The only major change in installation practice from Category 5e cabling to Category 6 is the amount of twist that can be undone at the point of termination. This has been reduced from 13 to 6mm. Providing the IDC connectors used do not split pairs on either side of a module there should be no problem meeting this.

Everything else is business as usual. Just follow all the rules *to the letter*. Category 6 does not have the head room that we were all used to with Category 5, so attention to detail - with respect to bends and kinks in the cable and cable ties - is paramount. With Category 5, we would see neglect of these issues as reduced headroom; with Category 6 we could expect to see circuits failing. The best advice is to follow the manufacturer's guidelines very closely.

The issue of containment can be a cause for concern. If (as is often the case) it is left to the electrical contractor, there can be problems caused by attempts to reduce project costs by re-using existing containment. It is important that the data contractor's specialist knowledge is applied to the containment issue to ensure that cables are not damaged. The reuse of existing containment is not always possible.

How do I test it?

There are a number of high quality testers on the market and as long as the chosen unit is Level III compliant there should be little to worry about. You will need the correct test adapters to match the cabling system. Data contractors bidding for Category 6 projects should include the cost of test heads in the quote. A typical set of basic link interface adapters will support between 500 and 1000 tests - check with your tester manufacturer for guidance. Do not be tempted to use old adapters - the result may be inaccurate tests.

It is worth checking that the cabling system under test passes *all* the tests recommended by the proposed standards, and not just a few 'recommended' by the manufacturer. Watch out for manufacturers disguising weak points in the system as 'pre-configured custom test settings'.

Conclusions

A great deal of care is required to select and install a Cat 6 installation throughout the entire project cycle. With a considered approach, compliance to the proposed standards is within the remit of a trained installer. Whilst these systems are not the panacea for all cabling ills, there is a place for them in our market and for certain end users in suitable premises they represent a sensible option.

So there we are - there seem to be plenty of areas for discussion. Let's here from you. Send any comments to the Newsletter Editor via email - roy@attasoc.demon.co.uk.

Synchronous Digital Hierarchy (SDH)

CableNet Training has introduced a new course which concentrates on the Synchronous Digital Hierarchy (SDH) of network infrastructures. The 2-day programme covers the theoretical angle of SDH networks and is designed for network administrators, telephone engineers and datacoms professionals who are familiar with PDH (Plesiochronous Digital Hierarchy) systems.

The content is chiefly theory-based and subjects covered include a review of multiplexing, benefits and principles of SDH, SDH network protection strategies and network management hierarchy. To attend, participants should already have a good knowledge of PDH as well as some field experience.

The programme is held over two consecutive days at CableNet's training centre in Bury St. Edmunds Suffolk. For further details and full course prospectus, contact CableNet Training on 01284 767100.

Molex Employees receive BICSI's RCDD Qualification

Two Molex Premise Networks employees, based at its European Headquarters, Fareham have been awarded RCDD accreditation from BICSI, a global telecommunications association.

Rob Cardigan, Technical Manager and Simon Barnard, Technical Services Manager, join the 80 telecommunications professionals in Europe, and 5,200 worldwide, who have achieved the qualification - *Registered Communications Distribution Designer*.

Despite the number of companies with RCDD badge holders in the industry still being fairly rare, more and more companies are showing preference for structured cabling designs to be overseen by people who are RCDD qualified.

Both Rob and Simon are heavily involved in all technical issues at Molex Premise Networks and received the company's full support throughout the duration of their training.

"It is our intention for technically-based employees who offer technical advice, support and consultancy to customers, to be RCDD qualified. When submitting installation designs, this accreditation will add two important things; firstly it has global recognition in the marketplace and is internationally respected. Secondly, it will greatly assist us in reassuring customers and end users of our expert capabilities" said Peter Narey, Managing Director, Molex Premise Networks.

RCDD is a qualification for individuals who have shown extensive expertise in the design, integration and implementation of telecommunications systems and components.

For further information, contact Martin Coulthard +44 (0)1489 572111.

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Dwellight Fast Track Team on Time

New FIA member Dwellight Ltd of Leeds has successfully completed a major contract in the City of London for Clerical and Medical Insurance Group (CMIG).

Dwellight was appointed to install Power Voice Data and Fibre optic cabling along with containment for this fast track 8-week project. The installation consisted of creating three new communications rooms over two floors, a main communications room (MCR) on the lower ground floor and two floor communications rooms (FCRs) on the first floor.

Diversely routed fibre and ITT ISCS Gigapath Cat 5e copper cabling linked the MCR to both FCRs along with multicore voice cables to form a resilient backbone. Within each comms room, the interlinking ITT ISCS Gigapath Cat 5e cabling was connected to network cabinets, advanced patching frames and all equipment cabinets.

Floor wiring is run to 540 4-way Cat 5e desk harnesses, each harness containing two cables from each FCR for resilience. A total of 2400 floor outlets are installed together with 800 interlinking Cat 5e cables and 244 interlinking fibre optic cables. 840 RJ45 host 4-wire voice outlets were also installed.

New UPS power was installed to all communications rooms on "Commando" sockets and on bus bar trunking under floor to the main office areas feeding 6-way PDUs direct to desks.

Containment and power was also installed for CCTV, door access, security equipment, air conditioning, water detection and InNergen gas systems. Modifications to the existing lighting together with new lighting to the communications rooms and offices was also undertaken in the contract which was valued in excess of £700k.

Work began on the 16th October last year. At 8.30am on Monday the 11th December CMIG began trading from their new fully serviced and furnished offices at 33 Old Broad Street, EC2.

For further details, contact John Cupitt info@dwellight.co.uk

Molex Helps Marconi Pioneer New IT strategy

Still on the subject of Molex Premise Networks (why don't you tell us about YOUR news?) it has been announced that Marconi Communications has selected Molex as its global strategic cabling partner.

The move is part of a wider working relationship between the two companies in support of an ambitious new initiative by Marconi for a major upgrade of its IT networks world-wide.

Under the agreement, Molex Premise Networks is not only Marconi's preferred supplier for network connectivity products, but also provides in-house installation teams with comprehensive training and full technical support. All Marconi engineers will go through the Molex training programme. Installed systems are covered by the Molex Premise Networks 20-year product and performance warranty.

Marconi Project manager Robert Gilkes explains: "This is a radical new approach, designed to enable business growth to benefit from all our available technology, consistently, throughout

the organisation. We are standardising throughout the organisation, even to the extent of replacing existing equipment. The aim is to provide full accessibility to all IT resources from every point in the building - to integrate the IT network with the building fabric."

"Cabling is key to the implementation of that strategy," continues Gilkes. "It is the foundation for the entire IT infrastructure. Our partnership with Molex - and the new Corporate Certified Installer status we now have - gives us the consistent quality and reliability in network components and installation to ensure system performance. Molex is a key link at ground level in our global IT strategy."

Marconi office sites are to be flood-wired to a generic grid layout, providing end-to-end connectivity for a potential work-space in every 10m². All IT resources will be available at every desk, with total flexibility in office layout. Work has already begun at Coventry, and will start at Liverpool and other UK sites later this year. Worldwide roll out is planned over the next three years.

"We have enjoyed a close working relationship with Marconi Communications for more than five years now and are already working with them on a number of projects," says Peter Narey, Molex Premise Networks Managing Director. "We are delighted by their decision to become a Corporate Certified Installer and look forward to supporting them in the global roll-out of their IT strategy."

For further information, contact Martin Coulthard on +44 (0)1489 572111.

Optical Fibre Amplifier Survives Internal Failures

Southampton Photonics (SP), the spin-off from the local university's pioneering optoelectronics research, is launching an erbium-doped fibre amplifier (EDFA) that is claimed to survive internal failures and feed multiple outputs.

Professor David Payne, SP's chairman and the inventor of EDFA technology, said "A failure in an optoelectronic system is usually due to the diodes. With redundancy built in, one can fail but the signal can divert through another".

The GainNet M8 has eight amplifiers within the same unit, sharing common pump lasers. The amplifiers can be connected in series or parallel, making them cheaper than single amplifiers and more flexible to use.

The M8 was unveiled at the European Exhibition on Optical Communications in Munich. By connecting the eight amplifiers in sequence, the M8 can reach 1W of output power which is three times more than current EDFAs.

'If you connect the amplifiers in series, you can put additional components in between them, which can do things like flatten the gain spectrum,' added Prof. Payne. This offers the benefit of less noise for a given gain level. 'Normally, to do this in an amplifier, you need to do clever things to bypass the pump.' But connecting the amplifiers in parallel allows the EDFA to boost eight independent signals. With separate wave division multiplexing streams coming from different sources, there can often be a problem with channel imbalance. The EDFA's ability to amplify each channel separately makes it possible to even out the signal amplification.

Prof. Payne invented the EDFA in 1986. Before this development, optical signals were amplified using optoelectronic converter repeaters, but they created major bottlenecks: 'You had an information super-highway with a small section of dirt track,' said Payne. 'The EDFA has a bandwidth of terahertz as opposed to the gigahertz previously available.'

EDFA technology has now dominated its market for more than a decade. The development of the M8 was driven by a major cost reduction push within the optical communications market.

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Guide to Forthcoming Shows and Conferences

Beyond Sonet/SDH Conference and Exhibition Paris 10-13 April 2000 (Covering Gigabit Ethernet; 10GB Ethernet; Ethernet PONs; Digital Wrapper Concept; Resilient Packet Ring; Spatial Re-use Protocol; Automatic Switched Optical Networks. For further information, call +33 (0)153 466380 web: www.upperside.fr

BICSI 2001 Europe Conference and Exhibition Brighton 2-5 July 2001. For further information, call **+44 (0)1206 57 98 99** Fax: **+44 (0)1206 36 43 28** e-mail: BICSI-Europe@bicsi.org

Photonics Korea 2001 & International Photonics Exhibitions 2001 2001Gwangju Biennial Exhibition Hall, Gwangju, Korea on 11-14 September. e-mail: thkim@kapid.org

Value-for-money Advertising on the FIA Web Site

As an FIA member, your company is automatically promoted on the site. Free access to the membership search pages for all visitors to the site provides complete details of our members and the services and products that they offer.

The site is extremely popular and is often the first port of call for FIA enquiries via the Secretariat. Recent figures received from the server show that the site receives around **1000** visitors per month - in a recent 7 day period, the site received **281** visitors!

The comprehensive statistics relating to visitors to the site are regularly updated and can be checked out by visiting www.fibreoptic.org.uk/logfile.htm.

Many areas of the site are available to members who wish to advertise their products and services and several of these have already been taken up. A list of the pages available is provided below together with the highly competitive rates for the space.

The first advertisements appeared on the site in September and all contracts will run for one year. The advertisements can consist of a company logo or text (or both) but must be within the size of 80 x 80 pixels. The advert will appear at or near the top of the relevant page. All prices quoted are for 12 months advertising - representing excellent value for money!

If you have a particular page you wish to reserve (there are only 18 pages available!) please ensure that the slip in this Newsletter is returned as soon as possible. On receipt of this, we will send you instructions on how to send your advert to our webmaster together with our invoice for the relevant amount.

If you have any queries please do not hesitate to contact the FIA Secretariat.

Whole site: Home page and on every page listed below - a banner sized as **480 x 40 pixels. £1,000 - for 12 months starting in January 2001.**

Individual pages: The following pages are available **NOW**.

About the FIA	£150
Join the FIA	£150
FIA Links	£150
FIA Membership Search Engine	£150
FIA Policy Statements	£75
Audit Scheme	£75
Employment	£75
e-Services	£75
Events	£75
FIA Membership Fees	£75
Guidance Notes	£75
Insurance Scheme	£75
Arbitration Scheme	£75
Mart	£75
FIA SkillsMatch	£75
Standards Forum	£75

Approved Training Provider Scheme £150 (available only to FIA Approved Companies)

Approved Installer Scheme £150 (available only to FIA Approved Companies)

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FIBRE OPTIC INSTALLATION

FIA Support Documentation for the Installer and User

The introduction of BS7718, a *Code of Practice for the Installation of Fibre Optic Cabling*, follows the original publication by the FIA of the initial Draft B of the document in 1991. Since then, the use of the document has identified various areas which require support documentation to ensure both that the recommendations of the *CoP* are effectively implemented and that standard quality and recording practices are employed. The FIA, therefore, has published the following:

Guidance Notes to BS 7718 and FIA-CCP-1/91

This 34pp publication analyses every section and sub-clause in the two documents using a cross-referencing system. Where appropriate, clarification of the recommendations is given together with step-by-step guidance on the design, technical, implementation and contractual implications of the contents. For the installer, it removes the possibility of misinterpretation and simplifies implementation. For the user, it simplifies the task of understanding the requirements and their importance to the generation of a contractual agreement. **Price: FIA Members £20 Non-Members £30**

Fibre Optic Cabling - Recommended Installation Documentation Practices

With documentation of complex fibre optic cabling systems being a fundamental quality assurance requirement, it follows that it has important implications for the long term operation of a cabling system. In particular, such documentation should ensure all parts of a network can be identified by future users with minimal difficulty.

This publication, which is based on the requirements of both *Codes of Practice*, introduces and describes both schematic and textual documentation approaches and how these may be used either individually or in concert. 12 master documentation templates are contained in a special folder and these are designed to achieve industry standardisation of such documentation as well as forming a clearly deliverable item within an installation contract.

Price: FIA Members £15

Non-Members £20

Installation Specification Template

This step-by-step proforma document, based on *Code of Practice* recommendations, enables an installation to be fully defined in terms of all its required components (modules, nodes, routes, etc). It is designed to prevent important aspects being omitted and provides a comprehensive and invaluable reference for both users and installers.

Price: FIA Members £15

Non-Members £20

Quality Plan Template

This template, based on *Code of Practice* recommendations, defines all the inspection and test criteria required to ensure an installation fully meets its specification. It is an invaluable aid for both users and installers.

Price: FIA Members £10

Non-Members £15

NOTE - If all the above four documents are ordered at the same time, you may take advantage of the following package price:

Package Price: FIA Members £50

Non-Members £70

Cable Selection Guide

A comprehensive aid for designers and installers in the Fibre Optic Networking Sector generated by the Cable Committee of the Fibreoptic Industry Association. Provides an easy-to-use guide to fibre optic cable selection.

To: FIA Secretariat, Manor House, Buntingford, Herts SG9 9AB United Kingdom Tel: 01763 273039

Fax: 01763 273255 Email: jane@fiasec.demon.co.uk

Please supply:

.....copy/copies of *Guidance Notes*

.... copy/copies of *Documentation Practices*

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.... copy/copies of *Quality Plan Template*

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