



The Fibreoptic Industry Association

www.fia-online.co.uk

NEWSLETTER

Issue 103

December 2011

THE FIBREOPTIC INDUSTRY ASSOCIATION

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A warm welcome to the following NEW MEMBERS

Corporate

DATA-LEC LTD.

TOTAL TECHNICAL SOLUTIONS LTD.

TESTER HIRE

FIBRE TECHNOLOGIES LTD.

Affiliate

RAF DIGBY

FIA Annual General Meeting

The FIA AGM was held, as planned, on the 1st December 2011 at the usual location: The Saracens Head, Towcester, near Northampton. The Minutes of the AGM and the audited accounts for 2010-2011 are to be found on the FIA web-site at <http://www.fia-online.co.uk/eoverview.htm>.

Lee Funnell, of The Siemon Company stepped down from Council this year and we take this opportunity to thank him for all his hard work over the many years during which he has served the Fibreoptic Industry Association. In his stead, although not taking on the same responsibilities, Jonathan Lewis was elected to Council. John Marson was appointed to act as Vice Chairman. Full details of the Council members for 2011-2012 are available at www.fia-online.co.uk/ecouncil.htm



Lee Funnell stood down as FIA Director



Jonathan Lewis was elected as FIA Director

**Are you an FIA member?
Have you got any NEWS?**

This Newsletter is provided as a means of maintaining communication between and with our Members.
Articles, product information, news items etc. are always welcome.
Please send the information via email (jpg illustrations) to Jane Morrison via the [FIA Secretariat](#)

FIBREOPTIC INDUSTRY ASSOCIATION

The FIA is a Company Limited by Guarantee

Management Council

Paul Bateson - Chairman
(Optical Test and Calibration Ltd.)
John Marson - Commercial Director and Vice Chairman
(Twistnet Communications Ltd.)
Mike Gilmore - Technical Director and Treasurer
(The Cabling Partnership - e-Ready Building Limited)

Industry Sector Directors







Paul Bateson - Test & Measurement
John Colton - Training
(Lucid Optical Services Ltd.)

Industry Sector Directors (continued)

Ken Jones - Installation
(EDS Systems (North Wales) Ltd.)
Phil Whitehead - Cross-media promotion
(ACCL)
Simon Comben - MoD Liaison
(J Brand Ltd.)
Alan Bullen - Infrastructure
(Lynx Networks plc.)
Jonathan Lewis
(The Siemon Company)

A New Web-site for a New Year

December 2011 sees a new web-site layout for the **FIA**. As can be seen below we are clearly focussing on the services we offer - not only for our existing members but also support services for new and existing users of our technology. In addition, we are placing the most important and globally applicable services in pride of place on the home page. These include the "Installation Risk Reduction Programme", the "Testing of Installed Cabling" and "Contamination, Inspection and Cleaning" all of which are discussed below. Similar updates have also been made to the general information pages for both members and users.

<p>GENERAL INFORMATION</p> <p>INFORMATION FOR USERS</p> <p>INFORMATION FOR MEMBERS</p> <p>FIA MEMBERS CODE of CONDUCT</p> <p>FIA White Papers</p> <p>Members White Papers</p> <p>MEMBERS ONLY (Restricted access)</p>	<p>FIA Installation Risk Reduction Programme</p> <p>Testing of Installed Cabling</p> <p>Contamination Inspection Cleaning</p> <p>Ministry of Defence Procurement</p> <p>Optical Fibre Datacomms Specialist</p>	<p>PAGE SPONSORS</p>  <p>Optical Test and Calibration for all your test equipment needs</p> <p>HELP! - HELP! - HELP!</p> <p>TECHNICAL QUERY submit an e-mail - get a confidential answer</p>
<p>LATEST NEWS Updated December 12, 2011</p> <ul style="list-style-type: none"> ▶ Latest Members e-Guide published ▶ Dispersion compensated MMF: Panduit assessment ▶ Copper Clad Aluminium IAN published as FIA White Paper ▶ BS EN 50173-1 (2011) published ▶ BS EN 50174-2 + Amendment 1 (2011) published ▶ FIA Extended Standards Service goes live ▶ FIA regains BSI Affiliate status (buy your standards here) ▶ White Paper addresses OM3 and OM4 bandwidth ▶ BS 6701:2010 is published ▶ HSE Consultation on the AORD ▶ BS 8492 is published ▶ White Paper clarifies concerns over OS1 and OS2 ▶ LAN Application Support Guide updated to include 40/100 GbE (members only) ▶ White Papers on cabled optical fibre Categories updated 	<p>PRIMARY LINKS AND AFFILIATIONS</p>   <p>Announcement</p>  <p>The FIA is a BSI Affiliate</p>  <p>BUY THEM HERE ONLINE</p> <p>More about</p> 	<p>MEDIA, PUBLICATIONS ... AND EVENTS</p> <p>FIA Newsletters</p> <p>Current Issue</p> <p>Past Issues</p> <p>FIA Press Releases</p> <p>FIA Articles</p> <p>FIA Events</p> <p>FIA Past Presentations</p>

FIA Standards Forum

- documents available for download and comment NOW

The Standards Forum offers **FIA** Members the opportunity to comment on standards in development by the fibre optics and cabling committees in ISO/IEC, IEC, CENELEC and BSI. These standards cover a wide range of optical fibre products such as optical fibres, cables, connectors and system components together with the design, installation and commissioning standards for cabling. To get involved - go to the members-only area of the **FIA** web-site area, go to Standards Forum and follow the instructions. Why not bookmark the page for easy access - it is always easier to influence standards in development than fix them later.

The FIA CCA IAN goes viral

The reaction to the FIA Information Advisory Note (IAN) on Copper Coated Aluminium has, to say the least, been astonishing. FIA members can download it from the White Papers section of the FIA web-site – but clearly others have been doing the same and links are now being made to from all over the world. As can be seen on the right, a US trade body, the Communications Cable & Connectivity Association (which has the acronym CCCA – a little to close for comfort to CCA) now uses it as a primary external reference in their battle against the copper coated aluminium cable suppliers.

BREAKING NEWS:

Citing CCCA's warnings on use of copper clad aluminum (CCA) conductors in category, 4 pair cable designs, the UK's Fibreoptic Industry Association (FIA) issued an excellent white paper (Infrastructure Advisory Note) on "The implications of using copper clad aluminum conductors within balanced pair cables". The 9 page paper contains a wealth of information and data on the limitations of CCA in balanced cabling, validating current industry standards which permit only annealed copper conductors.

Our FIA IAN has also found its way into international and European standards meetings. Hopefully they will take action to prevent installers and their customers being tempted to use these sub-standard products in place of proper Category based balanced cables.

New member Testerhire offer FIA Members discounts



South West based Tester Hire Ltd has firmly established itself among the UK market leaders in the copper & fibre test equipment rental sector. Tester Hire offers short or long term rental of the industry's most widely used and specified Fluke Networks™ DTX range. The Cat5e, Cat6, Cat6a 9 second auto

test DTX-1200 & DTX-1800 handheld analysers combined with optional DTX-MFM2 multimode, DTX-SFM2 singlemode fibre modules or DTX-OTDR quad module are available with UK wide next day delivery and collection service.

Tester Hire recognises that in supplying purely fibre and copper networking related equipment which is constantly maintained and calibrated by Fluke Networks™ with sales and technical staff from installer backgrounds has a little more to offer in terms of service and support.

With the current economic climate investing several thousands of pounds in products you may only use to their full capacity a few times a year makes rental a very attractive and flexible option.

Let us demonstrate how we can offer your installations professional certification, simple troubleshooting, quick fault detection and that all important added value all by having the right equipment in the right place at the right time at the right price.

Tester Hire is offering all FIA members FREE delivery and a 10% discount on their first order.

For more information visit www.testershire.co.uk or contact Andy Thompson on 01275 542 528 or andy@testershire.co.uk

Happy driving - FIA van stickers!

Recently every corporate member received two van stickers indicating that they were FIA members. This resurrects a practice that, for reasons, unknown, had fallen into abeyance. Members wanting more can order them for £3.99 each (including VAT) The stickers have proved so popular that we have obtained a new, larger, batch.

... what else can we do to make you stand out in a crowd?

If you have any other ideas for corporate image improvement please contact the FIA Secretariat or John Marson the FIA Commercial Director via the web-site.



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FIA to organise Comms Expo 2012 seminars



COMMS
THE NETWORK AND DATA COMMUNICATIONS CONFERENCE AND EXHIBITION
EXPO 2012
26th - 27th June 2012 | Barbican Centre | London

**TWO EVENTS. TWO DAYS.
ONE LOCATION.**

- ✓ Over 100 exhibitors
- ✓ Countless innovative products and solutions
- ✓ Three seminar programmes
- ✓ Central London location

Pre-register **FREE OF CHARGE** at www.commsexpo.com
For exhibitor information, call us on +44 (0) 1223 350515

IT decisions NOW HELD IN CONJUNCTION WITH IT DECISIONS!

www.commsexpo.com

The **FIA** has been asked to organise the “installer-focus” seminar session at the forthcoming Comms Expo 2012 exhibition at the Barbican Centre, London, on 26th/27th June next year.

The **FIA** will also take the opportunity to attend the show as an exhibitor. The event combines both the “Comms Expo” with the “IT Decisions” exhibitions and thus provides visitors with a broader range of technology options and is expected to attract wider range of attendees including end users. As a result, there are expected to be multiple, parallel, seminar threads including that organised by the **FIA**.

How about sponsoring a Newsletter?

As we have had enquiries from members regarding long-term sponsorship of the Newsletter, the **FIA** Council agreed that details of the fee structure should be announced both here and on the **FIA** web-site. Details are shown on the right.

Only one sponsor is allowed per issue so if you are interested please contact Jane Morrison via the **FIA Secretariat**.

Sponsorship rates are:

- Long-term sponsorship – limited to 3 issues per annum - £500 plus VAT
- Single issue - £200 plus VAT

Use the **FIA** web-site to buy BS standards



Until early in 2010, the **FIA** were BSI Affiliates – meaning that anyone visiting the **FIA** web-site could click on a link to the BSI web-site and any purchase made of standards, in either paper or electronic format, would result in a small payment being made from BSI to the **FIA** (at no cost to the purchaser). Unfortunately, the “middle man” organisation appointed by BSI to handle this system went into administration in mid-2010. BSI have now re-established the system, bringing the management of the scheme in-house and the **FIA** have now rebuilt the linkage to directly purchase standards from BSI. If you wish to buy a standard, even if your company is already a member of BSI, please use the **FIA** web-site - because the **FIA** receives a small percentage of your purchase price - and any discounts you normally receive will also be applied.

In addition to simply rebuilding the Affiliate Scheme from the **FIA** homepage, the new system allows direct links to be created to allow the purchase of specific standards. These links have also been created within the Extended Service System (ESS) and at www.fia-online.co.uk/eservice-ess.htm.

Contamination, Inspection and Cleaning – Project 2012

In the New Year the **FIA** intends to establish a Project Team to work on documentation and other information surrounding the topics of contamination, inspection and cleaning of optical fibre endfaces. This builds on the clear focus on these issues demonstrated at the Netcoms 2011 exhibition and associated seminars.

In order to develop the necessary expertise for the Project Team, our Technical Director has already written to those **FIA** members who have indicated that they provide inspection and cleaning products. Obviously, if you are a manufacturer of inspection equipment or cleaning technologies we would very much like to hear from you – as are distributors of such equipment if they provide substantial technical support in these areas. The **FIA** recognises that if you only supply such equipment or consumables as a distributor or reseller, it may not be appropriate for you (or even possible) to get deeply involved in this work. However, you may wish to get your suppliers to contact the **FIA** to register their interest.

If you wish to get involved through any of the above routes, please contact the **FIA** Technical Director via the **FIA** web-site or at technical@fia-online.co.uk.

FIA publishes complete testing methodology document set

In November, the **FIA** Technical Directorate published the final drafts of the following documents which are downloadable free-of-charge from the members-only section of the FIA web-site:

- § **TSD-2000-4-2-1: Issue 4 - Testing of installed cabling: LSPM**
- § **TSD-2000-4-2-2: Issue 2 - Testing of installed cabling: OTDR**
- § **TSD-2000-4-2-3: Issue 1 - Testing of installed cabling: Specification, procurement and use of test cords**

The two test method documents reflect the requirements of [BS EN] IEC 61280-4-1 for multimode (50/125 or 62,5/125 µm) optical fibre cabling and of [BS EN] IEC 61280-4-2 for singlemode optical fibre cabling rather than ISO/IEC 14763-3. The test cord document interprets the requirements of [BS EN] IEC 61280-4-1 and [BS EN] IEC 61280-4-2 in relation to the specification, procurement and use of test cords with both "normal" and "reference grade" terminations.

Commenting on the publication on the simultaneous publication of the document set, Mike Gilmore, **FIA** Technical Director, stated that "The FIA has a role to be fair but firm in relation to testing. The FIA have reviewed the requirements of the various published standards and in order to be fair, have assessed the viability of their demands and their impact on the installation and user community. The result of this review is documented in the three Technical Support Documents".

However, he added "The requirements of the two test method documents clearly require **FIA members to be aware of, and to apply, the requirements of BS EN 61280-4-1 and BS EN 61280-4-2** and to observe the inspection and cleaning of test interfaces in accordance with the latest standards. The Technical Directorate still has to deal with too many cases where installers and customers have problems caused by the installers using the wrong test methods. **As the basics of testing have not changed since the early 1990s this cannot be allowed to continue.**"



As a result, the FIA has also published a 2 page "shortform guide" to the **FIA** requirements. While this is not substitute for reading and applying the full TSDs, the guide clearly shows **what is - and what is not - acceptable**. As an indication of the increasingly firm position taken by the **FIA**, the guide points out that only those members that have applied the correct approach will obtain support from the **FIA** Technical Directorate. The guide is downloadable via the "Testing of Installed Cabling" icon on the FIA home page

and is available to all free- of charge.

In conclusion, Mike Gilmore said "the **FIA** Technical Directorate is fully aware that certain cabling suppliers wish installers to use test methods which contradict those required by the standards and of the FIA TSDs. Problems encountered when using such methods have to be addressed by those suppliers, not by the **FIA**".

FIA Summer Seminar 2012

Following the success of last years event in Stratford on Avon, the **FIA** is pleased to announce both the dates and location of next years event.



The event is to be held over two days (20th and 21st June 2012) at the Heythrop Park Resort, Chipping Norton, Oxon. We will retain the same popular format that has proved so successful over the last two years: i.e.

two blocks of four techno-commercial seminars on each day - separated by a dinner and a pre-dinner drinks reception.

Put these dates in your diaries – we will be sending out booking forms in the next few weeks!

SPONSORSHIP OPPORTUNITIES

As last year we are seeking sponsors for the various aspects of the event including:

- **overall event** (£2000) providing your logo on all literature, two free seminar places, one seminar speaker "slot" and one table-top exhibition space;
- **pre-dinner drinks reception** (£750) providing one seminar place, one table-top exhibition space and one dinner place;
- **dinner** (£1800) providing one seminar place, one table-top exhibition space and three dinner places;
- **wine with dinner** (£1200) providing one seminar place, one table-top exhibition space and two dinner places.

Members interested should either contact the **FIA** Commercial Director (commercial@fia-online.co.uk) or the **FIA** Secretariat (secretary@fia-online.co.uk).

EXHIBITION OPPORTUNITIES

The event presents members with an opportunity to exhibit their products and services in "table-top" format. The facilities this year allow more exhibits than last year. Members interested should contact the **FIA** Secretariat (secretary@fia-online.co.uk).

“Installation Risk Reduction Programme” extended to all



The tools supporting “Installation Risk Reduction” have been available to both members and users for a number of months. The on-line assistance which lists all major risk factors and how the planning and installation standards and suggests how they are negotiated is a key aspect of the Approved Installers Scheme.

The rebuild of the **FIA** web-site “front end” now places “Installation Risk Reduction” as a mainstream activity for the **FIA** and we have created the following boiler-plate text for use by clients and their consultants in their tender documents. This comes in two forms.

The general approach is "**this technical specification requires that the installation and testing of optical fibre cabling is undertaken by a member of the FIA who commits to applying the risk reduction practices available on-line at www.fia-line.co.uk/riskreduction.htm which support the application of BS6701 and BS EN 50174 series standards**".

Approved installers, who are assessed against their risk reduction actions are able to promote a modified text as follows "**this technical specification requires that the installation and testing of optical fibre cabling is undertaken by a member of the Fibreoptic Industry Association who is also an Approved Installer under the Approved Installer Scheme**".

FIA e-Guide December 2011

Please note that the latest e-Guide has been uploaded to the web-site – it lists all members details, products and services based on data received as at November 30th 2011.

The **FIA** Council take this opportunity to thank advertisers in the document - ABM Electrical Contracting, GCL, Optical Test and Calibration and The Cabling Partnership.

We would also take this opportunity to remind members that a substantial number have not completed the details of their products and services since we changed the format over a year ago. Please check your details for completeness.



And for some non-“fibre optics” information



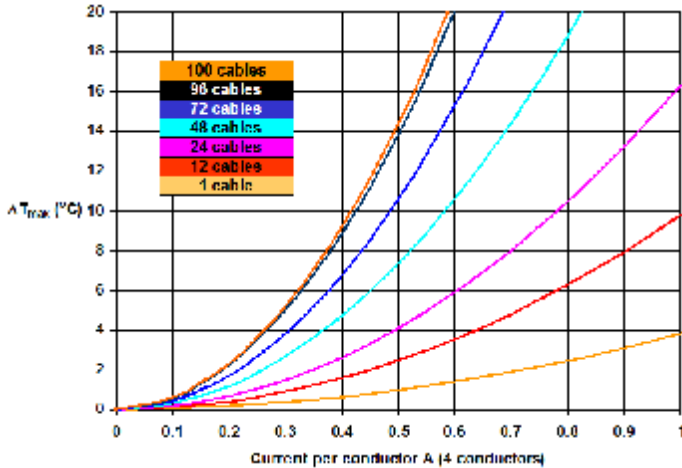
MORE HEAT THAN LIGHT! - THE HIDDEN IMPACT OF POWER FEEDING USING STRUCTURE CABLING

by

**Mike Gilmore, Technical Director of the FIA
for Netcomms Europe (November 2011)**

Uptake of equipment that uses structured cabling to receive power is growing exponentially. This began in 2003 with the PoE standard (IEEE 802.3af) and has accelerated with the advent of IEEE 802.3at which included the original, IEEE 802.3af, as Type 1 and added the Type 2, higher power, version commonly known as PoE_{plus}. However, the fact that these solutions are standardised by IEEE should not blind us to the fact that the higher power options presents structured cabling with some challenges which tend to

be glossed over - which when coupled with changes in the way certain suppliers are exploiting the range of possible implementation options raise real concerns. As Chairman of the UK body responsible for structured cabling design standards, I receive an increasing number of queries regarding these challenges and concerns and action is now underway to provide advice and guidance. This article outlines both the issues and the responses being undertaken.



heat generated within the cable depends upon its d.c. resistance but any increase in temperature at its surface also depends on its environment. Measurements undertaken before IEEE 802.3at was published were based upon bundles of cables suspended in free space and showed that IEEE PoEplus would increase the temperature of the centre of a bundle of 100 cables no more than 5 °C. Clearly, a reduction in the number of cables in the bundle will reduce the temperature increase at the centre of the bundle (as shown in the diagram). Using bundles of 24 cables) could restrict this increase to less than 2 °C. However, very few installations will see isolated bundles of 24 cables in well ventilated conditions. Instead, bundles will be stacked on cable trays which restrict ventilation or perhaps installed in trunking or conduit or even worse, installed in thermally insulated areas. None of these situations has been modelled.

There are other factors that can influence the level of heating - cables with higher resistance than standard Category 5 horizontal cables provide one obvious example. Cables built from 26 AWG conductors, sometimes called zone cables, have a conductor d.c. resistance up to 50% higher than that specified for conventional Category 5 products. Suppliers clearly state that such cables are restricted in terms of the length but fail to indicate the thermal impact of their increased d.c. resistance. Copper clad aluminium cables, while not meeting any Category classification, are increasingly being used due to their comparatively low cost and these cables also have heightened d.c. resistance.

Focussing on connectors, PoE power is only applied gradually following initial connection but the de-mating process that can potentially introduce damage when the full pair current is applied to a momentarily intermittent contact causing an arc between the plug and the socket. A new specification is being developed for connecting hardware under current carrying conditions. This type test assesses connections over 100 mating and de-mating cycles and for a conductor current of 600 mA (rather than the 750 cycles for non-powered connections). However, this test is not automatically applied as part of the "RJ45" product standard so "PoE performance" has to be additionally included within any procurement specification.

Faced with these issues the standards community has to decide how to proceed to protect installers and users alike. In European standards shall we address it in the cabling design standards or via the installation and operation standards?

At the design level it appears that as the generic cabling design standards all support PoEplus, and were instrumental in the agreement of its power feeding objectives, they will have to be amended to include the test detailed above for all connecting hardware. There is also a loophole in EN 50173-1 and ISO/IEC 11801 that allows high resistance on short channels which may need to be dealt with.

All these issues apply to PoEplus using Category 5 (and above) cabling - but we are already seeing transmission products that significantly exceed the total cable current of PoEplus and which lie outside any recognised standard. Installers are becoming concerned about the use of their "standard" structured cabling to provide these excessive power levels. So, the main activity focuses on installation planning and practices in relation to planning of cable bundles, ventilation of pathways and de-rating of supported lengths. That may sort out future installations but for legacy installations we may need to develop administration rules based upon an audit of the cabling and its environment which may lead to restrictions on use for power feeding.

Fortunately work has already begun in Europe, initiated by members of the Electrical Contractors Association ITEC group and supported by the Fibreoptic Industry Association (as co-hosts of the TIA-B, alongside ECA-ITEC). Additionally, the FIA has already produced White Papers in association with the British Cable Association addressing the use of copper coated conductors - of which thermal impact is only one operational issue.