



The Fibreoptic Industry Association

www.fia-online.co.uk

# NEWSLETTER

## Issue 86

### October 2007

THE FIBREOPTIC INDUSTRY ASSOCIATION

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### FIA and the TIA-B

The final arrangements are now in place for the hosting of the TIA-B. Agreements have been reached between the **FIA**, ECA-ITEC and the CMA, which many members may remember as the TMA – the Telecommunications Managers Association.



The individual strengths of the three co-hosts are expected to provide excellent avenues not only for the development of telecommunications infrastructure topics but also the dissemination of the information produced by the TIA-B (see page 2 for more details).

### A warm welcome to the following NEW MEMBERS

#### Corporate

- 629 - PINEHALL COMMUNICATIONS LTD.
- 628 - TRANSEND LTD.
- 625 - PRB FIBRE OPTICS
- 624 - KEYMT LIMITED
- 620 - PROFESSIONAL QUALITY MANAGEMENT SERVICES LIMITED

#### ex-CITA Interim

- 627 - NIGHTLAKE LIMITED
- 626 - INTEGRATED NETWORKED SOLUTIONS LTD
- 623 - FMS DATA CABLING LTD
- 622 - MILLS LIMITED
- 621 - SLDATA LIMITED
- 619 - BAILEY TESWAINE LIMITED
- 618 - SHARPMARK LABELLING SYSTEMS
- 617 - MULTINET NETWORK SERVICES LTD
- 616 - COMTEC TELECOM AND DATA LTD.
- 615 - QNET GROUP LTD.
- 614 - WH GOOD LTD.
- 613 - BRIDON IT SUPPORT LTD.

### FIA-online.co.uk

Visit the site and familiarise yourselves with its content - to access member-only pages you will need your current membership password as issued in January 2007. If you do not know what it is contact your FIA Principal Contact - failing that contact the **FIA** Secretariat

**BSI and FIA**  
**BIP 0007:2004**

**Telecommunication cabling and equipment installations: A guide to requirements and responsibilities**

Don't forget – the FIA sponsored the BIP in support of BS 6701:2004 - it's a free download to members.

### FIBREOPTIC INDUSTRY ASSOCIATION

*The FIA is a Company Limited by Guarantee*

#### Management Council

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

#### Industry Sector Directors

- Dave Madsen - Test & Measurement  
*(DMOptics)*
- John Colton - Training  
*(Lucid Optical Services Ltd.)*
- Lee Funnell - Qualifications  
*(The Siemon Company)*
- Sydney Hogg - Passive Components  
*(Schneider Electric UK Limited)*
- Peter Lythgoe - Installation  
*(Lythgoes)*
- Phil Whitehead  
*(ACCL)*

## TIA-B update

In the last Newsletter, we introduced the possibility of a cross-platform telecommunications infrastructure advisory body to replace and enhance the services of CITA (ex-TIA (UK)).

From the **FIA** perspective the objective of the TIA-B (**Telecommunications Infrastructure Advisory Board**) is to:

- allow information from the existing **FIA** commitment to standards activity to be presented to a wider audience and to cover a wider range of telecommunications technologies;
- support **FIA** members who wish the quality of technical support documentation, query resolution and arbitration/audit services already provided by the FIA to its core technology to be extended to all telecommunications infrastructure cabling media;
- produce technical services including BSI-endorsed publications to support the “copper” cabling infrastructure sector;
- allow services already offered by the **FIA** and to be extended to cover all telecommunications infrastructure cabling media.

It was never the intention of the FIA to single-handedly manage the operation of the TIA-B. Instead the FIA were keen to involve other trade associations as co-hosts. The most obvious trade body was the ECA (Electrical Contractors Association), and specifically the ITEC (Information Technology, Electronics and Controls) group within the ECA. The FIA opened early discussions to this effect and to get the “ball rolling”, pending any agreement between the FIA and ECA, an inaugural meeting of the Telecommunications Infrastructure Advisory Board was held on 10<sup>th</sup> September 2007 at the IET, London - free-of-charge to all FIA and ECA-ITEC members. Following a 90-minute presentation of the objectives and operation of the TIA-B, the meeting moved on to agree the initial projects to be handled by the TIA-B.

Six projects were identified as being of either high or medium priority. High priority items were the development of an Infrastructure Advisory Note (IAN) entitled “Standards Usage Guide” and the development of Standard Interpretation Documents (SIDs) on “Segregation between mains power and telecommunications cabling” and “Earthing of cabinets/frames/racks”. These are of significant value due to the expected changes to the requirements the European, and therefore UK, standards in 2008. In the medium priority area were three further IANs covering “Glossary of terms”, “Wireless network installation practice and safety” and “Cabling infrastructures and carbon footprints”. The latter created significant interest during the meeting so we look forward to seeing the scope of this most topical work.

Project leaders for most work packages were identified at the meeting and the work on all six projects will begin almost immediately. In addition, three other issues of considerable value were deferred pending decisions by co-hosts and the outcome of other standards activity. Complete information regarding the meeting is downloadable at [www.fia-online.org/TIA-B/pdf/L5142.pdf](http://www.fia-online.org/TIA-B/pdf/L5142.pdf).



Since that meeting, we are pleased to report that not only have the ECA-ITEC agreed to become co-hosts but that the CMA have also been involved in similar discussions.

This is excellent news allowing the TIA-B and the membership of its hosts to benefit from:

- the historic commitment to, and substantial sponsorship of, international, European and UK standardisation activities across all telecommunications media by the **FIA** via its Technical Directorate;
- the vitally important links to the electro-technical area provided by ECA-ITEC and the wider ECA;
- the user and consultancy base within the CMA.



This is a true “win-win” situation for members of all three bodies and work has already started to identify the immediate and medium-term tasks.

**REMEMBER** - any member of a TIA-B host is automatically a member of TIA-B, but does not have membership rights to the other hosts - therefore FIA members will have seamless access to the TIA-B members site, but will not have access to the members sites of the ECA-ITEC or CMA.

## FIA Membership accelerates

The membership of the **FIA** has accelerated through the 200 barrier for the first time since April 2005. More than 10 new members have joined the FIA on a “free-transfer” from CITA and we hope that most of these will fully participate in the FIA activities and those of the TIA-B next year.

## FIA Membership password system - changes

If you have recently tried to enter the FIA members site you will have noticed a different system in operation which involves both a “Username” and a “Password”. The username is “**FIA**” and the password is the one that has been issued to all members since January 2007.

The reason for the change is the development of the new TIA-B site that will use the same system to access the members area. The new system will, in due course, allow the FIA to restrict access to members who have not paid their fees.



[www.fia-online.co.uk/TIA-B](http://www.fia-online.co.uk/TIA-B)

**FIA Standards Forum**

- **documents available for download and comment NOW**

The Standards Forum now offers **FIA** Members the opportunity to comment on the standards in development by the fibre optics and cabling committees in ISO/IEC, IEC, CENELEC and BSI. These cover a 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** site area, type in your password, go to Standards Forum and follow the instructions.

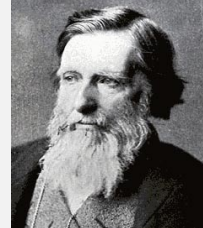
**The Law of Business**

"There is hardly anything in the world that someone cannot make a little worse and sell a little cheaper, and the people who consider price alone are that person's lawful prey.

It is unwise to pay too much, but it is also unwise to pay too little. When you pay too much, you lose a little money, that is all. When you pay too little, you sometimes lose everything because the thing you bought is incapable of doing the thing you bought it to do.

The common law of business balance prohibits paying a little and getting a lot .... it can't be done. If you deal with the lowest bidder it is well to add something for the risk you run. And if you do that you will have enough to pay for something better."

John Ruskin 1819-1900

**Mk.II Approved Installer Scheme focuses on "Risk-aversion"**

For many years the **FIA** operated an Approved Installer Scheme based upon the application of the relevant installation standard for fibre optic cabling (which at the time was BS 7718) and systems assurance in accordance with ISO 9000. The competence of personnel was also addressed by reference to City & Guilds 3466 qualification. A number of substantive changes to these foundations have automatically forced a change to the scheme.

In addition, market changes have created a paradox for high performance balanced and optical fibre cabling installations. On one hand, the business has become increasingly competitive and commoditisation has led to the envelopment of telecommunication cabling within general mechanical and electrical (M&E) contracts subsequently managed by non-specialists more used to plumbing, gas-fitting and electrical installations. On the other hand, the technical challenges faced by installers have not reduced - in fact some would say they have increased. Faced with these conditions, installers need to complete projects on time and cannot afford to be delayed by arguments over technical or contractual performance because they need to maximise the profit margins available. As always, clients demand operational, maintainable and repairable installations that are completed on time, with few contract variations and no need to litigate.

Therefore the objectives of the client are not in competition with the needs of the installer. The words of John Ruskin in his "Law of Business" - see above - are as pertinent today as when they were first penned. It is the role of an Approved Installer Scheme to produce a match between the two parties based upon their stated needs. Two fundamental questions were posed to the FIA Council at the beginning of 2005 - "should be the FIA Approved Installer Scheme be replaced at all?" and if so "what with?"



The **FIA** decided that their Mk.II Approved Installer Scheme should be based on the concept of "risk aversion". Some are surprised by this analysis - suggesting that "good" installers should undertake "high quality" installations - unfortunately "high quality" is a most elusive characteristic and is difficult to define - and if we cannot define "high quality" then we should not rely on it too much. Others have considered that "competence" should be the benchmark. Again, this is not so easily addressed - primarily because competence is a personal characteristic. There are plenty of competent people who can do their jobs very well indeed but they work for organisations that use their skills inappropriately or incorrectly and render them incompetent as a result. So the employment of competent people may not be the key criterion we might have initially imagined.


Risk aversion is good for all parts of the supply chain. "Risk averse" installers will ask the pertinent questions of their suppliers in order to use their products correctly and from the supplier's perspective, installers that minimise risk will be more soundly-based from a commercial viewpoint. These same installers will employ competent persons in a professional manner - emphasising rather than undermining their competence.

Installers committed to the "reduction of risk" will be very careful not to over-commit and will have a good understanding of the requirements of the various standards they are asked to work to - thereby reducing the risk not only for themselves but for their clients.

The **FIA** are pleased to offer Approved Installer status to organisations who are committed to being "risk averse". Do such paragons of virtue exist?

Well yes they do - there are actually quite a few of them. They are frequently not the biggest players and they are not also always the lowest bidders but because they are averse to, and seek to manage, risk they may be the lowest cost option at the end of the day. The new FIA Approved Installers Scheme is targeted to provide "risk averse" installers with the recognition due to them.

Welcome to the  
**APPROVED INSTALLER DATABASE**



COMPANY: ACME INSTALLATION COMPANY  
FIA MEMBERSHIP No.: 765  
APPROVED INSTALLER No.: AI0001

**RISK ASSESSMENT MAIN MENU**

PROJECT NAME	RECORD ID	START DATE	END DATE
UNIVERSAL DATA	1811	11/11/2006	25/11/2006

DESIGN/SPECIFICATION	CONSTRUCTION	INSTALLATION	CUSTOMER
D1: QA Overview	C1: Safety/Preparation	I3: Safety	W1: Safety
D2: Safety	C2: Ducts/chambers	I4: Installation	W2: Infrastructure
			W3: Cabling
			W4: Testing
			W5: Documentation

APPROVED INSTALLER No. AI0001  
PROJECT NAME/ID UNIVERSAL DATA

**DESIGN/SPECIFICATION CHECKLIST**  
QA Overview

RECORD ID 1811

Click on highlighted index letters for typical table of responsibilities

	Yes	No	NA
A Is there an Installation Specification (InSpec)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B InSpec addresses other necessary building services?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C InSpec addresses alarms and associated controls?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D InSpec addresses atmospheric control systems?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E InSpec addresses other relevant infrastructures?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F InSpec details applicable legislation/regulations?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G InSpec details applicable site contacts?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H InSpec contains Technical Specification? <input type="button" value="TechSpec"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I InSpec contains Scope of Work? <input type="button" value="Scope of Work"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J InSpec agreed with customer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Is change control in place for InSpec? <input type="button" value="Quality Plan"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L Quality Plan agreed with customer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M Is change control in place for Quality Plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
N Installed system power requirements advised to customer?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
O Is a "paper trail" audit system defined and in place?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## FIA Approved Installer Database

The publication of BS 6701:2004 "locked-in" other primary installation standards including BS 7671, BS EN 60825 and the BS EN 50174 series of standards. This provided the FIA with a significant opportunity - embedding risk-managed and best installation practices into a single quality assurance tool - the **FIA Approved Installer Database (AID)**.

The AID takes the form of an Access database that is supplied to each FIA Approved Installer that contains all the risk elements that the installer may encounter. There are four logical areas of risk - "design/specification", "construction", "installation" and "customer" - and each area comprises a number of sub-groups leading to a total of almost 300 individual elements.

The Approved Installer records those risk assessments that apply at one or more stages of an installation. Presented as a series of tick lists, each sheet represents a snapshot of those activities being performed at the time the check was carried out. As the information is loaded into the FIA Approved Installer Database (AID) a much wider picture of installer performance will accrue, possibly spread over a number of projects.

Completed in this way the scheme does not place an onerous burden upon the installer.

Upon completion of each project, the Approved Installer is required to submit the record-keeping i.e. the contents of the AID for that project via e-mail to the FIA. The FIA will undertake an audit of one or more of the installations recorded - against the contents of the database. Equally importantly, the FIA will use the statistical trends contained in the total dataset provided by all Approved Installers to address specific shortfalls in risk management.

On its own the AID would simply represent an added load for the installer so the FIA has provided an unparalleled degree of local and on-line assistance, hyperlinked from each risk element that explains in detail the relevant requirements of the current and future standards. In essence, this package brings the Approved Installer and the **FIA** into a partnership in support of risk-managed installations. **This represents the most comprehensive support package provided with any approval system.**

## How about sponsoring a Newsletter?

The FIA Newsletter continues to develop and we are now offering the opportunity to sponsor each of our bi-monthly Newsletters. The sponsors details will appear on each page and be hyperlinked to their web-site and e-mails as appropriate. For more details contact Jane Morrison via [jane@fiasec.demon.co.uk](mailto:jane@fiasec.demon.co.uk)

## New cost structure for **FIA** Qualification Scheme

The cost structure for registration and ongoing maintenance of your award under the **FIA** Qualification Scheme has been dramatically simplified. The admittedly rather complex structure has been replaced by a simple once-only fee as follows. The once-only Enrolment Fee of £49+VAT covers the establishment of the Learner Record and a hard-copy certificate detailing the Award achieved. The FIA uses this fee for administration costs to monitor and cross-check trainee progress. This fee is waived for FIA Personal Members. Also the ongoing charges have been dispensed with as detailed below.

- **ANNUAL FEE:** There is **NO** annual fee for learners, but there is a commitment to do at least one unit per year.
- **NO ADDITIONAL UNIT FEES:** After achieving a Unit award with a training provider as part of a Level II-IV Award, the learner will need to register this Unit with the FIA by submitting a Unit Feedback Form. There is **NO** fee for this.
- **NO ADDITIONAL AWARD FEES (- LEVEL IV):** After achieving the next Award level a new hard-copy certificate will be issued. There is **NO** fee for this.

For details for the Qualification Scheme go to <http://www.fia-online.co.uk/equals01.htm>. To download the FIA Newsletter dedicated to the **FIA** Qualification Scheme go to <http://www.fia-online.co.uk/pdf/NL/QSNewsletter-L4692.pdf>.

## Quality Assurance and Installers Qualifications

One of the aims of the Fibreoptic Industry Association is to ensure that the delivery of optical fibre cabling solutions is as seamless and trouble-free as possible for their users. However, one topic that has recently become of interest is the balance that is struck between quality assurance and installers personal qualifications. In two recent cases, problems have occurred due to an installers reliance on the paper qualifications of their personnel - assuming that this provides quality assurance - rather than taking steps to apply quality assurance techniques to define the practices of the qualified operator.

This has "flagged up" the role of an individuals qualifications and how they relate to specific practices undertaken in the field.

The recognised UK standard for the installation of telecommunications cabling is BS 6701:2004. This requires the preparation of a quality plan, by the installer, in response to a client specification. Many installers do not like to be reminded of this because they feel it imposes as an increased workload. However, this is because they do not clearly understand the role and construction of a quality plan.

A quality plan is essentially a register of existing Method Statements to be applied to the specific installation, tailored to reflect the applicable contractual responsibilities and interfaces, together with information detailing the competence of the personnel to undertake the tasks outlined in the Method Statements.

The Method Statements define exactly what to do and define how the competence of the person undertaking the task is matched to that task. The misunderstanding that many installers have, with dramatic and costly results, is that an individuals qualifications, as a competence indicator, replace the need for a Method Statement.

Method Statements should reflect the requirements of current standards whereas qualifications do not seek to do so. Qualifications rarely keep pace with technical standards and this problem is exacerbated in fast moving areas such as telecommunications.

One of the most obvious examples is that of test methods. The test standards for installed optical fibre cabling using either light source/power meter or OTDR equipment have changed considerably in recent years. The specific measurement process is dictated both by what is to be measured and the configuration of the cabling being measured. An OTDR can be used to characterise an optical fibre from one end (i.e. without any connection at the other). However, the relevant standards state that an OTDR only measures continuity if a tail lead is attached at the remote connection. A person that has been trained and obtained a City & Guilds qualification such as 3666-02 should be expected to know how to use an OTDR in all circumstances. However, unless the Method Statement states that a tail lead is to be used then it cannot be assumed that continuity has been confirmed by the use of an OTDR. Simply stating that the testing will be undertaken by a qualified person is therefore not a guarantee of installation quality assurance.

The FIA strives to put in place control systems such as our Approved installer Scheme and Qualifications Scheme to increase the general level of quality assurance in order to provide commercial benefits to both installers and their customers. The FIA Approved Installer Scheme monitors the application of UK and European installation standards and provides detailed information to the Approved Installers in respect of risk management. The FIA Qualification Scheme recognises individuals qualifications and records their advancement by ongoing education.

However, these are two separate schemes and are not interchangeable - installers and clients should also not confuse quality assurance with personal competence.

This article was published in Networking+ in September 2007





If you already receive **networking+** magazine you will have seen that the FIA produces a half-page editorial in each issue. In order to save space in this Newsletter we have arranged for all recipients of this e-mail to also receive a free-copy of **networking+**. So - you can keep in touch with the FIA and the other contributors to this broad-based, well balanced networking magazine. If you want to download the text of earlier **FIA** articles go to <http://www.fia-online.co.uk/earticles.htm>.

## **FIA AGM 2007**

The Annual General Meeting of the **FIA** will be held on Thursday 6<sup>th</sup> December 2007 at The Saracens Head Hotel, Towcester, Northants NN12 7BX - starting at 11:30 a.m. The agenda and associated paperwork is being sent to all members via post.

The FIA Council and Secretariat would be pleased to take this opportunity to meet members at this annual event. If you have not attended before or are a new member in 2007 you will be particularly welcome.

## **Updated FIA White Paper for Singlemode Optical Fibre**

It is very easy to forget that the **FIA** provides and maintains information services via its White Papers section at <http://www.fia-online.co.uk/epaper-tech.htm>. Unlike the FIA Technical Support Documents, the FIA White Papers are available to members and non-members alike - this intentional level of accessibility sometimes stops members from realising that the White Papers contain useful information delivered in a more "conversational" style.

An example of this is the FIA White Paper entitled "**An Overview of Singlemode Optical Fibre Specifications**" - first published in 2004. At that time, there were 12 different ITU-T specifications for singlemode optical fibre and the White Paper provided a mapping between ITU-T and IEC specifications. New specifications continue to be developed and the White Paper has been updated three times to keep pace with these changes. The latest update has been completed in October 2007.

There are now 17 different SMF specifications starting with G.652 and ending with G.657. The G.657 optical fibres are interesting as they are intended for use within customer premises (perhaps as part of an FTTH strategy). G.657 is entitled "Characteristics of a bending loss insensitive single mode optical fibre and cable for the access network" defines optical fibres that produce lower levels of attenuation due to bends. The title is slightly misleading since these are not "bend insensitive" but "less bend-sensitive" products. Variant G.657a optical fibres feature a reduced water peak specification that allows them to be used in the wavelength region between 1310 nm and 1625 nm - supporting Coarse Wavelength Division Multiplexed (CDWM) transmission. Variant G.657b optical fibres have a specified attenuation at 1310 nm, 1550 nm and 1625 nm but do not have transmission performance required specified at intermediate wavelengths. It should be pointed out these optical fibres are not specified to have increased strength under bend conditions.

## **Plastic Optical Fibres - finally?**

Until recently, plastic optical fibre has failed to break into the areas considered to be the domain of by all-silica optical fibre. This may be set to change and the **FIA** has produced a new White Paper giving the background to these changes.

For many years, plastic optical fibres have been used in a wide variety of non-mainstream telecommunications applications. Two obvious examples are its applications for data networking within automobiles and in certain industrial process monitoring, control and automation (PMCA) networks. Domestic consumers are also familiar with plastic optical fibres in the audio-visual area where they are used to interconnect hi-fi subsystems and DVD equipment.

This "application-by-application" growth of plastic optical fibres has led to the creation of a plethora of different specifications. Many people are surprised to find that there is an IEC standard covering these products but there is - IEC (and BS EN) 60793-2-40. There are currently eight different constructions/specifications specified in the standard and these are designated Types A4a to A4h - covering a range of core/cladding solutions, operating wavelengths and conditions under which parameters are to be measured.

However, we are now seeing claims in the cabling press of 1000Mb/s Ethernet transmission over 100 metres of plastic optical fibre - this suggests the use of A4f, g or h products since only they have the required bandwidth and correct operating wavelengths. Moves are underway to include two different selections from IEC 60793-2-40 within the residential environment via amendments to the standards ISO/IEC 15018 and EN 50173-4 (both of which specify generic cabling in homes). OF Category OP2 (already in the industrial cabling standards) will be re-specified to the much better performing Type A4g.

To read more go to <http://www.fia-online.co.uk/epaper-tech.htm>.

**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.**  
**It can, therefore, promote the activities of Members to other Members.**  
**Articles, product information, news items etc. are always welcome.**  
**Please send the information via email (jpg illustrations) to Jane Morrison via [jane@fiasec.demon.co.uk](mailto:jane@fiasec.demon.co.uk)**