



FIA Secretariat Report – Council meeting Thursday 8th October 2009

Actions: Actions completed from previous meeting 15th July 2009 –

Membership: At the previous meeting I reported the m/ship number of 189 - **Changes since then:**

20/07/09	1 x new – Corp A	Cable Telecomm Technical Staff Ltd.
03/08/08	1 x new - Corp A	Ashurst Sols Ltd.
16/09/09	1 x new - Overseas Associate	Erebuni Networks
16/09/09	1 x new - Corp A	ICS Ltd.
25/09/09	1 x new - Corp A	OFS Fitel
25/09/09	1 x new - Corp A	Nexus CSL
01/10/09	1 x new – Corp A	Mesmotec Ltd.
01/10/09	1 x resign – Corp A	Turnkey Fibre (advised ‘not renewing’)
06/10/09	1 x resign – Corp C	Honeywell (principal contact advised ‘not renewing’)

TOTAL – members 194 + Pro-forma invoices sent to new member applications – awaiting payment:

Bailey Teswaine (Corp C), Arden Photonics (Corp A), Ocean Data & Voice Services Ltd. (Corp A), KMCO Services Ltd. (Corp A) and Utility Fibre Systems (Corp A)

FIA Newsletter: Hard copies of the recent Newsletters: ‘British Standards for Cabling Infrastructures’ & Testing of Installed Optical fibre cabling’ were sent out on 30th September.

Next general FIA Newsletter – end of October?

FIA Qualification scheme: Paul Machin (Level III CMS) – copy certificates sent to JC & LF on 18th Sept, chased again 02/10/09 – JC OK’d should step up to Level IV but LF should confirm also – LF sent copies of paperwork again on 5th Oct.

Grant Sauls – Learner – 050002 – Level III (Optical Fibre) Design Specialist – re CPD on 3rd July – he is going to send in some certificates for review.- chased again 02/10/09 – certificates sent to JC & LF 02/10/09 – Have OK’d as evidence of CPD – register to be updated. Grant now asks how to advance to a CDE – await reply from JC & LF.

Paul D Sanders - Learner – 050005 – Level IV (Optical Fibre) Design Engineer – re CPD on 3rd July – no reply to date - chased again 02/10/09

Clinton Thesen - Learner – 050010 – Level IV (Optical Fibre) Measurement Specialist – re CPD on 3rd July – no reply to date - chased again 02/10/09

Certified Trainers renewal – completed for Lucid (J. Colton, D.Gallivan & S. Dobson)

Failed Certified Trainer Leslie Jones of Hartwood Services – no instructions for a re-sit.

CTTS: re-sit dates – nil received to date.

FIA – Approved Installer Scheme: The two AIS letters were sent out on 9th September – to all members who state Installation as their main or secondary activity. All letters were sent with application forms and the 3 page explanatory leaflet.

T. Oldershaw of J. Brand – I emailed an application form to him on 5th October.

FIA AGM – Thursday 3rd December 2009 – The Saracens Head Hotel, Towcester (venue booked)

FIA Council – 9 places allowed in total. Current: MG, PB, JC, LF, JM, PW, MC, SC & KJ

Is every one willing to continue??

2 members should stand down/retire/rotate (but will be eligible for re-election) – I need to know Council member plans in the next couple of weeks.

The rotation rules (if no-one resigns) would mean it is the turn of PW & JM (both appointed in Dec 05).

With regard to the agreement last year to change / add a clause to the M&A re 'mutual trading status', it now appears that this is more complex than anticipated. I am therefore suggesting that we agree not to make any proposals to change the M&A at this AGM but wait for further information from the tax department at Critchleys (FIA auditors).

Agenda etc. to members – Agenda, proxy forms etc. etc. to be posted out to members on 2nd November.

Usual timings for the day (3rd December) are:

Council meeting starts 10.30 (agenda item – formal approval by Council of FIA accounts y/end 31/08/09),
Council meeting ends 11.15.

AGM starts – 11.30

AGM ends – 12.00

Open discussions – 12.00 – 12.30

Lunch – 12.30

New Council re-convenes – 13.30

All Council to send their activity reports (for the year) to PB for the Chairman's report by **23rd November**.



FIA Installation Director Report – Council meeting Thursday 8th October 2009

Actions: Actions completed from previous meeting 15th July 2009 –

FIA - AIS Letters:

Forwarded to Jayne on the 30th July and received by the membership on or about 11th September

FIA - AIS Letter to Consultants:

Still to be arranged with MG, draft required by KJ

Contact Rob Shepherd:

Press release attached for comment prior to forwarding to Rob. This was submitted to the NCN on the 23rd July but did not make the publication however, I have spoken to Rob and he has assured me it will make it to press.

FIA – Approved Installer Scheme:

We have had a telephone enquiry regarding clarification of the requirements of the scheme and requesting that an ISO certificate can be accepted. I have informed the member (who would not give their name) that unfortunately an ISO certificate would not substitute for the ECA ITEC but if he made application we would look at it.

We met with Tim Oldershaw of J Brand at Telecoms 09 and discussed the scheme with him and he was keen to join followed up with a telephone call this week and left a message.

FIA Strategic Plan

1. Mission state is fine as it explains the FIA's direction but would need to be revisited if No 2 happens.
 2. For the FIA to be seen as the NIC EIC of the communications industry protecting both client and installer, removing the "cowboys" out of the industry giving the market share to its members
-

23rd July 2009

**Managing Director of EDS Systems appointed Installation Director
for the UK's Fibreoptic Industry Association**

Ken Jones, managing director of Flintshire-based EDS Systems (North Wales) Ltd, has been appointed as the Installation Industry Sector Director for the national Fibreoptic Industry Association (FIA).

The FIA's aim is to promote high standards of service within the fibreoptic industry and to offer support and advice to all its members which include companies such as fibre optic manufacturers, suppliers, installers and customers. Commenting on his new role, Ken Jones said: "EDS Systems has been a member of the FIA for a number of years and I'm delighted to have been given this opportunity to join the management team. As Installation Sector Director my main task is to represent the installers and ensure that they are gaining the best opportunities available from their membership."

Following his appointment, Ken has completed a review of the FIA's Approved Installers Scheme. The Scheme derives of a directory of approved installers, who have met with the agreed standard of quality and service and can offer end users the required experience and qualifications to undertake cabling infrastructure projects.

One of the main issues faced by any approved installer is that end users and their consultants needed to understand the key values of the Scheme. Ken Jones comments: "Coming from an industry where quality and performance is paramount to British Standards and ISO standards, I believe that the fibre optic and ICT industry should be recognised for the skill set of its engineers. By raising the profile of the FIA Approved Installer Scheme and getting it promoted within other building service industries, we aim to raise awareness to the standards that should be attained, giving quality of service and risk management to both the end user and the supplier."

The review, involving the whole FIA board, also included a redesign of the Approved Installer Database and streamlining the whole process. Ken explains: "We have opened up the database to all customers and consultants enabling them not only to understand, but also to participate in, the risk avoidance actions taken by our installers".

-ENDS-

About FIA

The Fibreoptic Industry Association Limited was inaugurated in February, 1990 and aims to promote high standards of service within the fibreoptic industry and to represent its members at a national and international level. It has its own Memorandum of Association and Articles of Association.

Web: www.fia-online.co.uk

About EDS Systems North Wales Ltd

EDS Systems North Wales Ltd works with leading IT and communication companies in the North Wales and North West region to provide core expertise in fibre optic products and services. The company's expertise as a fibre optic solutions provider is maintained through a team of engineers with over 20 years of technical expertise delivering a range of services from CCTV, telephony and structured cabling. **EDS Systems also deliver** products and services to education, commercial and industrial organisations. The company has recently moved into new offices at Garden City.

Web: www.edssystems.com

[Contact Ken Jones, Managing Director, EDS Systems \(North Wales\) Ltd.](#)

[Tel: 07753 639411](tel:07753639411) [Email: ken.jones@edssystems.com](mailto:ken.jones@edssystems.com)

For the attention of THE FIA COUNCIL



The IT cabling infrastructure
division of
e-Ready Building Limited

The IT cabling consultants

e-Ready Building Limited
Next generation IT infrastructures

Date: 7th October 2009
Our Reference: MG/MG/5521
Your Reference:

REPORT FOR FIA COUNCIL MEETING 8th OCTOBER 2009

1 ACTIONS

1.1 Completed

Talk to RS re article on the new AIS – **completed via below**
Give KJ RS of NCN contact information - **completed**
Draft AIS letter with KJ re Consultants - **completed**

Advise JM re any possible advertisers (non-members) for the e-guide - **completed**
Check ads rec re e-guide and advise Sec of any o/s - **completed**

Modify docs on testing and write White Paper - **completed as Newsletter**
Prepare next NL for end of July - **completed (2 Newsletters issued)**
Update Training pdf and put on website - **completed**
Add list of members re supply of test cords to web site - **part completed (see below)**

Draft flyer re FIA 2010 seminar for Telecoms show - **deferred to October Newsletter**
e-guide - make possible modifications - **deferred to interim update**
Ask members questions re qualifications - **awaiting input**

Update TSD, TSD-2000-3-3 (to reflect publication of EN 50174-1) - **completed**

1.2 Underway

1.2.1 GENERAL

- Send SC email to members - input awaited - **completed - ready for circulation**

1.3 Ongoing

1.3.1 GENERAL

- Visit Linbrooke if CT exams are required
- Promote FIA membership
- Re-visit CTTS for CT exams re-sits

1.4 Outstanding

- Update TSD, TSD-2000-5-1
- Produce TSD-2000-2-3 Optical Fibre Cabling: Components: Cords
- Produce TSD-2000-3-2-1: Optical Fibre Cabling: Operation: Administration: User Guide (to reflect publication of EN 50174-1)

2 FINANCIAL

I distributed accounts for August 2009 on 5th October 2009. These show a YTD loss of £2726.51. At the same time last year the FIA was in profit £2633.33 (a downturn of £5360). Liquidity in August 2009 was £18552 c/f £24434 in August 2008.

The loss quoted above does not include any resignations or audit fees. While it is not the objective of the FIA to make year-on-year profit, the loss is a matter for concern and action.

		2008-2009	2007-2008
<i>Sales</i>	<i>Membership Sales</i>	£60,740.00	£60,560.00
	<i>Documentation Sales</i>	£7,681.68	£15,030.00
	<i>Events</i>	£0.00	£0.00
	<i>Other Sales</i>	£7,152.73	£5,000.00
	<i>Advertising Sales</i>	£0.00	£0.00
	<i>Services Sales</i>	£1,475.00	£2,865.00
	<i>Web-site</i>	£4,470.00	£5,615.00
	Total Sales	£81,519.41	£89,070.00
<i>Direct costs</i>	<i>Membership Costs</i>	£0.00	£0.00
	<i>Documentation Costs</i>	£42,763.10	£37,831.19
	<i>Events</i>	£0.00	£2,353.42
	<i>Advertising Costs</i>	£0.00	£0.00
	<i>Services Costs</i>	£4,311.24	£6,597.95
	<i>Miscellaneous Costs</i>	£0.00	£280.65
	Total Direct Costs	£47,074.34	£47,063.21
<i>Overheads</i>	<i>Fees</i>	£26,991.48	£26,495.94
	<i>Advertising, PR, Exhibitions</i>	£2,835.11	£3,035.19
	<i>Travelling and Entertainment</i>	£3,784.53	£5,565.41
	<i>Communications</i>	£1,786.09	£2,139.43
	<i>Professional Fees</i>	£307.00	£295.00
	<i>Equipment Hire and Rental</i>	£465.00	£810.00
	<i>Miscellaneous</i>	£0.00	£46.50
	<i>Bank Charges and Interest</i>	£536.67	£388.99
	<i>Depreciation</i>	£464.00	£597.00
	<i>Bad Debts</i>	£0.00	£0.00
	<i>General Expenses</i>	£1.70	£0.00
	Total Overheads	£37,171.58	£39,373.46
	Net Profit	-£2,726.51	£2,633.33

The review of the year and direct comparison to last year is shown above:

- the reduction in Standards Sponsorship and advertising on the web-site contributed a shortfall of £8493 in sales;
- a further £1390 shortfall occurred in Services Sales (Approved Scheme charges);
- the additional UKCPO fees (Other Sales) could not prevent an overall reduction in sales of £7551.
- reductions in overheads restricted the overall shortfall to the £5360 detailed above.

However, this hides the fact that the costs of Telecoms 09 (£2520) have been placed in 2010 accounts as prepayments - which they were not last year.

The predicted shortfall in Standards Sponsorship (£15000 in a full year) which would have meant significant changes in activity has been addressed. I have secured 50% of the total Standards Sponsorship for the coming and future years (assuming that the recession does not return). I am working on the recovering the remainder of the shortfall at this time.

Nevertheless, we need to either raise membership fees in the coming year or cut expenses to reflect the shortfall in Standards Sponsorship (£7500 in a full year) and the £5000 shortfall in UKCPO funding.

Additional members would assist but the number required provides little confidence in this approach. We cannot depend upon the Qualification Scheme for funds and the Approval Schemes are yet to prove themselves. As stated before, membership fees will need to rise and this needs to be agreed at the AGM this year. We need to agree the proposed changes at our meeting on 8th October.. There are at least two alternatives for raising fees and are indicated in the Table below.

A 20% increase in fees as detailed below would provide £74305. Alternatively an increase of £100 is less than £2 per week and this has some resonance for all members whereas a 20% increase hit larger companies harder. Increasing the corporate memberships by £100 and associates by £75 would draw in £80025.

	Current	Proposal A (20% uplift)	Proposal B (£100 uplift)
Corporate A	£250	£300	£350
Corporate B	£500	£600	£600
Corporate C	£750	£900	£850
Associate	£125	£150	£200
Overseas Corporate	£300	£360	£400
Overseas Associate	£125	£150	£200
Total (as 30/09/09)	62000	£74305	£80025

Other alternatives can be modelled using the membership sheet in monthly accounts xls file.

Either one of these proposals would provide a stable financial condition. The alternative would be to cut standardisation work drastically. It should be noted that sterling will remain weak and costs will be correspondingly higher next year.

3 WEB-SITE REPORT

fia-online.co.uk is functional at a 100% level.

If Council Members find pages that require amendment let me know.

For the information of Council Members:

- all Council Meeting Minutes, attachments and lists of actions can be found at **fia-online.co.uk/maa.htm**;
- it is no longer possible to access the FIA Members area without the correct password.

From 30th January 2009, the members access password has been "penGu86".

Google Analytics shows that access to the web-site has stabilised since the last report.

4 TECHNICAL REPORT

4.1 General

The MMF installed cabling test method and launch condition standard (IEC 61280-4-1) has been approved and published at IEC level. It is not yet published as an EN or a BS EN. In addition, Amendment 1 of ISO/IEC 14763-3 has been approved.

This allowed a specialist Newsletter to be created for the Telecoms 09 show which introduces the changes to the TSDs 2000-4-2-1 and 4-2-2 already planned. This Newsletter identified the following imminent actions:

- List of suppliers making equipment meeting the requirements of the launch condition standard (e.g. Fluke and EXFO);
- List of suppliers of mode controller cords;
- List of suppliers of test cords with reference grade terminations;

In support of the Newsletter and its actions list we need to:

- Develop an FIA Specification for reference grade terminations (the meeting with IEC SC86B on 5th/6th October 2009 raises this activity to the notice of standards bodies) - see Annex A;
- Update TSD 2000-4-2-1 to explain the relationship of FIA TSDs to the new standards IEC 61280-4-1 and ISO/IEC 14763-3 (explaining test limits);
- Update TSD 2000-4-2-2 to explain the relationship of FIA TSDs to the new standards IEC 61280-4-1 and ISO/IEC 14763-3 (explaining test limits).

A second specialist Newsletter covering British Standards for cabling infrastructure was published in time for the Telecoms 09 show.

4.2 Technical Support Guides

The following TSDs have been updated and uploaded to the web-site.

- TSD-2000-1-1;
- TSD-2000-3-3.

The update of TSD-2000-1-1 reflects the complete range LAN/SAN applications up to 40/100 GbE. This update should keep the document current for the next two to three years.

The update of TSD-2000-3-3 reflects the incorporation of the polarity maintenance text within BS EN 50174-1 and other standards. This should not require updating for the foreseeable future.

4.3 White Papers

The following three White Papers have been updated:

- PLASTIC OPTICAL FIBRE - IS IT FINALLY BECOMING A REALISTIC TELECOMMUNICATIONS MEDIUM?
- UNDERSTANDING OM1, OM2, OM3, OS1, OS2 and more!
- AN INTRODUCTION TO OM4

4.4 European Commission

The FIA has been granted "endorser" status under the EU CoC for Energy Efficient Data Centres. Our Day One seminars at the Telecoms 09 are good evidence of our commitment to energy efficiency and data centres in particular.

5 UKCPO

The PKTN project is now complete. The FIA will no longer receive any funding from this source.

In August 2009 I produced three Standards Activity Update Reports and a Standards Digest. These are to be found on the Standards Forum section of the web-site - and are therefore available to our members as well.

I also prepared and purchased an alternative web-site for the UKCPO (at www.ukcpo.net). The original site (ukcpo.org) is now defunct.

6 TIA-B

The TIA-B web-site is located at fia-online.co.uk/TIA-B.

No further progress has been made re- the previously reported fundamental changes to the management of CMA.

7 SEMINARS/EXHIBITIONS

7.1 FIA Seminar Topics

Discussion to take place with John Colton after the Council Meeting on 8th October.

7.2 Telecoms 09

See report from John Marson.

8 NEWSLETTER

Two specialist Newsletters were produced for the Telecoms 09 show.

General Newsletter Issue 92 is ready for circulation, but was deferred to allow the circulation of the specialist Newsletters. It will be circulated before end October.

9 ARTICLES

9.1 Networking+

I have written three articles for Networking+. See Annex B. The remaining deadlines for 2009 are as follows:

- 29/10/09
- 03/12/09

9.2 NCN

NTR.

10 APPROVED INSTALLER SCHEME

I have contacted Paul Vickers of Ove Arup but no response as yet.

11 FIA QUALIFICATIONS

NTR.

12 QUALIFICATION SCHEME

NTR.

13 STANDARDS ACTIVITY

13.1 British

13.1.1 BSI STANDARDS MAKER FORUM

Last meeting: 9th October 2008- M. Gilmore attended as TCT7 Chairman.

Next meeting: 4th November 2009 - M. Gilmore to attend as TCT7 Chairman.

13.1.2 BSI GEL 86: TECHNICAL MANAGEMENT COMMITTEE: FIBRE OPTICS

Last meeting: 30th September 2009 - M. Gilmore did not attend due to conflicting CLC meeting (TC205).

Next meeting: 30th tbc.

13.1.3 BSI GEL 86/1: SUB-COMMITTEE: OPTICAL FIBRES/CABLES

Last meeting: 3rd September 2009 - M. Gilmore attended..

Next meeting: 4th March 2010 - M. Gilmore to attend.

13.1.4 BSI GEL 86/2: SUB-COMMITTEE: CONNECTING HARDWARE

Last meeting: 10th June 2009 - M. Gilmore attended.

Next meeting: 21st October 2009 - M. Gilmore to attend.

13.1.5 BSI GEL 86/3: SUB-COMMITTEE: SYSTEMS

Last meeting: 30th September 2009 - M. Gilmore did not attend due to conflicting CLC meeting (TC205).

Next meeting: tbc.

13.1.6 BSI TCT7

Last meeting: 9th June 2009 - M. Gilmore chaired, Paul Bateson attended for the FIA

Next meeting: 2nd December 2009 - M. Gilmore to chair, Phil Whitehead to attend for the FIA.

13.1.7 BSI TCT7/-/1

Last meeting: 14th July 2009 - M. Gilmore chaired.

Next meeting: 8th December 2009 - M. Gilmore to chair.

13.1.8 BSI TCT7/-/2

All previous TCT7/-/3 activity has now been allocated to TCT7/-/2 (with effect from 16th September 2009).

Last meeting: 11th June 2009 (joint with TCT7/-/3)

Next meeting: 12th November 2009 - M. Gilmore to act as Secretary.

13.1.9 BSI TCT7/-/3

Last meeting: 15th September 2009 - M. Gilmore chaired.

Next meeting: tbc.

13.1.10 BSI IST6/-/12

Last meeting: 17th September 2009 - M. Gilmore did not attend, report submitted from TCT7..

Next meeting: tbc.

13.2 European

13.2.1 CLC TC205 WG08 (HBES)

Last meeting: 30th September 2009 - M. Gilmore attended obo TC215.

Next meeting: tbc.

13.2.2 CLC TC215

Last meeting: 12th March 2009, Darmstadt, Germany - M. Gilmore attended.
Next meeting: 21st April 2010, Brussels, Belgium - M. Gilmore to attend.

13.2.3 CLC TC215 CAG

Last meeting: 23rd June 2009, Frankfurt, Germany - M. Gilmore attended.
Next meeting: tbc.

13.2.4 CLC TC215 WG1

Last meeting: 28th/29th April 2009, London, UK - M. Gilmore chaired.
Next meeting: 24th/25th November, Brussels, Belgium - M. Gilmore to chair.

13.2.5 CLC TC215 WG1 PTT

NTR

13.2.6 CLC TC215 WG2

Last meeting: 30th June/1st July 2009, Berlin, Germany - M. Gilmore attended as Secretary.
Next meeting: 26th/27th November, Brussels, Belgium - M. Gilmore to act as Secretary.

13.2.7 CLC TC215 WG3

Last meeting: 7th October 2009, Brussels, Belgium - M. Gilmore attended.
Next meeting: tbc.

13.2.8 CLC "GREEN DATA CENTRES"

Last meeting: 17th June 2009, Turin, Italy - M. Gilmore attended.
Final meeting: 17th November 2009, Utrecht, Netherlands - M. Gilmore to attend.

13.2.9 ETSI ATTU (ACCESS, TERMINALS, WG AT2)

Last meeting: 24th April 2009, Sophia Antipolis, France - M. Gilmore to attend.
Next meeting: tbc.

13.2.10 ETSI/CLC CIG

Last meeting: 29th September 2009, Paris, France - M. Gilmore attended.
Next meeting: TBC - M. Gilmore to attend.

13.3 International

13.3.1 IEC SC86B

Last meeting: 5th/6th October 2009, Lewes, UK - M. Gilmore attended for FIA.
Next meeting: tbc.

13.3.2 ISO/IEC JTC1 SC25

Last meeting: 23rd September 2009, Beijing, China - S. Reeves attended for FIA.
Next meeting: October 2010, Seattle, USA - M. Gilmore will attend.

13.3.3 ISO/IEC JTC1 SC25 WG3

Last meeting: 23rd September 2009, Beijing, China - S. Reeves attended for FIA.
Next meeting: 22nd/26th February 2010, Buenos Aires, Argentina - M. Gilmore will attend.

13.3.4 ISO/IEC JTC1 SC25 WG3 CITG

Last meeting: September 2009, Beijing, China - M. Gilmore did not attend.
Next meeting: 23rd/24th February 2010, Buenos Aires, Argentina - M. Gilmore will convene.

Mike Gilmore

Annex A: Submission to IEC SC86B WG06



The Fibreoptic Industry Association

www.fia-online.co.uk

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**AN INTRODUCTION TO THE FIA
for the attention of
IEC SC86B WG06, LEWES, UK
5th - 6th October 2009**

Produced 29th September 2009

The Fibreoptic Industry Association represents almost 200 companies and individuals involved in the fibre optic cabling market. Members are international with overseas corporate members in Armenia, Austria, Australia, Denmark and South Africa. The majority of members are UK-based and the majority of members are involved in the installation sector.

The mission of the FIA is to promote high standards of service within the fibre optics industry and to represent its members at a national and international level by:

- providing specialist information and support services to our membership;
- providing a "shop-window" for our members products and services.

Part of that specialist information involves responding to shortfalls in standardisation due to the rapid pace of change in certain areas by producing Technical Support Documents.

In 2002, one such situation was identified due to the introduction of power meters with fixed detector heads rather than interchangeable adaptors which made it impossible to undertake attenuation testing of Configuration A cabling in accordance with the published IEC 61280-4-1 standard. During the period that the alternative methods in the TSD were being proven it was identified that even with the existing test methods, a significant variation in results was obtained when using different light sources.

This work was flagged to ISO/IEC JTC1 SC25 WG3 (who reacted by producing ISO/IEC 14763-3) and IEC SC86C who have now published IEC 61280-4-1:2009 which defines new strict requirements for launch conditions and test cords.

The FIA is now required to respond by undertaking four actions:

- to amend the TSDs to explain the changes in the standards;
- to list those suppliers claiming to provide light sources that meet the launch condition requirements of IEC 61280-4-1:2009 and ISO/IEC 14763-3 Ed1.1:2009 (and to highlight any additional test cord requirements that they may apply);
- to list those suppliers producing mode controller cords that meet the launch condition requirements of IEC 61280-4-1:2009 and ISO/IEC 14763-3 Ed1.1:2009 (and to highlight the limits of input conditions that may apply);
- to list those suppliers of test cords meeting the requirements of reference grade terminations as defined in IEC 61280-4-1:2009 and ISO/IEC 14763-3 Ed1.1:2009.

To undertake the last of these tasks the FIA will produce an interim TSD which defines the requirements of a "reference grade termination". This will be done with the support of UK standards experts among the FIA membership. However, this is only an interim stage and the FIA would support any action by IEC SC86B (including any joint work with IEC SC86A) in order to produce an IEC standard covering this topic.

As a first step, a specialist Newsletter has been produced for FIA members (and available to all via the FIA website) which explains the background to this topic and warns of the commercial risks of ignoring the standards now published. This Newsletter is attached.

Mike Gilmore

Technical Director, Fibreoptic Industry Association
Convener CLC TC215 WG1 and Secretary CLC TC215 WG2
Convener ISO/IEC JTC1 SC25 WG3 CITG and IPTG



The Fibreoptic Industry Association

www.fia-online.co.uk

NEWSLETTER

Testing
installed
optical fibre cabling

THE FIBREOPTIC INDUSTRY
ASSOCIATION

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TESTING MULTIMODE OPTICAL FIBRE CABLING

Background

During 2003, the FIA Technical Directorate identified some disturbing issues relating to the attenuation measurement of multimode optical fibre cabling. International standardisation bodies took up the case and a number of important standards developments have resulted which have serious impact on the market for test equipment, the definition of test cords and the methods of testing.

What were the problems?

Attenuation measurement of multimode optical fibre cabling with different light sources - either light-source/power-meter (LSPM) or OTDR equipment - was found to produce significant variations in results. This plus a failure to use test cord mandrel wraps (or the wrong mandrels) produced result swings in excess of 1,0 dB. Different test cords were found to produce further variations.

LSPM testing provided a further opportunity to undermine the validity of a result if the person doing the testing used the wrong referencing procedure (there were three to choose from in the US, international and European standards that were current in 2003). As a result, the chance of obtaining a valid result was quite small. This may not have mattered if only one test was ever carried out but, unfortunately, a "pass" under one test regime could be a "fail" under another - undermining customer-confidence and leading to requests for re-testing (for which no one wants to pay) - disastrous in the low-profit margin environment that FIA members inhabit.

Something had to be done!

In 2002, the FIA Technical Support Document TSD-2000-4-2-1, summarised the then-current test methods and provided alternative "referencing" methods of testing for the latest generation power meters that had fixed detector interfaces rather than the older types with interchangeable adaptors. In 2003, the FIA TSD-2000-4-2-1 was submitted to the ISO/IEC structured cabling committee as an input to the revision of their "testing cookbook" ISO/IEC TR 14763-3 - a Technical Report which primarily referred to the test methods of other IEC standards. It was realised those IEC standards were in danger of being undermined and it was decided to revise ISO/IEC 14763-3 as a "full standard". The ISO/IEC experts felt that the FIA document introduced too many complexities and that a dramatic simplification of test methods was required. At the same time the impact of the light source variations mentioned above began to be understood - but it was soon recognised that fixing this problem would require substantial standardisation work.

The first outcome of this work was ISO/IEC 14763-3:2006 but this standard was considered by many, including the FIA, as a stepping stone which, although addressing many of the problems, really acted as a catalyst for other standards committees to undertake further work on its behalf. The culmination of this work has been the publication of IEC 61280-4-1:2009 which has modified some of the content of ISO/IEC 14763-3. In September 2009, Amendment 1 of ISO/IEC 14763-3 was approved which aligns ISO/IEC 14763-3 with specific testing solutions in IEC 61280-4-1:2009. This leads to a situation in which two separate standards exist to cover the same topic - this Newsletter explains their content and how they should be used.

This Newsletter/White Paper begins by explaining the demands of IEC 61280-4-1:2009 and identifies where the requirements of ISO/IEC 14763-3 and its Amendment 1 make selections from it. These standards have significant impacts and Newsletter describes these impacts from three perspectives: installers, suppliers of test equipment and suppliers of test cords.

FIBREOPTIC INDUSTRY ASSOCIATION

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The standards and how to purchase them

IEC 61280-4-1:2009 will be automatically ratified as EN 61280-4-1 and published in the UK as BS EN 61280-4-1. However, this process could take a few months so in the interim we continue to refer to IEC 61280-4-1, available at www.iec.ch for 230SFR. ISO/IEC 14763-3 is already published in the UK as BS ISO/IEC 14763-3:2006 and can be purchased via www.fia-online.co.uk. However, Amendment 1:2009, which duplicates some of the content of IEC 61280-4-1:2009, will not hit the streets for some time. In due course ISO/IEC 14763-3 will be revised to fully reference the test methods produced on its behalf within IEC 61280-4-1:2009.

FIA recommendations and actions

The FIA:

- recommends that FIA members follow the requirements of IEC 61280-4-1:2009 whilst noting that ISO/IEC 14763-3 A1 specifies a sub-set of methods of IEC 61280-4-1 when cabling is being tested against the performance limits of the generic cabling standards such as ISO/IEC 11801, ISO/IEC 24702 and ISO/IEC 24764 (in preparation) and many of the BS EN 50173 series of standards;
- will now amend and dramatically simplify both TSD-2000-4-2-1 and its sister OTDR publication TSD-2000-4-2-2 in relation to multimode optical fibre cabling.

THE IMPORTANCE OF LAUNCH CONDITIONS

The principle reason for variation between results obtained using different light sources lies in the distribution of power among the modes within the optical fibre within the launch test cord at the point where it connects into the cabling under test.

While it was well documented that LASER and VCSEL sources tended to produce lower attenuation results than LEDs, most people failed to recognise that that, although many LED-based light sources provided well filled modal distributions, some equipment generated predominantly high order modes, producing higher results, whereas others mimicked low order modal distributions seen in VCSELS.

The use of mandrels was an attempt to control how much of the available power was concentrated in which mode groups. Both ISO/IEC 14763-3:2006 and IEC 61280-4-1:2009 have moved away from dowels and curly bits of plastic and taken a technical view of the requirement.

Because there had been no standard to define launch conditions, a great deal of work went into the development of an agreed metric - following which a further substantial debate took place with regard to the actual modal power distribution. ISO/IEC 14763-3:2006 adopted a metric called "modal power distribution" but this has been superseded in IEC 61280-4-1:2009 by "encircled flux" (EF) - also now applied in ISO/IEC 14763-3 Amendment 1. The required EF profile differs with core diameter and wavelength.

IEC 61280-4-1:2009 only defines the EF boundaries for 50/125µm and 62,5/125 optical fibre types (at 850 nm and 1300nm).

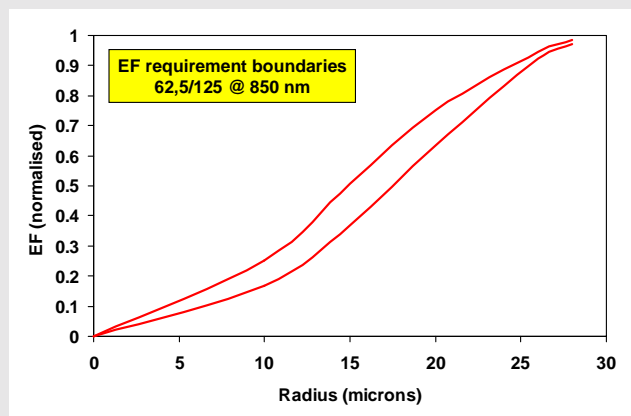
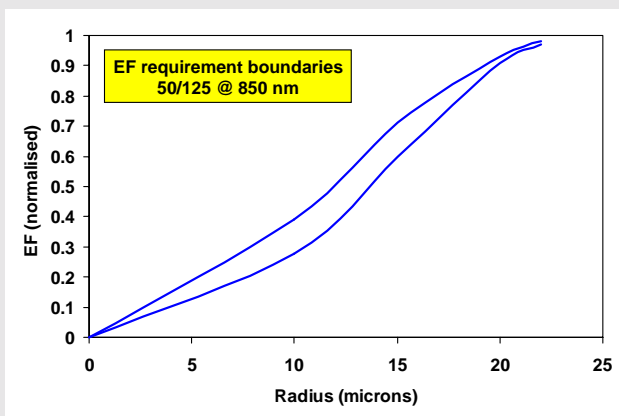
How to obtain the correct launch conditions?

Now that the standards have defined the correct launch conditions, how do installers know that they have achieved them? The good news is that two approaches exist.

The first is to purchase LSPM or OTDR equipment that is known to deliver the correct EF profiles, possibly using existing or modified mandrels and tightly-specified test cords. A small number of test equipment suppliers have confirmed the EF performance of their light sources. The FIA is developing a list of equipment that is claimed to be conformant together with the associated test cord hardware necessary to maintain compliance (go to www.fia.co.uk/etest-equipment.htm).

However, not all installers will want to purchase new test equipment - even when more manufacturers catch up and start taking the matter of EF seriously - so the second approach of a "mode controller cord" which may be used with a wide range of test equipment may be an attractive alternative.

Indeed, it was the work by the FIA in supporting the development of such cords that identified the original launch condition problems. The FIA sponsored the development of such cords and are now able to provide FIA members with discounted commercial terms for these cords (for a limited time only). More information is to be found at www.fia.co.uk/etest-mcc.htm.



How to obtain test cords conformant to IEC 61280-4-1?

The FIA is currently determining which of its members can provide custom-built test cords and adaptors that meet the requirements of IEC 61280-4-1:2009 for "reference grade terminations".

ISO/IEC 14763-3:2006 contains specific, and in effect, additional requirements for reference grade terminations for certain connector styles. These requirements will also be factored into the survey.

Once this process is complete the listing will be made available at www.fia.co.uk/etest-cords.htm.

THE IMPORTANCE OF TEST CORDS

The launch test cord is clearly very important for the test system because it acts as the generator of the correct EF profile at the point of connection to the cabling under test. Because the EF profile is very dependent on core diameter, the requirements for the launch cord core diameter are most stringent than for general equipment cords or patch cords.

However, in order to further reduce measurement error IEC 61280-4-1:2009 requires all launch and tail test cords to feature reference grade terminations at the points where they connect to the cabling under test. Where the test method requires the use of a dummy, or substitution cord, it shall also feature reference grade terminations.

A reference termination therefore combines core diameter control (better than $\pm 1 \mu\text{m}$) with the use of connector components (including test system adaptors, where used) of improved tolerance as compared to standard product. The full definition of a reference grade termination is a little vague but is a "connector/plug with tightened tolerances terminated on to an optical fibre with tightened tolerances such that the expected loss of a connection formed by mating two such assemblies is less than or equal to 0,1 dB".

Before the recent standardisation work, the best that could be said about any multimode cabling attenuation measurements was that "they were good guidance - indicative of installed performance". This was particularly true of short links, where the attenuation of long lengths of cable had little influence. In order to make use of the measured value, any subsequent measurement would have to use the same test equipment and test cords (in the same configuration as the original test). However, even then the result would be indicative since the launch conditions were not standardised. There was, in effect, no "right result".

The situation now is considerably improved and installers who fail to implement the correct approaches risk contractual disputes if problems are found to exist.

However, one aspect that has not changed for LSPM testing is the need for the correct referencing procedure before testing. NO EXCUSE EXISTS FOR SUCH MALPRACTICE.

HOW IMPORTANT ARE THE REQUIREMENTS OF IEC 61280-4-1 AND ISO/IEC 14763-3 A1?

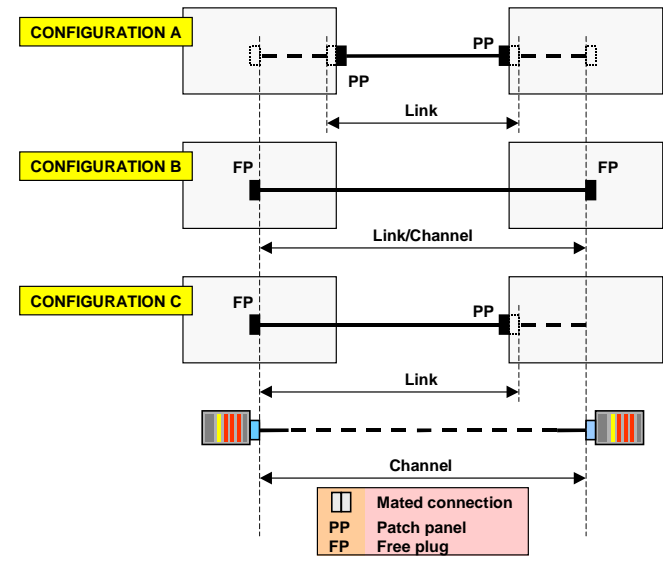
THE REFERENCE PROCEDURES IN LSPM TESTING

The three possible configurations of installed cabling are shown on the left. Since BS 7718: 1995 they have been known as Configurations A, B and C and this terminology is retained in IEC 61280-4-1.

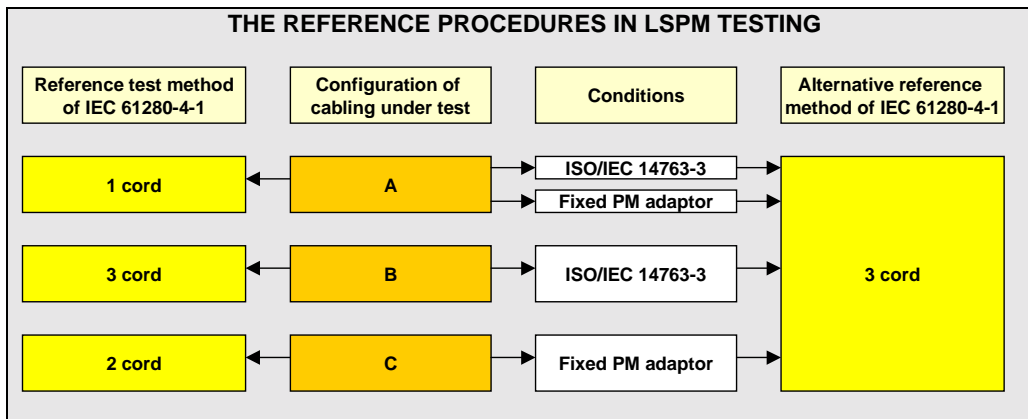
Configuration A is panel-to-panel, the most common arrangement for premises cabling. Configuration B is plug-to-plug and Configuration C is panel-to-plug (a comparatively rare configuration).

The reference procedure to be applied before testing depends upon the cabling Configuration. If the cabling is of Configuration B, then three cords are used to reference the test system. This is true for both IEC 61280-4-1 and ISO/IEC 14763-3.

To simplify matters ISO/IEC 14763-3 also chose to apply three cord referencing for Configuration A (ISO/IEC 14763-3 does not recognise Configuration C at all). This allows all types of power meters to be used - even those with fixed detector interfaces - and supports all connector types. However, this simplification does come at the cost of measurement accuracy. For this reason, the FIA recommends the use of IEC 61280-4-1 reference procedures, wherever possible.



The reference test methods of IEC 61280-4-1 invoke a one cord reference procedure for Configuration A and a two cord reference procedure for Configuration C. IEC 61280-4-1 recognises the alternative, three cord, reference procedure of ISO/IEC 14763 for Configuration A and also recognises that if the power meter has a fixed detector interfaces then a three cord approach may be necessary for Configurations A and C. This is clearly the most complex aspect of testing and is outlined in a flow-chart overleaf.



Failure to observe the correct referencing procedures prior to testing renders any results null and void - because the subsequent tests will include the wrong number of connections (too few or too many).

NOTE: The common practice of using a two cord reference procedure for cabling of Configuration A produces lower results i.e. it “under-measures” the attenuation of the cabling. If this is done without reducing the acceptance limits it misrepresents installed performance.

In the case of LSPM testing, the three aspects of launch conditions, test cords and referencing methods are equally important and deviation in any one area undermines confidence in the complete testing process.

OTDR testing in accordance with IEC 61280-4-1 and ISO/IEC 14763-3

The topic of OTDR testing of installed multimode optical fibre cabling is also covered in detail in both standards. The aspects of launch conditions and the criteria for test cords described above for LSPM testing also apply to OTDR testing. Indeed, by meeting the encircled flux boundaries at the point of connection to the cabling under test, the overall attenuation measurement of a link using an OTDR can be directly compared to that obtained by LSPM test equipment.

Both standards provide graphical illustrations of what measurements can be taken from an OTDR characterisation and how to make them. The FIA will be making significant amendments to its Technical Support Document TSD-2000-4-2-2 in order to directly refer to both IEC 61280-4-1 (for multimode cabling) and ISO/IEC 14763-3 in general.

TESTING SINGLEMODE OPTICAL FIBRE CABLING

ISO/IEC 14763-3 covers the testing of installed singlemode optical fibre cabling using both LSPM and OTDR equipment. A long-standing standard IEC 61280-4-2: 1999 contains similar but less detailed information. Fortunately, in the case of singlemode transmission, the distribution of power among the modes is irrelevant but the issue of reference grade terminations and the need to apply the correct referencing procedure before testing still apply.

IEC 61280-4-2 is now to be revised as has been done for IEC 61280-4-1 but this process could take up to two years. In the interim, ISO/IEC 14763-3 and its Amendment 1 provide a source of requirements and recommendations. The vacuum created by the delay to the revised version of IEC 61280-4-2 will be filled by the amendment of the FIA TSD-2000-4-2-1 and TSD-2000-4-2-2 documents in relation to singlemode technology.

Bibliography:

- BS EN 50173-1; *Information technology - Generic cabling systems - General requirements*
- BS EN 50173-2; *Information technology - Generic cabling systems - Office premises*
- BS EN 50173-3; *Information technology - Generic cabling systems - Industrial premises*
- BS EN 50173-5; *Information technology - Generic cabling systems - Data centres*
- BS ISO/IEC 14763-3:2006; *Information technology. Implementation and operation of customer premises cabling. Testing of optical fibre cabling*
- FIA TSD-2000-4-2-1; *Optical fibre cabling - Testing - Installed cabling using light source and power meter (LSPM) equipment*
- FIA TSD-2000-4-2-2; *Optical fibre cabling - Testing - Installed cabling using optical time domain reflectometer (OTDR) equipment*
- IEC 61280-4-1:2009; *Fibre-optic communication subsystem test procedures - Part 4-1: Installed cable plant - Multimode attenuation measurement*
- IEC 61280-4-2: 1999; *Fibre optic communication subsystem basic test procedures - Part 4-2: Fibre optic cable plant. Single-mode fibre optic cable plant attenuation*
- ISO/IEC 11801; *Information technology - Generic cabling for customer premises*
- ISO/IEC 14763-3:2006; *Information technology. Implementation and operation of customer premises cabling. Testing of optical fibre cabling*
- ISO/IEC 24702; *Information technology - Generic cabling - Industrial premises*
- ISO/IEC 24764 (in preparation); *Information technology - Generic cabling - Data centres*

Annex B: Articles for Networking+



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STANDARDISATION HAS LEFT THE BUILDING

by

Mike Gilmore, Technical Director of the FIA
for Networking+ (July 2009)

June 2009 saw the publication of 2nd editions of the BS EN 50174-1 and BS EN 50174-2 standards which cover the specification and quality assurance of all telecommunication cabling installations and the installation planning and practices inside buildings respectively. These standards are part of a package intended for use by customers (or their consultants) and installers of all types of telecommunications cabling infrastructures but the 2009 versions of BS EN 50174-1 and BS EN 50174-2 are already having an impact outside their primary application base.

For example the Fibre optic Industry Association is rebuilding the On-Line Assistance package for its Approved Installer Scheme and the UK primary standard, BS 6701, is also undergoing revision to simplify its relationship with the new BS EN 50174 standards.

It is said that "as one door closes - another opens" and the European committee responsible for the EN 50174 series has now begun work on the revision of EN 50174-3 which covers installation planning and practices outside buildings. The most obvious changes will be the restructure of the existing document (EN 50174-3:2003) to match the format of the other two standards. These obvious changes will not hide the more fundamental technical updates that will define new, additional, requirements and recommendations for general installations between buildings - irrelevant of where those buildings are or what they are (data centres, operator sites, buildings on a university or commercial campus). All pathways between buildings are included (underground, aerial etc) and the existing contents covering segregation between IT cabling and a variety of external services are to be both maintained and extended.

FIA members can monitor the development of the new work via the Standards Forum area of the FIA web-site. Published standards can be purchased direct from the FIA web-site at www.fia-online.co.uk.

"SWEAT THE INFRASTRUCTURE ASSET" – if you can remember how!

by

Mike Gilmore, Technical Director of the FIA
for Networking+ (September 2009)

In recession, most conscientious organisations look at ways of cutting costs – both capital and operational. Areas hit by spending curbs range across all divisions and functions. Information technology and telecommunications equipment expenditure was an obvious target and the gravy train of ever-increasing network data rates came off the rails. Most recently, the focus has turned to cabling infrastructures. The concept of "sweating the asset" has been applied with vigour - firstly, by reviewing the true needs of the organisation over the next few years and then by auditing the performance of the existing infrastructures against the transmission demands of the re-validated objectives.

This process has produced interesting results - if not definite trends. The results split generally along technology boundaries. Somewhat surprisingly, optical fibre cabling faces more radical overhaul than its copper counterparts - this is in part due to the fact that the transmission "leaps" have been steeper in optical technology. By comparison, copper cabling installed more than ten years ago has been reassessed against the needs of networks such as Gigabit Ethernet and found to be perfectly "fit for purpose".

Unfortunately many IT and telecommunications specialists have been more influenced by suppliers performance promises of higher cable Categories and have actually forgotten how to validate performance against the original networking requirements. Trade associations such the FIA and TIA-B can provide the expertise necessary and are a useful source of impartial advice.

It is clear that optical fibre backbones are much cheaper to upgrade than horizontal copper infrastructures and provide much greater benefit. But it may be that capital expenditure can be restricted or removed without any appreciable risk to medium term networking plans.

For further advice, e-mail jane@fiasec.demon.co.uk or, alternatively, you can contact the FIA Secretariat on 01763 273039.

FIA TECHNICAL SUPPORT DOCUMENTS - RESPONDING TO USERS NEEDS!

by
Mike Gilmore, Technical Director of the FIA
for Networking+ (October 2009)

The recent publication of IEC 61280-4-1 and the approval of ISO/IEC 14763-3 A1 may have gone unnoticed by the majority of the IT community but they represent the completion of a cycle of technical development and standardisation that was initiated by the FIA as long ago as 2002. The two standards introduce strict new requirements for testing of multimode optical fibre cabling which place demands on equipment suppliers, test cord manufacturers and installers - ignorance of which may render test results invalid.

However, the purpose of this article is not to explain the minutiae of standards but to illustrate of the work of the Fibreoptic Industry Association in addressing the needs of the marketplace - members and their clients alike.

The FIA has an important responsibility to react to changes in fibre optic technology. Our reaction may be in response to specific technical challenges identified by the FIA Technical Directorate or to the impacts of such changes on, as highlighted by, the user and/or supplier community.

The FIA encourages input from the user community (members or non-members) which could lead to the production of either a Technical Support Document or a White Paper. A TSD generally addresses issues of major significance which would typically be developed to a quality capable of submission to international, European or British standards bodies as appropriate. Once standardisation has taken place (which can take more than five years, as in the example above) the TSD is amended or withdrawn.

The FIA offers users of cabling infrastructure, such as network managers, the opportunity to raise technical or commercial issues and to have them responded to swiftly and within their direct involvement. To get noticed and get results, e-mail jane@fiasec.demon.co.uk or contact the FIA Secretariat on 01763 273039.