



BUILDING GLOBAL COMMUNICATIONS

## Approved by General Counsel

FO-4 Meeting Report

Date: 01/25-27/05

Location: Mesa, AZ

Approved: 02/23/05

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**Telecommunications Industries Association  
Standards and Technology Department**

**Engineering Committee FO-4, Committee on Fiber Optics**

**Meeting Report**

FO-4 Chair: Steve Swanson  
Secretary and EDC: Bob Jensen

January 25-27, 2005  
Hilton Phoenix East/Mesa  
Mesa, AZ

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**1 ADMINISTRATIVE**

**1.1 Call, to order**

FO-4 Chair, Steve Swanson, called the opening plenary meeting to order on January 25, 2005 at 8:00 AM. The Chair noted that the opening plenary session is intended to update members of committee meeting expectations, and to inform them of administrative essentials. He also noted that no quorum is needed for the opening plenary and that attendance at the closing plenary constitutes the FO-4 membership and quorum.

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FO-4 Chair, Steve Swanson, called the closing plenary meeting to order at 8:00 AM January 27, 2004. The closing plenary session is intended to summarize Subcommittee meeting activities and resolve any issues arising throughout the week of meetings. The Chair again reminded those attending that attendance at the closing plenary constitutes the FO-4 membership and quorum. He also noted that continuity of membership is important in order to establish quorum and take part of the FO-4 leadership decisions.

### 1.2 Attendance (quorum, introductions and roster)

Attendance at the closing plenary constitutes the FO-4 membership and quorum. A total of 31 attendees were present at the closing plenary including 14 of 21 members, thereby establishing quorum for the Engineering Committee meeting. The attendees introduced themselves and an attendance roster was distributed for participants to sign. It was noted that there were several attendees from around the world. A new spreadsheet to assist in calling quorum is being worked upon by Bob Jensen and Steve Swanson.

				Plenary	
				Opening	Closing
<b>Chair:</b>					
Steven Swanson	Corning, Incorporated	<a href="mailto:swansonse@corning.com">swansonse@corning.com</a>	607-974-4252	✓	✓

#### Voting members companies present:

Tom Hanson	Corning Incorporated.	<a href="mailto:hansonta@corning.com">hansonta@corning.com</a>	607-974-4530		✓
Alan Whitebook	Diamond USA, Inc.	<a href="mailto:awhitebook@mindspring.com">awhitebook@mindspring.com</a>	661-702-9740	✓	✓
Pin Su	DiCon Fiberoptics Inc.	<a href="mailto:psu_std@yahoo.com">psu_std@yahoo.com</a>	510-620-5315		✓
Dave Leight	DSCC-VAT	<a href="mailto:david.leight@dla.mil">david.leight@dla.mil</a>	614-692-0657	✓	✓
Andre Girard	EXFO	<a href="mailto:andre.girard@exfo.com">andre.girard@exfo.com</a>	418-683-0211	✓	✓
Bob Jensen	Fluke Networks	<a href="mailto:robert.jensen@flukenetworks.com">robert.jensen@flukenetworks.com</a>	512-514-7760		✓
Jack Rosko	Nexans dba Berk-Tek,	<a href="mailto:jack.rosko@nexans.com">jack.rosko@nexans.com</a>	919-552-4451	✓	✓
Iwano Shin'ichi	NTT Advanced Tech.	<a href="mailto:s.iwano@neo.ntt-at.co.jp">s.iwano@neo.ntt-at.co.jp</a>	650-617-0320	✓	
Mike Kinard	OFS	<a href="mailto:mkinard@ofsoptics.com">mkinard@ofsoptics.com</a>	770-838-5307	✓	✓
Robert Fitzpatrick	Panduit Corp.	<a href="mailto:rfti@panduit.com">rfti@panduit.com</a>	708-460-1800	✓	✓
Scott Chastain	Sumitomo Electric	<a href="mailto:schastain@sumitomoelectric.com">schastain@sumitomoelectric.com</a>	919-541-8175	✓	✓
Osman Gebizlioglu	Telcordia Technologies	<a href="mailto:ogebizli@telcordia.com">ogebizli@telcordia.com</a>	732-699-3378	✓	✓
Dave Fisher	Tyco Electronics	<a href="mailto:David.fisher@tycoelectronics.com">David.fisher@tycoelectronics.com</a>	717-986-5501	✓	✓
Matt Brown	US Conec	<a href="mailto:mattbrown@usconec.com">mattbrown@usconec.com</a>	828-267-6327		✓
Norm Lampert	Yazaki NA Inc.	<a href="mailto:lampert@optoc.com">lampert@optoc.com</a>	717-930-1332	✓	✓

**Voting members companies absent:**

Dave Roland	Alcatel USA	<a href="mailto:dave.roland@cable.alcatel.com">dave.roland@cable.alcatel.com</a>	828-459-8775		
Michael Itano	Leviton Voice & Data	<a href="mailto:mitano@levitonvoicedata.com">mitano@levitonvoicedata.com</a>	425-415-7239		
Adam Murano	Ortronics	<a href="mailto:amurano@ortronics.com">amurano@ortronics.com</a>	860-450-2804		
Dave Kritler	Photon Kinetics Inc.	<a href="mailto:dave.kritelr@pkinetics.com">dave.kritelr@pkinetics.com</a>	503-526-4655		
Paul Kolesar	SYSTIMAX Solutions	<a href="mailto:pkolesar@systimax.com">pkolesar@systimax.com</a>	972-792-3155		
Gair Brown	US Navy	<a href="mailto:browngd@nswc.navy.mil">browngd@nswc.navy.mil</a>	540-653-1579		

**Other participants**

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Bill Troemel	Aerotech WTL		818-991-7562	✓	✓
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Jose Valenzuela	Condumex	josev@condumex.com.mx	524422389017	✓	✓
Ken Chauvin	Corning, Inc.	<a href="mailto:ken.chauvin@corning.com">ken.chauvin@corning.com</a>	828-901-5569		✓
James Matthews III	Corning, Inc.	<a href="mailto:matthewsie@corning.com">matthewsie@corning.com</a>	607-974-7608	✓	
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Dan Morris	KITCO Fiber Optics	<a href="mailto:dmorris@kitcofo.com">dmorris@kitcofo.com</a>	757-518-8100	✓	✓
Dennis Horwitz	Miconor Inc.	<a href="mailto:dennis.horwitz@micronorinc.com">dennis.horwitz@micronorinc.com</a>	805-499-0114	✓	
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Tom Ball	Tom Ball Consulting	teballzz@aol.com	717-939-8537		✓

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Tim Drapela	US Dept Commerce (NIST)	drapela@boulder.nist.gov	303-497-5858	✓	✓
Bill Irwin	Yazaki NA Inc.	<a href="mailto:birwin@y-connect.com">birwin@y-connect.com</a>	717-930-1332	✓	

**FO-4 company attendance history at Closing Plenary**

Company	Last 3 meetings	January 2005	June 2004	January 2004
Agilent Technologies	0			
Alcatel	2		1	1
Corning, Inc.	3	1	1	1
Diamond USA	3	1	1	1
DiCon Fiberoptics Inc.	3	1	1	1
Draka Fibre Tech.	1		1	
DSCC-VAT	3	1	1	1
EXFO	3	1	1	1
Experior Photonics	2	1	1	
FiberSource	1		1	
Fluke Networks	2	1		1
KITCO Fiber Optics	2	1	1	
Leviton	2		1	1
Nexans	3	1	1	1
NIST	2	1		1
NTT	3	1	1	1
OFS	3	1	1	1
Ortronics	2		1	1
Panduit	3	1	1	1
Photon Kinetics	0			
Sumitomo	3	1	1	1
SYSTIMAX Solutions	2		1	1
Telcordia Technologies	3	1	1	1
Tempo	1			1
Tyco Electronics	3	1	1	1
US CONEC	3	1	1	1
US Navy	2		1	1
Yazaki NA, Inc	1	1		

Note: Member companies absent from three consecutive meetings will be removed from the voting member list and placed on the non-voting member list. The attendance roster is the sole basis for deriving meeting attendance, so it is important that you sign-in at the meeting. The Chair will notify a company of their failure to meet minimum participation requirements and request their attendance at future meetings; enforcement of the membership continuation rules

is necessary in order to maintain our ability to raise quorum at meetings.

The following new members were added to the FO-4 quorum list:

- Experior Photonics
- KITCO
- FiberSource
- Tempo Research Corp

The following members were dropped from the FO-4 quorum list:

- Agilent

### **1.3 Agenda review and approval**

Steve Swanson reviewed the Opening Plenary agenda topics which were approved by the attendees.

The Closing Plenary agenda was reviewed and approved.

### **1.4 Intellectual Property Rights statement**

The chair brought to the attention of the membership the TIA policy regarding patents, the use of which may be essential to standards being considered. The full statement is contained in the third edition of the TIA Engineering Manual.

### **1.5 Chair's report; general items; recognition**

At the opening plenary, Steve Swanson noted that the opening plenary session is intended to update members of committee meeting expectations, and to inform them of administrative essentials. The liaison reports received will be posted to the ftp site. Steve reviewed the structure and leadership of the committee, having five Subcommittees. He reminded the FO-4 leadership to cover the IPR statement at their meetings and remind participants of the need for the boilerplate cover sheet on all contributions. He also reviewed the electronic tools that are available and encouraged all members to utilize those tools to facilitate the progress of work between meetings. Steve also noted that the closing plenary session is the assembly of the FO-4 formulating group and is intended to summarize Subcommittee meeting activities and resolve issues arising throughout the week of meetings. Attendance at the closing plenary constitutes the FO-4 membership and quorum.

At the closing plenary, Steve Swanson noted that there was one member in peril of losing their FO-4 voting rights and that they would be removed from the quorum list. Steve will call these members and follow-up with a letter to them indicating their status.

Steve Swanson reported on the key outcomes of the Subcommittee Chairs meeting held early in the week for standards planning and administration purposes.

Forward and backward pointers of standards for national adoptions were discussed and it was decided that the author of a document is to include the pointer text in the publication authorization form (in notes). Although forward pointer works fine as the document will point to superseded documents, for backward pointers this still will not work as we don't always call out to use the latest edition of a standard. Additionally, in some instances the user may want the older version of the standard.

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Steve explained that in our future standards development that we are to have separate locations in the document for informative and normative references. TIA will be developing a list of incompatible references that we should not be using. When writing a TSB, it cannot have any normative requirements; rather it is to be completely informative to the reader.

The Engineering Manual is currently being revised. When providing contributions to FO-4 or it's Subcommittees, the appropriate contribution cover sheet is to be used. Additionally, if a patent is to be disclosed, the patent holder statements can be found on the TIA WEB site along with the appropriate forms for disclosure. Steve also reminded the attendees that TIA has implemented digital rights management on their standards that restrict their documents being contained on two computers and printing of two copies.

### 1.6 TIA staff report

Stephanie noted that many of the items in her staff report were previously covered in the Chair's report. She further noted that this will be the last year of SUPERCOMM®. In 2006, TIA will hold a new show in Chicago called GLOBALCOMM.

Stephanie also noted several changes in the TIA Staff including the departure of Susan Hoyler who is leaving TIA to join Qualcomm. She also noted that TIA's meeting planner, Jenni Franz is also leaving TIA to join Carnegie-Mellon. Finally, she noted the addition of Suzanne White as our new Standards Secretariat.

### 1.7 Numbering of contributions

Steve noted that all contributions to FO-4 were available on the FTP site. Additionally, a USB drive was made available at the meeting with all contributions for the attendees.

Document #	Contributor	Company	Title
FO-4/05-01-001	Steve Swanson	Corning, Inc.	Opening Plenary Agenda
FO-4/05-01-002	Steve Swanson	Corning, Inc.	Closing Plenary Agenda
FO-4/05-01-003	Steve Swanson	Corning, Inc.	FO4 Opening Chair Report
FO-4/05-01-004	Steve Swanson	Corning, Inc.	FO4 Meeting ScheduleREV2
FO-4/05-01-005	Steve Swanson	Corning, Inc.	Chairs meeting
FO-4/05-01-006	Steve Swanson	Corning, Inc.	FO4 Document list
FO-4/05-01-007	Jim Matthews / Gair Brown	FO-4.1 Chairs	FO41 Closing Mtg Rpt
FO-4/05-01-008	Mike Kinard	OFS	ICEA Standards Issues (to FO-4.2)
FO-4/05-01-009	Tom Hanson	Corning	FO-4.2 Agenda
FO-4/05-01-010	Tom Ball		FO-4.3 Agenda
FO-4/05-01-011	O.S. Gebizlioglu / B.G. LeFevre	FO-4.3.3 Chairs	FO-4.3.3 Agenda
FO-4/05-01-012	O.S. Gebizlioglu / B.G. LeFevre	FO-4.3.3 Chairs	FO-4.3.3 June 04 Meeting Report
FO-4/05-01-013	Pin Su	FO-4.4 Chair	FO-4.4 Agenda
FO-4/05-01-014	Dennis Horwitz	FO-4.5 Chair	FO-4.5 Agenda
FO-4/05-01-015	Dennis Horwitz	FO-4.5 Chair	FO-4.5 June 04 Meeting Report
FO-4/05-01-016	Tim Drapela	FO-4.5 Chair	FO-4.5.1 Agenda

FO-4/05-01-017	Tom Hanson	Corning	ITU SG15 November 2004 Highlights
FO-4/05-01-018	Tim Drapela	NIST	Raman Gain Efficiency Round Robin results
FO-4/05-01-019			Draft FOTP-238 Endface visual inspection
FO-4/05-01-020			Draft TSB161 (informative version of IEC 62005)
FO-4/05-01-021			iPhotonics - effects of contamination on performance
FO-4/05-01-022			Draft seal under load FOTP
FO-4/05-01-023			Draft sheave wheel test FOTP
FO-4/05-01-024	Steve Swanson	Corning	FOTP 219 Modifications
FO-4/05-01-025			Draft Splice Loss Measurement FOTP
FO-4/05-01-026	Paul Kolesar	Avaya	e-mail concerning MPD
FO-4/05-01-026a	Paul Kolesar	Avaya	MPD Spec in 25N1003
FO-4/05-01-026b	Paul Kolesar	Avaya	MPD Tentative Template (3IXT092)
FO-4/05-01-027	Tom Hanson	Corning	Adopted IEC Documents
FO-4/05-01-028			MU new format
FO-4/05-01-029			FO-4.3 Summary
FO-4/05-01-030			FO-4.5 Summary
FO-4/05-01-031			FO-4 Closing
FO-4/05-01-032			FO-4.2 Summary
FO-4/05-01-033			FOTP ideas for correspondence group

### 1.8 Meeting report review and approval

The June 2004 meeting report was reviewed at the closing plenary and unanimously approved.

## 2 OLD BUSINESS

### 2.1 Action item review from last meeting

Action item review	Action:	Resp:	Status:
2002-06-009	Place document database on the WEB for all projects so that it can be updated and maintained.	TIA Staff	On-going.
2003-06-012	Develop national adaptation procedure	TIA Staff	On-going
2004-06-001	FO-4.1 also asked if a process can be developed retiring OFSTP numbers, possibly by using a dual number that includes the old OFSTP number and the new FOTP number for some period of time.	TIA Staff	On-going
2004-06-002	Move TIA-455 umbrella document from the FO-4.2 list to the FO-4.5 list. If the revision is to be completed, it should be done soon to avoid losing the ANSI designation for the umbrella document for all FOTPs.	S. Swanson	Complete



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<b>Action item review</b>	<b>Action:</b>	<b>Resp:</b>	<b>Status:</b>
2004-06-003	Move 455-71A, Procedure to Measure Temperature-Shock Effects on Fiber Optic Components from the FO-4.2 list to the FO-4.3 list.	S. Swanson	Complete
2004-06-004	Investigate options to simplify the reaffirmation process, particularly for large "blocks" of documents	TIA Staff	Complete

### **3 PLENARY REPORTS**

#### **3.1 Opening plenary reports**

Steve noted that any reports received will be posted to the ftp site for review.

#### **3.2 Closing plenary reports**

##### **3.2.3 FO-4.1, Optical Fiber Systems, Jim Matthews, Gair Brown**

Past meetings of FO-4.1 were focused on ITU contributions. ITU references have changed as the new link is SG15 Working Party 2 Questions 5,6,7, and 10. The "Black Link" concept was discussed and agreement made to circulate and correspond on the draft and its value. Discussion was also held on possibly advancing the document as a TIA standard.

Broad discussion was held across FO-4 on potential new or improved standards for FTTP. A brainstorming session was held documenting initial thoughts and proposing a correspondence activity within FO-4.

Two teleconferences for FO-4.1 are anticipated to be held prior to the June FO-4 meeting. Topics may include: vetting/review of contributions to ITU-T WP2/15, Black Link and Q 5, 6, 7, 8, and 10. Announcements will be sent on FO 4.1 Exploder and copied to FO 4.2 Exploder when teleconference will be held.

The January meeting did not meet quorum requirements, therefore a request is made for FO-4 to take formal action on seven (7) documents.

- TIA 526 and TIA 626 both reaffirmed in 2003 – no action required
- TIA 526-2 – proposal to rescind
- TIA 526-3: proposal to rescind and adopt IEC 61280-2-1 as 526-3A
- TIA 526-4A: proposal to rescind and adopt IEC 61280-2-2 Ed. 2.0 as 526-4B
- TIA 526-16: proposal to rescind and adopt IEC 61280-2-5 as 526-16A
- SP-3-0142 has an outstanding Negative. Voter is searching for information. FO-4.1 requests approval to publish, contingent on successful resolution of the negative comment. FO-4 approved each of these recommendations without objection.

##### **3.2.4 FO-4.2, Optical Fibers and Cables, Tom Hanson**

The meeting was conducted by the chairman, Thomas Hanson (Corning) on 26-Jan-05 with 12 individuals participating. Five of nine members were represented, so a quorum was declared.

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Working Group 4.2.3, Single-mode Measurements and International Harmonization - Andre Girard (Exfo).

The developments in the international bodies were reviewed. One key development was the agreement on PMD measurement methods in both IEC and ITU. Another was an agreement on the approach to the PMD requirements for un-cabled fiber and the deployment for measurement of un-cabled fiber. There were multiple presentations made to these groups on the subject of the definition and measurement of SBS threshold, but no final consensus.

FO-4.2.3 reviewed the final results on the Raman gain efficiency which was compiled by Tim Drapela (NIST). As a result, it was proposed (and later agreed at FO-4.2) to revise ITM 22 to correct some problems that were identified as a result of this activity.

The adaptation of the IEC fiber specifications for graded index multimode and single-mode fibers, 60793-2-10 and 60793-2-50, will be one item discussed at the next meeting.

Working Group FO-4.2.5, blown cable and fiber units - Ken Chauvin (Corning Cable Systems).

The CDV ballot on the IEC sectional specification, 60794-5, was discussed. After more study, there may be some more comments from the US. The draft family specifications were distributed to the IEC ad hoc group and comments returned. These comments were reviewed by FO-4.2.5. Some of the members of FO-4.2.5 will participate in a teleconference of the ad hoc group. After this, new drafts will be prepared and distributed to both groups in mid-March.

General FO-4.2 results

The IEC test procedure document, 60794-1-2, will be restructured and revised. FO-4.2 decided to create a new working group to harmonize this revision with TIA cable test procedures.

FO-4.2 has designated ICEA 717 as the drop cable specification suitable for FTTP. Some FO-4.2 members will provide input to the new correspondence group on road-mapping the additional needs.

The IEC test method for PMD, 60793-1-48, has entered a revision ballot process. When this is complete, FO-4.2 will probably adopt it.

The measurement method for Raman gain efficiency, ITM-22, will be revised.

ICEA documents, 717, 596, 696, have been approved for publication but are not yet available because the TIA adoption procedures have not been completed. The details of this should be completed in the next few weeks.

A new ICEA document on the requirements for a general purpose outdoor cable, 640, will enter a potentially last ballot. When completed, it will be presented to TIA for adoption. To obtain the best comments at an earlier stage, this document will be distributed to the FO-4.2 membership for comments at the same time as the ICEA ballot.

Document maintenance

One reaffirmation ballot, SP-3-2418, to reaffirm 455-69A, Test Procedure for Evaluating the Effect of Minimum and Maximum Exposure Temperatures on the Optical Performance of Optical

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Fibers, received a negative vote because the document is outdated and not in use. FO-4.2 agreed to issue a withdrawal ballot on this document.

Comments were resolved on the following reaffirmation ballots, which, following the paper work, should be considered as complete:

SP-3-3401 Reaffirm 455-162A      Optical Fiber Cable Temperature-Humidity Cycling

SP-3-1895-RV1-RF2 "Proposed Reaffirmation of the following standards: SP-3-1895-RV1-RF2 "Low or High Temperature Bend Test for Fiber Optic Cable" (TIA-455-37-A); SP-3-2257-RF2 "Hydrogen Effects on Optical Fiber Cable" (TIA-455-183); SP-3-3036-RF2 "Preparation and Examination of Optical Fiber Endface for Testing Purposes" (TIA-455-57-B); SP-3-3455-B-RF1 "Measurement of Optical Fiber Ribbon Dimensions " (TIA-455-123); SP-3-3540-RF2 "Measurement of Optical Fiber Ribbon Residual Twist" (TIA-455-131); SP-3-3541-B-RF1 "Fiber Optic Cable Water Wicking Test" (TIA-455-39-B); SP-3-3578-RF1 "Absolute Optical Power Test for Optical Fibers and Cables: (TIA-455-95-A); SP-3-3781-RF1 "H-Parameter Test Method for Polarization-Maintaining Optical Fiber" (TIA-455-192); SP-3-3782-RF1 "Polarization Crosstalk Method for Polarization-Maintaining Optical Fiber and Components" (TIA-455-193); SP-3-4123-RF1 "Measuring Dynamic Strength and Fatigue Parameters of Optical Fibers by Tension" (TIA-455-28-C); SP-3-4188-RF1 "Measurement of Optical Fiber Cladding Diameter Using Laser-Based Instruments" (TIA-455-48-B)"

SP-3-3847-RF1 "Proposed Reaffirmation of the following standards: SP-3-3847-RF1 "Twist Test for Optical Fiber Ribbons" (TIA-455-141); SP-3-4221-RF1 "Test Method for Evaluating Fungus Resistance of Optical Fiber and Cable" (TIA-455-56-B); SP-3-4420-RF2 "Proof Testing Optical Fibers by Tension" (TIA-455-31-C); SP-3-4444-RF2 "Fiber Optic Cable Jacket Shrinkage" (TIA-455-86); SP-3-4445-RF1 "Fiber Optic Cable Twist Test" (TIA-455-85-A); SP-3-4447-RF1 "Gas Leakage Test for Gas-Blocked Fiber Optic Cables" (TIA-455-100-A); SP-3-4448-RF2 "Fiber Optic Cable Knot Test" (TIA-455-87-B); SP-3-4590-RF1 "Detail Specification for Class IVa Dispersion-Unshifted Single-Mode Optical Fibers with Low Water Peak" (TIA-492CAAB); SP-3-4764-RF2 "Fiber Optic Cable Cyclic Flexing Test" (TIA-455-104-A)"

Summary of items needing input or action by FO-4

Allocate four hours for the meeting of 4.2.6.

Request the FO-4.3 work to create a temperature cycling document so that at the next revision of FOTP-3, it can be converted to a cable-only test procedure.

Request an update on how the forward/backward pointer system is working, especially for documents that were superseded by restructuring or adoptions. Additionally, it seems that the most efficient way of updating some older documents that exist only in scanned in pdf files for changes in the reference document IDs might be to create amendments with these changes. If the user wishes to obtain a given document, how will they be notified that an amendment to it exists?

**3.2.5 FO-4.3, Interconnecting Devices and Passive Components, Andre Girard**

Recommendations on existing documents:

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Advanced for SP Ballot

- FOTP-171, make bidirectional testing optional
- FOCIS-16, include duplex option

Advanced for TIA Publication Process

- TIA-1048, IEC 62005-7: Reliability of Fibre Optic Interconnecting Devices and Passive Components - Part 7: Life Stress Modeling

Advanced for TIA/ANSI Publication Process

- None

FO-4.8 documents transferred to FO-4.3.1

- No progress. Still open item; but just a matter of confirming status of documents. Item will be closed with help of FO-4.3 Chair before next meeting.

New Projects Approved for PN Balloting

- New Work Item proposal – FOTP for high resolution loss testing of low-loss fiber splices
- TSB-120 not withdrawn; Revise to remove “shall” and “must” and go to PN ballot afterwards
- TSB-130: guidelines for connectorizing PM fiber (review & reaffirm by 2006); Revise to remove “shall” and “must” and go to PN ballot afterwards

Projects Cancelled

- None

Standards Approved for Rescission Ballot

- None

ANSI Standards Reaffirmed

- None

TIA Standards Reaffirmed

- None

Other Businesses

- Chair of FO-4.3.2 Interconnecting Devices is stepping down. FO-4.3 will find a replacement before the next meeting.
  - FO-4.3 WGs have started to look into FTTH PON products and possible new related document development.
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### 3.2.6 FO-4.4, Fiber Optic Amplified Systems, Active Components, and Reliability, Pin Su

Pin Su reported that there was inadequate member attendance this week resulting in quorum not being achieved. He suggested that FO-4 merge FO-4.4 into FO-4.1. It was noted that this may be the best alternative and possibly make the activities of FO-4.4 a Working Group of FO-4.1.

FO-4 asked the Chairs of FO-4.1 and FO-4.4 to study how to combine the work of the two Subcommittees and make a recommendation prior to the next meeting.

The status of documents within FO-4.4 includes:

- FOTP-127: being revised and will be finalized soon for release.
- FOTP-128: to be reviewed for re-affirmation.
- FOTP-129: to be rescinded pending TIA to get the inquiry/sale information on this.
- FOTP-15, 17, & 18: all jitter related, to be reviewed in the next meeting.
- Several IEC documents on optical amplifier were considered to be adopted/adapted. Some are still in draft stage and some are being merged, as listed below.
- Draft 455-142: to be discussed in the next meeting.
- Draft 526-28: IEC 61290-1-2 in draft stage.
- Draft 526-29: IEC 61290-1-3 in draft stage.
- Draft 526-30: withdraw – IEC 61290-2-1 to be combined with IEC 61290-1-1
- Draft 526-31: to adopt 61290-2-2.
- Draft 526-32: withdraw – IEC 61290-2-3 to be combined with IEC 61290-1-3
- Draft 526-33: to adopt 61290-6-1
- Draft 526-34: to adopt 61290-1-1
- Draft 526-35: to adopt 61290-7-1
- Draft 526-36: 61291-1 in draft stage.

### 3.2.7 FO-4.5, Fiber Optic Metrology, Lorenz Cartellieri

The FO-4.5 Engineering Subcommittee on Fiber Optic Metrology addresses fiber optic test, measurement and inspection instrumentation functionality and related calibration issues in support of other fiber optic standards groups, test procedures and test methods. This includes, but is not limited to:

- Determine instrument parameters or attributes that require specification.
- Propose and approve standards and specifications.
- Propose, review and approve test methods and procedures relevant to calibration, usage and maintenance.
- Coordinate with other industry standard bodies, and form joint task groups to resolve test & measurement issues of mutual interest.

#### FINISHED PROJECTS

SP-3-1384-RV2	TIA-440-B; Fiber Optic Terminology	Published February-2004 Ballot completed, comments resolved, and authorized for publication. Editor: David Leight, DSCC
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“NEAR” FINISHED PROJECTS

PN-3-0064A	TSB-141; PDL Meters: Measurement and Application Issues	Editorial comments being integrated into document and authorized for publication. . Editor: Dennis Horwitz (for former editor Rex Craig)
PN-3-0066	TSB-143; Fiber Optic Power Meters: Measurement and Application Issues	Comments from previous PN ballot are being integrated and authorized for publication pending reversal of Tom Hanson’s Disapproved vote (due to bad PDF). Editor: Dennis Horwitz (for authors Andre Girard/Marc Breton)

IN-PROCESS PROJECTS

PN-3-0065	TSB-142; Optical Return Loss Meters: Measurement and Application Issues	A revised version will be put to second PN ballot. Editors: Lorenz Cartellieri and Michael Carlson
PN tbd	TIA/EIA-455; Standard test procedure for FO fibers, cables, transducers, sensors, connecting and terminating devices, and other FO components	Project number was requested. Per FO4 Closing Plenary, FO4.5 is directed to go directly to ballot with the “calibration” text previously developed by FO6.1.10. Launch Condition issues are not mature enough at this time to include in the revision. Editor: Dennis Horwitz
PN tbd	TSB-XXX, Connector Endface Inspection Instrumentation: Measurement and Application Issues	No progress since outline. Expect to develop a draft by next meeting and submit for PN ballot. Editor: Harvey Stone
Future TSB (FO4.5.1)	TSB-XXX, Guidelines for Round Robins	No progress but active development item. Editor: Tim Drapela, NIST
Round Robin (FO4.5.1)	Return Loss Round Robin	Instructions are finalized and Test Articles are being fabricated. Expect to start RR within 3 months (Sept-2004). Coordinator: Tim Drapela-NIST

NEW BUSINESS

- Proposed TSB on “PON Testing” by Andre Girard/EXFO. Initiative has currently no editor and is otherwise addressed by FO-4 as new business
- Discussions about lacking MM OTDR calibration document ignited heavy debate about IL and RL measurements on MM systems in general. Invitation for participation and supporting data at the next meeting. Possibly TSB to bring the issues around MM OTDR measurements together but at this point a detailed discussion is planned for the next meeting.

## 4 NEW BUSINESS

### 4.1 Recognition

Steve Swanson asked Stephanie Montgomery to thank Susan Hoyler on behalf of the entire FO-4 Engineering Committee for her support over the last 11 years. Steve Swanson also thanked Matt Brown for his leadership within FO-4.3 and wished him well at his new position US Conec. Steve noted the fantastic job Matt has done as Chair of FO-4.3.2.

### 4.2 Fiber to the premises (FTTP)

Discussions during the week included initiating a correspondence group under FO-4 centering on FTTP. Andre Girard, EXFO, will lead a correspondence group to identify and document specific opportunities for FO-4 in FTTP Standards development. A reflector has been established and an FTP site within the FO-4MAIN directory (Bob Jensen, Fluke Networks, to administer FTP site). To join the reflector you must send an e-mail from your e-mail client to [join-fo4fttp@tiacomm.org](mailto:join-fo4fttp@tiacomm.org)

The mandate given to this correspondence group is:

***The Correspondence Group under FO-4 is to identify and document specific opportunities for FO-4 in FTTP Standards development. The output will be a document that may be published that defines a Roadmap of required work in the FO-4 Engineering Committee which provides value to FTTP implementers. The Correspondence Group will present a written report at the June 2005 FO-4 meeting at which time the FO-4 Committee will offer suggestions and assign specific work items to the appropriate FO-4 Subcommittees.***

A joint session of FO-4.1 and FO-4.3.2 yielded a list of potential FTTP discussion items. The outcome of that session has been placed on the FO4MAIN FTP site.

### 4.3 Action items derived from this meeting

Action item review	Action:	Resp:	Status:
2002-06-009	Place document database on the WEB for all projects so that it can be updated and maintained.	TIA Staff	
2003-06-012	Develop national adaptation procedure	TIA Staff	
2004-06-001	FO-4.1 also asked if a process can be developed retiring OFSTP numbers, possibly by using a dual number that includes the old OFSTP number and the new FOTP number for some period of time.	TIA Staff	
2005-01-001	Investigate implementation of forward pointers in FO-4 standards.	TIA	
2005-01-001	Investigate options for taking non-electronic versions of standards to become electronic versions.	TIA	

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<b>Action item review</b>	<b>Action:</b>	<b>Resp:</b>	<b>Status:</b>
2005-01-001	Develop a list of incompatible references that should not be used in TIA standards.	TIA	

#### 4.4 Schedule review

A schedule for the next meeting was discussed and will be developed further between this meeting and the June 2005 meeting.

#### 4.5 Future meetings

FO-4: June 20-23, 2005

National Institute of Standards and Technology - Boulder Laboratories  
325 Broadway  
Boulder, CO 80305-3328  
Tel: (303) 497-5858  
Fax: (303) 926-1630  
web: [www.boulder.nist.gov](http://www.boulder.nist.gov)

### 5 ADJOURNMENT

The Chair thanked all the participants for their contributions during the week and the TIA Staff for their support.

The closing plenary meeting adjourned at 11 AM on January 27, 2004.

This meeting was conducted in accordance with the TIA Legal Guide and the TIA Engineering Manual.

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Steve Swanson, FO-4 Chair

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Bob Jensen, FO-4 Secretary

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