



BUILDING GLOBAL COMMUNICATIONS

Approved by General Counsel

FO-4 Meeting Report

Date: 01/13/03

Location: Tampa, FLorida

Approved: 06/12/03

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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 13, 2003
Hyatt Hotel
Tampa Bay, FL

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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 13, 2003 at 9:00 AM. This opening plenary session is intended for high-level liaison reports, to update members of committee meeting expectations, and to inform them of administrative essentials.

FO-4 Chair, Steve Swanson, called the closing plenary meeting to order at 2:00 PM January 15, 2003. This closing plenary session is intended to summarize Subcommittee meeting activities and resolve issues arising throughout the week of meetings.

1.2 Attendance (quorum, introductions and roster)

Attendance at the closing plenary constitutes the FO-4 membership and quorum. A total of 34 attendees, including 10 voting companies and 24 others companies were present at the closing plenary. A quorum for the combined Engineering Committees was established. The attendees introduced themselves and an attendance roster was distributed for participants to sign.

				Plenary	
				Opening	Closing
Chair:					
Steven Swanson	Corning, Inc.	swansonse@corning.com	607-974-4252	✓	✓

Voting members companies present:

Dave Roland	Alcatel USA	dave.roland@cable.alcatel.com	828-459-8775		✓
Ray Lovie	Alcatel USA	ray.lovie@alcatel.com	828-459-8389	✓	
Tom Hanson	Corning Inc.	hansonta@corning.com	607-974-4530	✓	✓
Arthur Hudson	Defense Electronics Supply	Arthur.hudson@dsc.dla.mil	614-692-0657	✓	✓
Andre Girard	EXFO	andre.girard@exfo.com	418-683-0211	✓	✓
Rex Craig	NIST	rcraig@boulder.nist.gov	303-497-3359	✓	✓
Gair Brown	NSWCDD	browngd@nswc.navy.mil	540-653-1579	✓	✓
Allen Cherin	OFS Fitel	cherin@lucent.com	770-798-2619	✓	✓
Osman Gebizlioglu	Telcordia Technologies	ogebizli@telcordia.com	973-829-4956	✓	✓
Dennis Horwitz	Tempo	dennis.horwitz@rifocs.com	805-389-9868	✓	✓
Matt Brown	US Conec	mattbrown@vsconec.com	828-267-6327	✓	✓

Voting members companies absent:

Jack Dupre	Agilent Technologies	jack_dupre@Agilent.com	707-636-9001		
Kenneth Bow	DOW Chemical	kebow@dow.com	989-638-3759		
Barry Cambeilh	Delphi Comm.	barry.cambeilh@delphiauto.com	949-660-5764		
Ken Marchman	Stratos Lightwave	kmarchman@stratoslightwave.com	708-867-9600		

Other participants

John Kolasinski	NASA/GSFC	john.kolasinski@gsfc.nasa.gov	301-286-6109	✓	
Steve Zimmel	ADC	steve-zimmel@adc.com	952-233-7056	✓	✓
Robert Conte	Avaya	rac07726@yahoo.com	732-817-3661	✓	
Jack Rosko	Berk-Tek, NEXANS	jack.rosko@berktek.com	919-552-4451	✓	✓
John Abbott	Corning, Inc.	abbottjs@corning.com	607-974-6182	✓	
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Pin Su	Chorum	psu@chorumtech.com	469-330-5123	✓	✓
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Daniel Ernst	Diamond	pt@diamond-fo.com	44917854545	✓	✓
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Jim Tatum	Honeywell	jim.tatum@honeywell.com	972-470-4572	✓	
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Iwano Shin'ichi	NTT America, Inc.	s.iwano@ntt-at.com	650-794-2722	✓	✓
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Michael Kinard	OFS	mkinard@ofsoptics.com	770-798-2109	✓	✓
James Refi	OFS	jrefi@ofsoptics.com	404-377-6821	✓	✓
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Stephanie Montgomery	TIA	smontgomery@tia.eia.com	703-907-7735	✓	✓
David Fisher	Tyco Electronics	david.fisher@tycoelectronics.com	717-986-5501	✓	✓
Eric Mies	VytranCorp	emies@vytran.com	732-972-2880	✓	
Robert Otto	Xanoptix	robert.otto@xanoptix.com	603-546-0613	✓	

F0-4 Company attendance history: This does not constitute the quorum list, as companies need to be members of TIA and meet quorum requirements of the TIA Engineering Manual.

Company	3 meetings	Jan-03	Jun-02	Jan-02	Jun-01	Jan-01
Agilent Technologies	2		1	1		
Alcatel	2	1	1	0	1	1
Corning, Inc.	3	1	1	1	1	1
Defense Supply Center	2	1	1	0	1	1
Delphi	?	?	?	?	?	?
Dow Chemical	2		1	1	0	1
EXFO	2	1	1	0	1	1
NIST	3	1	1	1	0	1
NSWCDD	3	1	1	1	1	0
OFS	3	1	1	1	1	1
Stratos	?	?	?	?	?	?
Telcordia Technologies	3	1	1	1	1	0
Tempo	3	1	1	1	1	1
US CONEC	3	1	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.

1.3 Agenda review and approval (FO-4/03-01-005; FO-4/03-01-010)

The 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 2001 edition of the TIA Engineering Manual.

1.5 Chair's report; general items; elections

At the opening plenary, Steve Swanson welcomed everyone to the meeting with a presentation containing the agenda and various topics for discussion. Steve explained that the purpose for the opening plenary is to optimize time in our schedule by reducing redundancy, to keep members informed of administrative items, and to offer all members the opportunity to hear high-level liaison reports relating to other pertinent organizations.

Peter Pleunis, Chair of FO-4.2.1, presented Recognition Awards to John Abbott, Steve Gallowich, Joe Gwinn, Mike Hackert, Paul Kolesar, Petar Pepeljugin, and John Slager for their work in the multimode launch project. Steve Swanson presented Recognition Awards to Tom Ball and Andre Girard for their work in FO-4.3. Steve noted the importance of recognizing key contributors in a timely fashion and asked that he be notified 6 weeks in advance of the meeting with candidates for recognition so that proper preparations can be made.

Steve presented current member numbers on each of the group reflectors. Steve stressed that members should be using conference calls, the reflector, and the FTP site for facilitating meetings and distribution of documents. The reflector has been setup so that e-mail to all of the FO Committees can be sent using the address of foall@tiaonline.org in addition to methods already set for e-mailing individual committees. A reminder was given that elections will be held for all odd number Subcommittees at this meeting.

Under new business, FO-4 conducted a review and discussion of the national adoption of international standards procedure; a proposal was accepted. Also, the Chair presented an update on the continuing effort to establish a well defined vision for the Committee, and the introduction of a survey intended to better understand members needs (the results of the survey were presented at the closing Plenary).

1.6 TIA's report

TIA advised that their old e-mail addresses would not work at the end of the year. Their new addresses should be used in which the person's first initial and full last name should be used (e.g., Stephanie Montgomery; smontgom@tiaonline.org, Billie Zidek-Conner; bzidekco@tiaonline.org).

Stephanie Montgomery also provided an update on the following:

- Technical Committee Meeting in December 2002
- IPR Working Group Status
- Completion of administrative move to FO-4
- ANSI Audit in Spring 2003
- SUPERCOMM in June 2003

1.7 Distribution and numbering of documents

Document #	Contributor	Company	Title
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FO-4/03-01-001	Steve Swanson	Corning, Inc.	January Meeting Schedule
FO-4/03-01-003	Tom Hanson	Corning, Inc.	86A Report for Opening Plenary
FO-4/03-01-003	Tom Hanson	Corning, Inc.	SG 15 Liaison Report
FO-4/03-01-004	Tom Hanson	Corning, Inc.	SG 6 Liaison Report
FO-4/03-01-005	Steve Swanson	Corning, Inc.	Opening Plenary Agenda
FO-4/03-01-006	Steve Swanson	Corning, Inc.	Procedures for adopting international standards
FO-4/03-01-007	Steve Swanson	Corning, Inc.	ISO SC25 WG3 Liaison Report
FO-4/03-01-008	Steve Swanson	Corning, Inc.	IEEE 803.3 Liaison Report
FO-4/03-01-009	Osman Gebizlioglu	Telcordia	Telcordia GR Update
FO-4/03-01-010	Steve Swanson	Corning, Inc.	Closing Plenary Agenda
FO-4/03-01-011	Tom Ball		IEC SC86B Liaison Report
FO-4/03-01-012	Andre Girard	EXFO	General PMD document
FO-4/03-01-013	David Leight	DoD	DoD Liaison Report
FO-4/03-01-014	Arthur Hudson		Mil Document list
FO-4/03-01-015	James Matthews	Corning	SC86C Update
FO-4/03-01-016	James Matthews	Corning	Update on IEC TC86-WG8 Dynamic Modules
FO-4/03-01-017	James Matthews	Corning	FO4-5 Update
FO-4/03-01-018	Allen Cherin	OFS	FO-4.1 Closing Report
FO-4/03-01-019	Gair Brown	NSWCDD	FO-4.2 Closing Report
FO-4/03-01-020	Tom Ball	OFS	FO-4.3 Closing Report
FO-4/03-01-021	Pin Su	Chorum	FO-4.4 Closing Report
FO-4/03-01-022	Greg Smith		FO-4.6 Closing Report
FO-4/03-01-023	Mike Kinard	OFS	FO-4.7 Closing Report
FO-4/03-01-024	James Matthews	Corning	FO-4.8 Closing Report
FO-4/03-01-025	Dennis Horwitz	RIFOCS	FO-4.9 Closing Report
FO-4/03-01-026	Steve Swanson	Corning	Survey Results

1.8 Meeting report review and approval (FO-2&6/02-06-012)

The June 2002 meeting report was reviewed at the closing plenary. The Engineering Committee unanimously approved the June 2002 meeting report.

2 OLD BUSINESS

2.1 Action item review

There were no action items to be reviewed at the opening plenary. Action items were reviewed at the closing plenary, which included:

Action item review	Action:	Resp:	Status:
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Action item review	Action:	Resp:	Status:
2002-01-002	Review and update SC and WG scopes	SC Chairs	Complete
2002-01-003	Benchmark other SDOs like OIF and IEEE	TIA	On-going
2002-01-004	Develop proposal to establish formal liaisons with IEEE and other application groups	A. Cherin	Drop
2002-01-005	Develop a recommendation for FO-2/6 on reliability	P. Su	Ongoing
2002-06-001	Investigate discontinuing V-card attachments from TIA	TIA	Complete
2002-06-002	Provide meeting location standards from TIA for January 2004	TIA	Complete
2002-06-003	Investigate and provide update on moving forward with MOU with ICEA	TIA	Complete
2002-06-004	Survey attendees as to satisfaction of meeting facility arrangements	TIA	Complete
2002-06-005	Restructure of FO-2/6 into FO-4	S. Swanson	Complete
2002-06-006	Send information to all FO Committees of what wireless adapter cards are best suited for LAN	TIA	Ongoing
2002-06-007	Liaison letter to NEMI regarding packaging for splice and connectors	S. Swanson H. Chandan T. Ball	Complete
2002-06-008	Provide TIA with January 2004 meeting location to be in the Southwest USA	S. Swanson	Complete
2002-06-009	Place document database on the WEB for all projects so that it can be updated and maintained.	TIA	In progress
2002-06-010	Transfer responsibilities for FO-2&6 to FO-4 by no later than by the January meeting. Initiate all changes within the TIA structure and WEB site.	TIA	Complete
2002-06-011	Subcommittee Chairs to include elections within their agendas for odd number Subcommittees	SC Chairs	Complete
2002-06-012	Review feasibility of moving meeting times to February and August	S. Swanson	Complete

2.2 Liaison reports

2.2.1 DoD, Dave Leight (FO-4/03-01-013)

MIL-C-28876 and all specification sheets in final draft stage. Comment resolution time was extended due to large number of comments. Resolution now complete. Documents are in final editing and drafting status.

MIL-T-29504/4C and /5C. No status change. All suppliers must list company trademark or logo in SAE-AIR1361. Comment dispositions being prepared.

MIL-PRF-49291/1B approved and dated 18 December 2002. Spec sheet provides part numbers for radiation resistant 50/125/245 and 50/125/500 micron fiber.

MIL-PRF-85045/8A cable specifications in final draft stage. Part numbering issue held up publication in December. Document previously was a DoD specification using D85045/8-XX part numbering. Current revision changes document from DoD to MIL spec, but question remains on impact of data conversion to M85045/8-XX part numbering. Other documents that have gone through similar change have set precedence to change part number designator.

Comment resolution to TIA 440B received – 1 formal comment, 1 informal

TIA –440B ballot received one negative comment to include new definitions for:

- Differential Group Delay
- Polarization Mode Dispersion
- Polarization Dependent Loss
- Polarization Dependent Gain
- Principal States of Polarization

PMD and PSP definitions have been supplied.

Request definitions for DGD, PDL and PDG.

Received informal comment to incorporate TR-42 contribution into TIA-440-B.

TR-42 contribution includes definitions for:

- Laser Optimized Multimode Fiber
- Differential Mode Delay
- Restricted Launch Bandwidth
- Vertical-Cavity Surface Emitting Laser
- Effective Modal Bandwidth
- Encircled Flux.

2.2.2 IEC 86A, Tom Hanson (FO-4/03-01-002)

Plastic Optical fiber is being discussed in 86A as it is applying to TC100 and ISO/IEC SOHO.

Within WG1, Fiber, items being discussed include:

- Multimode (A1) specifications
 - DMD and 10 Gig requirements
- Single-mode specifications & new fibers
 - G.scl (wide band 1460 - 1625 nm)
 - Negative slope + negative dispersion
 - Dispersion managed links
- PMD measurements
 - low PMD issues
- OTDR automatic defect determination
- Inter-fiber compatibility guide
- Measurements of EDFA fiber
- Photonics interconnection fiber

Within WG3, Cables, items being discussed include:

- Products for use in blown installations
-

- Cable for use in patchcords
 - Patchcord specifications in SC86B
- Restructuring cable test methods
- Detail spec for outdoor cable
 - Direct buried and duct
- Detail specs for premises cabling
 - Support for IEC/ISO 11801

2.2.3 IEC 86B, Tom Ball (FO-4/03-01-011)

WG4: Circulated 18 documents for vote & comment in the past 6 months

Key measurement documents under development:

1685/NP, New Work item Proposal for the Measurement of Group Delay and Chromatic Dispersion of Passive Components. NP was approved and will circulate as a Committee Draft (CD) for comments. Approved for a NP or PAS FO Connector Proof Test, FO Connector Test for transmission with Applied Load and FO Connector Application. All these are in support of a IEC Performance Standard for Telcordia requirements.

1749/NP, Measurement of Lateral Core Offset of Fibre Arrays. The NP was approved and will move to CD for Comments.

WG5: Circulated 5 documents for vote & comment in the past 6 months.

Key Reliability documents under development:

62005-8: Fundamentals of Reliability Theory (new)- In preparation and will cover the basics of reliability theory. It will give the background essential to the more advanced procedures for processing the experimental data called for in other parts.

Reliability Qualification for FO Connectors (draft form) will be submitted as a PAS

A draft document on Reliability Testing of FO Components under High Optical Power is being prepared for review at the April 03 meeting.

WG6: Circulated 20 documents for vote & comment in the past 6 months

Key document types under development:

Development of Performance Standards for connectors and harmonization of environmental categories and definitions with those of WG7 (Passive Components).

Development of Optical Interface Standards. Three of these documents have progressed to the CD stage. New working drafts for Interface Standards and Performance Standards for Fibre Management Systems for Closures are being prepared. For the closures it is proposed to have four parts; (1) Closure to Pit, (2) Cable Entry to Closure Base, (3) Organizer to Closure and (4) Fibre to Organizer

WG7 circulated 5 documents for vote & comment during the last 6 months

Their focus has been on Performance Standards aligned with Industry needs. To this end they have been working in conjunction with WG6 to have a common General & Guidance document for Passive components and Connectors.

They are working on drafts of performance standards covering passive dispersion compensators, filters and WDM devices.

2.2.4 IEC 86C, Jim Matthews (FO-4/03-01-015)

Jim Matthews provided an overview of the activities in IEC SC86C.

- Work Advanced Since Florence (October 2001) in SC86C WG1
 - Collection and reduction of two-dimensional nearfield data for multimode fibre laser transmitters
 - Determination of low bit error ratio using Q-Factor measurements
 - Optical signal-to-noise measurement for dense WDM systems
 - Time-resolved chirp and alpha-factor measurement for laser transmitters (Pre-Standard)
 - Guideline to accommodate and utilize non-linear effects in single-mode fibre optic systems
 - PMD system measurements for installed links
 - Multimode and single-mode Gbit/s applications - Gigabit Ethernet model (Tech. Report)
 - Statistical calculation of chromatic dispersion(Tech. Report)
- New Work in SC86C WG1
 - Optical eye pattern, waveform, and extinction ratio measurement (Edition 2.0)
 - Measurement of average Q-factor
 - Calculating Dispersion Penalty from Time Resolved Chirp Measurements
 - Development of PMD Power Penalty Relationships
 - Measurement of Jitter Parameters
 - PMD Umbrella Document
 - Broad Task Group under TC86 Coordination, WG1 Admin.
 - Girard (Exfo, Canada) Task Group Leader
- Work in SC86C WG332 Documents Currently Under Development or Revision Including:
 - Power & Noise Figure Test Method - 3 Tech. Under Revision
 - Gain / Noise Figure for Multichannel - 2 TM Under Development
 - PMD Test Method (PSA) and Umbrella Document
 - Generic Specification Revision
 - Classification of OA's (Published 12/2002)
 - TR on Maximum Permissible Optical Power for Safe and Damage-free Use of OA's
 - Coordination with TC76, TC31, ITU-T SG15
- Future Work: Metro Amps, Raman Amps, and Harmonization with TC86/WG8 Dynamic Modules Activities
- Work in SC86C WG4 Approximately 18 documents in circulation, including:
 - Package & Interface Standards: 1x9 Plastic, Coaxial RF, 12 Channel Parallel MPO, and Miniature Pump Lasers
 - Test & Meas. Standards: General & Guidance, ATM/PON Transceivers
 - New Work: Interface and Package Standard on SOA's
 - Specs and Temperature Conditions on Uncooled Transceivers
 - Specify either Case Temperature or Ambient Temperature With Airflow Conditions
 - Anticipate Revision of IEC 62007-1 and 02) Semiconductor Device Char and Essential Ratings
 - Old style / structure from TC47

2.2.5 IEEE 802.3, Steve Swanson (FO-4/03-01-008)

Steve reported that four meetings had been held since the last FO meeting with good progress being made

on all projects. These include:

- 10GbE Standard published July 2002
- DTE Power Standard at final approval
- EFM making progress but schedule has slipped

Ethernet in the First Mile has received thousands of comments that have been resolved. Twelve interfaces are defined including 10 for fiber and 2 for copper. The schedule for this project has slipped from September 2003 to at least March 2004.

2.2.6 ISO/IEC JTC1 SC25/WG3, Steve Swanson (FO-4/03-01-007)

Steve reported that a meeting was held in Washington during September 2002 and that the 11801 2nd edition had been approved. Four fiber types are specified to support various classes of applications. These include three multimode fibers (OM1, OM2, OM3) and one singlemode (OS1).

2.2.7 ITU Q.15/15, by Tom Hanson and Bill Gardner (FO-4/03-01-003)

Bill Gardner reported on an interim meeting in Santa Rosa in October 2002, providing details on the following items:

- Proposals on G.scl fiber: non-zero dispersion from 1460-1625 nm (S,C,L bands)
- Proposals to reduce PMD_Q for 40 Gb/s applications
- ITU-T Round Robins
 - n²/A_{eff} (In progress)
 - A_{eff} (ITU-T decides no)

Tom Hanson noted:

The following Recommendations were consented:

- G.650.1; Definitions and test methods for linear, deterministic attributes
- G.650.2; Definitions and test methods for statistical and non-linear attributes
- G.650.3; Test methods for installed single-mode links
- G.654 cut-off shifted single-mode fiber

Work continues on:

- Modifications to cable PMD requirements
 - make 0.5 universal: 10 Gig Ethernet
 - add 0.20 option to:
 - Extend 10 Gbit/s SDH to ~ 2000 km
 - Add some 40 Gbit/s capability ~ 200 km
 - add a 0.10 option to G.655
 - 400 km @ 40 Gbit/s
- New wide band fiber type (G.scl)
 - dispersion: 2-11 ps/nm*km from 1460 nm to 1625 nm

2.2.8 ITU Q.16/15, by Tom Hanson on behalf of Jerry Shrimpton (FO-4/03-01-003)

The activities of ITU Q.16/15 were reviewed. The following updates were provided:

← --- Formatted: Bullets and Numbering

- Two new wavelength grid Recommendations
 - G.694.1: DWDM & G.694.2: CWDM
- G.959.1 IrDI
 - Interdomain interface ~80 km up to 40 Gbit/s
- G.capp: CWDM applications Recommendation
 - Power, wavelength combinations
- sup.dsn: Guide on ITU approach to system design

2.2.9 ITU Q.17/15, Jim Matthews (FO-4/03-01-003)

The activities of ITU Q.17/15 were reviewed. The following updates were provided:

- Consented G.671: Components for DWDM
- Modified the definition of the PMD value
- New work: Raman amplification
- Update Amplifier document
- Possible new work on CWDM components

2.3 Liaison letters received

There were no liaison letters received by FO-4.

2.4 Reports on pending projects, Subcommittees

2.4.1 FO-4.1, Single-Mode Systems, Allen Cherin

The FO-4.1 meeting was held on Tuesday, January 14, 2003 with nine attendees from seven different organizations being present.

Technical discussions centered on common issues related to the work in IEC SC86C WG1. The following topics were discussed:

- PMD Umbrella document
- Time Resolved Chirp Measurement – IEC 61280-2-10
- Calculating Dispersion Penalty from Time Resolved Chirp Measurements – IEC 61280-8
- Measurement of Average Q-Factor – IEC 61280-2-11

The above developing documents are intended to be adopted as TIA Standards.

Within FO-4.1.1, Single-mode Systems Design Guidelines, Gair Brown reported that a draft design guide is expected to be delivered at the June 2003 meeting. This draft will contain chapters for specific design problems associated with:

- Single Channel Links
- Single Channel Links with Amplifiers
- Multi Channel Links with Amplifiers
- SM Gigabit Ethernet

Liaison Reports related to work in the IEC and ITU were given by A. Cherin and T. Hanson. The reports addressed activities within:

- IEC SC 86C WG1 on Fiber Optic Subsystems
-

- ITU-T Question 16/15 on Terrestrial Systems
- ITU-T Question 17/15 on Components and subsystems

Topics related to polarization mode dispersion (PMD) measurements of installed links were discussed in FO 4.6.1 because of its relevance to ITU SG15/Q15 link related fiber/cable test procedures (G650.3).

Action items – Document maintenance of OFSTPs

The FO4.1 subcommittee unanimously agreed to reaffirm the following OFSTPs.

- TIA-526-02 - published 07/89 - OFSTP-2 - ***Effective Transmitter Output Power Coupled into Single-Mode Fiber Optic Cable***
- TIA-526-03 - published 07/89 - OFSTP-3 - ***Fiber Optic Terminal Equipment Receiver Sensitivity and Maximum Receiver Input***
- TIA-526-04-A - published 08/97 - (downgraded to TIA only document 11/2002) - OFSTP-4 - ***Optical Eye Pattern Measurement Procedure***

The following documents will be five years old in 2003. If the review cannot be completed by the five-year anniversary date (published date), an extension of time must be filed with ANSI. An extension of up to 5 years can be requested. If the extension is not requested, the document will be downgraded to a TIA only document on the first of the month following the 5-year anniversary date.

- ANS - TIA/EIA-526-07 - published 07/98 - OFSTP-7 - ***Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant*** (ANSI/TIA/EIA-526-7-98) - (Reaffirm with SP ballot)
- ANS - TIA/EIA-526-10 - published 11/98 - OFSTP-10 - ***Measurement of Dispersion Power Penalty in Digital Single-Mode Systems*** (ANSI/TIA/EIA-526-10-93) (R98) (Reaffirm with SP ballot)
- ANS - TIA/EIA-526-11 - published 11/98 - OFSTP-11 - ***Measurement of Single-Reflection Power Penalty for Fiber Optic Terminal Equipment*** (ANSI/EIA/TIA-526-11-91) (R98): (Reaffirm with SP ballot)

2.4.2 FO-4.2, Digital Multimode Systems, Gair Brown

The 1st meeting of the FO-4.2 Subcommittee on Digital Multimode Systems was called to order by Chairman Gair Brown at approximately 8:00 AM on January 14, 2003. A quorum was established with 8 of 13 voting members in attendance. Total attendance was 14.

Report of Working Group FO 4.2.1

A presentation on the measurement of optical fiber cable skew (document number FO42-03-01) was given to the FO 4.2.1 working group by Arthur Barlow (Perkin Elmer). The basic issues that must be addressed with respect to optical fiber cable skew measurement are the determination of which contributors to the skew that are to be measured and the measurement precision required for the measurement. Petar Pepeljugin (IBM) provided a presentation on one approach to enhance existing fiber optic link design spreadsheets to improve simulation fidelity. The basic approach is to embed compiled complex simulation engines as macros within the Excel models. The presentation was well received. A benefit of the approach is that a class of highly complex analytical and quasi-analytical models can be provided while maintaining a simplistic user interface. A possible drawback of the approach is the inability to modify/change the basic models within the spreadsheet without access to the source code of the compiled complex simulation macro. The role of modeling and simulation within the

standards and development communities was discussed and will be further examined at future meetings.

FOTP-220 balloting has closed. All comments were discussed at the working group meeting and have been resolved. TIA-492AAAC balloting has also closed. All comments were discussed at the working group meeting and have been resolved. FO 4.2.1 requested approval to forward TIA-455-220 and TIA-492AAAC for publication. **This action was approved.** FO 4.2.1 also requested permission to apply for an FOTP number for the draft procedure for the measurement of optical fiber cable skew and to proceed to PN ballot when the subcommittee was ready. **This request was approved.**

High Performance Parallel Interface – 6400 Mbit/sec Optical Specification

G. Brown (Navy) reported that the FO-4.2 comments (document FO22-02-02) on the draft HPPI specification were submitted to the NCITS committee. G. Brown was contacted by Don Tolmie (the document author) for assistance in resolving the comments. After discussions, all of the TIA comments were addressed except for the comments on the measurement of cable skew (for which TIA does not currently have a concrete recommendation). A draft set of comment resolutions (document FO42-03-02) was developed and circulated out to the FO 4.2 subcommittee for comment. No objections were raised by the FO 4.2 subcommittee. The acceptability of the comment resolution recommendations was communicated back to NCITS. The draft HIPPI standard has been revised to include the recommendations and is currently completing the NCITS publication process.

TIA-785 “100 Mb/s Physical Layer Medium Dependent Sublayer and 10 Mb/s and 100 Mb/s Auto-Negotiation on 850 nm Fiber Optics” (SP-4360-AD1)

G. Brown reported that the Addendum 1 to TIA-785 had been circulated as an SP ballot. The results of the ballot were 3 votes of abstention and 11 votes for approval. As there were no negative ballots or comments, the document was forwarded for publication.

FOTP-95

The document author (G. Brown) has not yet developed draft changes to FOTP-95 to address the measurement of output optical power from multimode optical fibers. The IEC has set up a separate document for the measurement of optical power from multimode cable (from the single mode document). However, the IEC document is just a placeholder with no active resources applied to the project. TIA has multiple options as to how to proceed. After discussion the Subcommittee decided to pursue the development of a joint multimode/single mode document with relatively parallel submission of the document into the IEC. The Subcommittee noted two issues that should be addressed in the revision effort: compatibility/adequacy of the optical detection system optics with the core diameter and NA of the multimode fiber under test, and the variability of optical power measurements out of short length pigtailed or jumper cables from fully filled optical sources.

10/100/1000 Mbps Short Wavelength Ethernet Standard

Gary Cawley (Optek) provided a presentation (Document FO4.2-03-04) on the current status and findings of the Task Group. The Task Group has continued efforts to quantify the need for a 10/100/1000 auto negotiation Ethernet standard. It appears that user interest in having a viable 10/100/1000 auto negotiation standard is growing and that having this standard in place would have great market impact. ADC has built up demonstration hardware using VCSEL based 10/100 parts and demonstrated that the VCSEL based parts can be made compatible with existing 10/100BASE-SX parts (short wave LED based parts). Additional benefits from the VCSEL-based products is the potential capability to support link lengths up to and possibly greater than 2 km. The current state in the Ethernet market is that customers cannot upgrade current fiber optic Ethernet products without equipment change-out except for the

10/100BASE-SX equipment. Interest in a flexible adaptable Ethernet optical interface is growing in the user community. A 10/100/1000 would provide support for customer expectations for easy upgrade.

In addition, there is a desire for a configurable bandwidth port for access to bandwidth providers to enable flexible and simple bandwidth tariff management by those providers. Conceptual requirements communicated from users indicate both SM and MM requirements over link distances beyond 300 m (for 100 Mb/s). As the Task Group's efforts have substantiated the conceptual feasibility of a 10/100/1000 Ethernet product with existing 10/100 Ethernet products and a reasonable interest in the development of the standard exists, the chair recommended that the Task Group be officially recognized as a Working Group under FO-4.2. The Working Group number will be FO-4.2.1. Interested FO-4.2 Subcommittee members were encouraged to participate in the development efforts within FO-4.2.1. The Working Group members are to select a Working Group chair by 15 February. The working group was charged with developing a draft document for review at the June FO-4.2.1 meeting.

TR-42 Requests for Support

Fusion Splicing of Multimode Fiber. TR-42 previously requested information from FO-2.2 regarding the effects of fusion splicing on multimode fiber launch conditions. There is concern that in high data rate multimode systems with critical launch condition requirements the fusion splices may unacceptably alter the fiber launch conditions. G. Brown responded back to TR-42 that there was very little data available pertinent to the question, but that the effects of high quality fusion splices was expected to be minimal. The response also indicated that if TR-42 can provide optical source samples, that the FO-2.2 subcommittee is willing to characterize the effects of fusion splice samples on the mode power distribution present in the samples. TR-42 has not replied to FO-4.2's offer.

Chairs Note: At the meeting, it was stated that the response to TR-42 would be included in the minutes. However, documentation of the response could not be found. As a result, a second response from FO-4.2 to TR-42.8 was sent and will be available for review at the next FO-4.2 meeting.

TSB on Field Measurement of Multimode Fiber Cable Loss. TR-42 has requested assistance from FO-2.2 and FO-6.1 in the development of a TSB addressing the field measurement of fiber optic cables per TIA-526-14 and TIA-526-7. TR-42 feels that clarifications in the applicability of the various test procedures is necessary. G. Brown responded back to TR-42 that FO-2.2 will support the development of the proposed TSB, and noted that the inclusion of information on the usage of appropriate source launch conditions is a critical area that the TSB should address. In addition, G. Brown provided a copy of document number FO22-02-08 (Optical Source CPR Measurements) to the TR-42 Subcommittee for information and further discussion. After review of the Optical Source CPR Measurements Presentation, the TR-42 Task Group developing the TSB requested additional information, which was provided by G. Brown. At this point in time a draft document has been developed by the Task Group and should be ready for an initial ballot soon.

FO 4.2 Document Status

Document Number	Author	Publication Date	Status
TIA-455-59	?	2/00	Due for 5 year review in 2005
TIA-455-60	?	2/00	Due for 5 year review in 2005

TIA-455-203	?	?	Due for 5 year review in ?
TIA-455-204	?	?	Due for 5 year review in ?
TIA-455-220	S. Swanson, Corning	Not yet published	Pending publication approval
TIA-492AAAA	S. Swanson, Corning	?	Due for 5 year review in ?
TIA-492AAAB	S. Swanson, Corning	?	Due for 5 year review in ?
TIA-492AAAC	S. Swanson, Corning	Not yet published	Pending publication approval
TIA-526-14	None	6/24/1998	Due for 5 year review in 2003
TIA-785	C. Montstream, Ortronics	5/24/01	Due for 5-year review in 2006
TIA-626	G. Brown, NSWC	12/1/95	Document reaffirmed at June 2002 meeting.

FO-4.2 document responsibilities have grown since the last meeting due to the FO committee restructuring and an attempt to align document responsibilities with the subcommittees that tend to work on the documents. It is likely that additional documents will be added at the June meeting as well. Subcommittee members were given the action to review TIA-526-14 and provide comments to the FO-4.2 reflector prior to February 14. The Subcommittee approved submitting a reaffirmation ballot for TIA-526-14 before the June meeting if no substantive comments are found in the technical review.

IEC Harmonization

Allen Cherin (OFS) provided an update of the multimode optical fiber related efforts in IEC TC86A Working Group 1 and IEC TC86C. IEC currently has several projects in process that relate to multimode optical fiber systems and measurements. The IEC has developed a liaison report on plastic optical fiber that is of interest to the FO-4.2 Subcommittee. Steve Swanson was asked to provide a copy of that report back to Gair Brown for distribution to the FO 4.2 members.

2.4.3 FO-4.3, Interconnecting Devices, Tom Ball

Elections were held with Tom Ball being elected Chair and Andre Girard, EXFO, elected Vice-chair. Matt Brown, USConec was appointed convener of WG 4.3.2, Connector Documentation.

Documents

Advanced for SP Ballot

- FOCIS 2 (BFOC Connector) – SP Default
- FOCIS 17 (MU Connector) - SP

Advanced for TIA Publication Process

- TSB 144, Adhesives Discontinuities

Advanced for TIA/ANSI Publication Process

- FOCIS 15 (MF Connector)
- FOCIS 16 (LSH Connector)

Transferred from FO-6.9 to FO-4.3

- TIA/EIA-455-192
- TIA/EIA-455-193
- TIA/EIA-455-199
- TIA/EIA-455-200

- TIA/EIA-455-201
- TSB 120
- TSB 130

New Projects Approved for Balloting

- Optical Interface Contribution to IEC SC86B TAG
- Connector Endface Workmanship TSB

Projects Cancelled

- None

Standards Approved for Rescission Ballot

- None

ANSI Standards Reaffirmed

- None

TIA Standards Reaffirmed

- FOTP 6B 2763 Cable Test
- FOTP 22B 2937B Ambient Light Susceptibility
- FOTP 36A 2995RV3 Twist test
- FOTP 134 3366 Connector Ferrule Hole Inside Diameter
- FOTP 189 3-4482 Ozone Exposure
- FOTP 190 3-4481 Low Air Pressure (High Altitude)

Standards Transferred to FO-4.8

- FOTP 42A 4656 Optical Cross Talk
- FOTP 156 3135 Optical Transfer Coefficient for Switches
- FOTP 157 4639 Polarization Dependent Loss of SM Components
- FOTP 159 3198 Transmission Spectra for Branching Devices
- FOTP 180A 4536 Optical Transfer Coeff. Of a Branching Device
- FOTP 196 4355A PMD Meas. in SM Components and Devices
- FOTP 197 4591 Diff. Group delay of SM Devices by Differential Phase Shift Method
- FOTP 198 4162 Polarization of SM Components by Matrix Calculation Method
- FOTP 205 3-4725A Amplitude Response of Narrow Band Passive Components
- FOTP 228 3-0003 Relative Group Delay & Chromatic Dispersion Of SM Components by Phase Shift
- FOTP 229 3-0055A High Power Characterization of Passive Components
- 6200000 Generic for Passive Optical Branching Devices
- 620A000 Sectional for SM Branching Devices for Outside Plant
- 620AA00 Blank Detail for SM Branching Devices, Outside Plant
- 6300000 4758 Generic for Passive FO Switches
- 630A000 3136A Sectional for SM FO Switches
- 630AA00 3395A Blank Detail for SM FO Switches

2.4.4 FO-4.4, Reliability and Characteristics Active Optical Components, Pin Su

There were a total of five attendees at this meeting. Old business was reviewed including:

- FOTP-203 on Launched power distribution measurement procedure for graded-index multimode fiber transmitters (published in June 2001)
- OFSTP/FOTP on the measurement of digital receiver eye width (TIA has no record) [Members had little ideas about it.]
- FOTP on measurement of frequency response of digital receivers (TIA has no record) [New – the draft was provided]
- OFSTP/FOTP on the measurement of mode partition noise K factor (TIA has no record) [Members had little ideas about it.] FOTP-142 (PN-0412) on modal noise power penalty for laser transmitters (TIA has no record) [To be put off for now.]

New document activities included:

- The draft of a new FOTP on the Measurement of Frequency Response of Digital Receivers was provided in the meeting. Chair will request a Project Number for it. A document on the multimode modal noise, FOTP-142, was decided to be put off due that there appears to be no need from industry, and a lack of consensus among the Subcommittee.

The following standards were discussed and decided to be reaffirmed:

- ANS-526-15 - (published 11/98) - OFSTP-15 - Jitter Tolerance Measurement (ANSI/TIA/EIA-526-15-93) (R98)
- ANS-526-16 - (published 11/98) - OFSTP-16 - Jitter Transfer Function Measurement (ANSI/TIA/EIA-526-16-93) (R98)
- ANS-526-17 - (published 11/98) - OFSTP-17 - Output Jitter Measurement (ANSI/TIA/EIA-526-17-93) (R98)
- ANS-526-18 - (published 11/98) - OFSTP-18 - Systematic Jitter Generation Measurement (ANSI/TIA/EIA-526-18-93) (R98)
- TIA-455-128 - published 07/96 - FOTP-128 - Procedures for Determining Threshold Current of Semiconductor Lasers
- TIA-455-129 - published 05/96 - FOTP-129 - Procedures for Applying Human Body Model Electrostatic Discharge Stress to Package Optoelectronic Components

Discussion was held regarding TIA-455-127 - published 11/91 - FOTP-127 - Spectral Characterization of Multimode Laser Diodes, Performance of Optical Fibers. The measurement methods on spectral width for VCSEL were presented. It was decided that FOTP-127 should be revised as the method described in the current document is out-of-date.

Several IEC documents were introduced at the meeting including:

- Dynamic Module (one on performance and one on reliability)
- High Power (one on testing method and one on reliability qualification)
- Fiber Management System
- Reliability Process Methodology

2.4.5 FO-4.5, Optically Amplified Devices, Subsystems and Systems, Jim Matthews

There was no meeting of FO-4.5 during this week. The emphasis of the work in this Subcommittee will be with regard to forwarding proposals and positions to IEC SC86C/WG3 and to adopt IEC amplifier test procedures. From an ITU-T Study Group 15/WP4 perspective, this Subcommittee will discuss US positions and help clear ITU-T contributions for Committee B. A meeting of ITU-T Study Group 15 will be held next week in Geneva.

Jim Matthews reported that there was an April interim meeting of F)-2.7 in Atlanta, GA in conjunction with a TIX1 meeting, therefore the agenda for this meeting was "light". Items discussed during this meeting included:

- Optical Amplifier Metrology - Obarski (NIST): RIN Standards
- IEC Activity including Laser Safety
- Future meeting schedule - Conflict with ITU-T schedule and State Department Committee B Requirements
- Possible Contributions for ITU-T Experts Meeting
- Question 16/15
- Question 17/15
- Updated position document on Intra-domain interfaces (IaDI)
- IEC / ITU Issues of Reflectance/Return Loss (FO-6.3 and FO-2.1 implicated)
- IEC Reliability of Optical Amplifiers (Publication due early July which will be a strong candidate for back adoption)

2.4.6 FO-4.6, Optical Fibers, Greg Smith

The FO-4.6 meeting had 13 attendees from 8 organizations including 4 of 6 voting members thereby establishing quorum.

Within the FO-4.6.1 Working Group, definitions were drafted on various PMD terms for TIA-440, a review was made of the skew measurement proposal (questioning the ownership), and the Working Group scope was reviewed. In FO-4.6.2, a proposal was made to advance a break source analysis document as an ITM, and they appraised the NEMI representative of the possibility of a splice reliability document that may be discussed at the June 2003 meeting.

Major accomplishments at this meeting included:

- Approved to ballot the break source analysis document as an ITM.
 - Crafted a proposal (to 4.0) for both backward pointers and forward pointers for supersessions and/or withdrawals. This will be used in the following actions.
 - Agreed to put in a corrigendum to add a TIA foreword to FOTP-78, the adoption of the IEC document on attenuation measurement
 - Agreed to advance withdrawal ballots on 10 FOTPs which are superceded by FOTP-78:
 - FOTP-24
 - FOTP-46
 - FOTP-50
 - FOTP-53
 - FOTP-59
 - FOTP-61
 - FOTP-77
 - FOTP-79
 - FOTP-115
 - FOTP-120
 - Agreed to publish the following IEC adoptions with TIA forewords
 - FOTP-177 Numerical aperture and
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- FOTP-178 Coating strip force
- Agreed to ballot adoptions of the IEC standard for the following
 - FOTP-175 Chromatic dispersion
 - FOTP-62 Macrobending loss
 - FOTP-133 Length
 - FOTP-176 Glass geometry
 - FOTP-80 Cut-off wavelength
 - FOTP-195 Coating Geometry
 - FOTP-191 Mode field diameter
 - FOTP-50 Damp heat aging
 - FOTP-51 Dry heat aging
 - FOTP-xx New document for fiber temperature cycling
 - FOTP-53 Fluid immersion aging
 - FOTP-111 Fiber curl
 - FOTP-20 Change in transmittance
- Agreed to prepare IEC adaptation text for the following (to be reviewed in June 2002):
 - FOTP-31 Proof test
 - FOTP-28 tensile strength and dynamic fatigue
 - FOTP-76 Stress corrosion susceptibility (fatigue)
- Agreed to investigate the need to advance a temperature/humidity cycling test in the IEC
- Agreed to the following withdrawals
 - FOTP-119 duplicate of MFD
 - FOTP-202 replaced by ITM-23, nonlinear coefficient
 - ITM-2 Hydrogen evolution from coating measurement
- Approve the revision of FOTP-3 (temperature cycling, general) as a TIA Standard with the ballot to be issued before the June 2003 meeting.
- Approve publication of revised 492AAAC
- Approve publication of revised FOTP-220
- Agreed to transfer the following documents to FO-4.2 (with the agreement of 4.0)
 - 492Axxxx MM specifications
 - 492AAAC 10 Gig 50 um spec
 - 492AAAA 62.5 spec
 - 492AAAB old 50 um spec
 - FOTP-220 DMD
 - FOTP-203 EF
 - FOTP-204 BW
 - OFSTP-14 Cable plant attenuation
- Agreed to continue the responsibility for the documents that had been associated with FO-6.6.1 (now FO-4.9.1)
- Agreed to accept the responsibility of the polarization maintaining fiber transmission measurements (with the agreement of FO-4.0)
- Agreed to propose that the proposed skew measurement be maintained in FO-4.2.1.

Action needed (and approved) by FO-4 included:

- Approve the advancement of an Advisory Note to the Technical Committee to establish the
-

procedures for “pointer” for supercession or withdrawals.

- Approve the proposed transfer of documents from FO-4.6 to FO-4.2
- Approve the principle of transferring the polarization maintaining fiber transmission measurements to FO-4.6 [These had been the responsibility of FO-6.9.]

2.4.7 FO-4.7, Optical Cables, Mike Kinard

The Subcommittee on Optical Fiber Cables met in the afternoon of Tuesday, 14 January 2003. Mike Kinard, OFS, Subcommittee Chair, presided. There were ten people present, but representatives of only five of the eleven member companies. So, a quorum was not achieved. Because of this, the subcommittee will convene an interim meeting as a teleconference to take care of certain critical business. This meeting will be scheduled for a date in February.

It must be noted that due to current economic difficulties and turnover in personnel, some member companies have been absent for several meetings. The Chair has determined to take no actions to suspend any companies because of these extenuating circumstances.

FO-4.7 is due for election of officers, but that could not be accomplished due to lack of a quorum. Mike Kinard stands for election to the Chair, and Scott Chastain stands for election to permanent Secretary. The Subcommittee asks that FO-4 undertake the election action at this time.

A number of documents listed in the June 2002 report were to be included in the January agenda for committee action. Due to an oversight these were not listed. Therefore, they will be included in the teleconference agenda. They include all of the documents on the Secretariat’s “hot list”, and others that are due for action by June.

Several FOTPs were noted as needing action, and the representative of the various companies will either affirm or recruit authors. FOTP-33, tensile load and bend, had been languishing due to a string of author turnovers. Corning Cable Systems now has an author and it will go forward. It was discussed at length, and some significant changes will be made in the default requirements.

The usual reports of specific details from Liaison reports were made. The Subcommittee continues to closely follow the work of the IEC Working Groups (WG3 and the joint WG1/WG3). In particular, the array of product specifications to support IS 11801 are of keen interest.

FO-4.7.10, Task Group on Color Coding, had met in the morning. They reported that Revision C of TIA-598 will go forward with several short-term changes:

- Requested jacket colors for specific fiber types—Blue for PM fiber and Aqua for Laser-Optimized fiber—will be included;
- some changes to darken the standard definition of Slate will be included; and
- the complete list of color definitions, currently in EIA-359, will be incorporated.

The work on colors thirteen through eighteen was put on the back burner due to lack of a commercial driver. Color assay using colorimeters will be studied.

John Peters, Telcordia, resigned as Chair due to uncertain funding. Ray Lovie, Alcatel, accepted the appointment as Chair.

FO-4.7.17, Task Group on the Cable Impact Test, was dissolved since their job was done. This leaves two active Task Groups: color coding and IEC coordination.

Those present discussed vision and direction for the Subcommittee. Some points:

- Emphasis centered on the need to use Standards to promote trade and commerce, rather than just sell documents.
- The idea of writing non-specifiable guidelines/practices was seen as useful.
- IEC harmonization and using National Standards to drive IEC positions is key.
- Air-blown installation and micro cables are current hot topics in our Industry. Work internationally is ahead of work in TIA.
- Installation practices would be useful.
- Aerial plant tests (FOTPs or similar) are largely missing from the TIA portfolio.
- A new or reemphasis on cables with hardware—closures, connectors, attachment hardware, etc.—would be useful.

2.4.8 FO-4.8, Passive Fiber Optic Devices, Jim Matthews

Rob Johnson was no longer able to continue as chair and Jim Matthews, Corning, was appointed Chair at this meeting. Andre Girard, EXFO, was appointed as Vice-chair. A quorum was established at this meeting and the scope clarified to include “components” and “devices”. The scope of this Subcommittee now reads:

The FO-4.8, Engineering Subcommittee on Passive Optical Devices and Components prepares and develops standards, specifications, and related test methods as required by industry, for fiber optic passive components. It includes, but is not limited to, standards for fiber optic switches, attenuators, branching devices, isolators and WDM devices or any device that passively manipulates optical power.

The document status within this Subcommittee includes:

188	Low Temperature	Published	1/07
189	Ozone	Published	1/07
190	Low Air Pressure (High Alt)	Published	3/07
196	PMD in SM Components	Published	1/05
197	DGD Components Diff Phase	Published? Confirm Status	6/05?
198	Pol. Sens. By Matrix Meth.	Published (Are there any Patent Letters on file?)	6/07
205	Ampl. Response Narrow Band Components	Cancelled - Confirm it was cancelled, hold # for IEC Back Adoption est 1/04	TBD
228	Group Delay and CD by Phase Shift	Published	6/07
229	High Power Characterization	Approved for Publication Pending resolution of Comments - Status?	TBD

188	Low Temperature	Published	1/07
189	Ozone	Published	1/07
190	Low Air Pressure (High Alt)	Published	3/07
196	PMD in SM Components	Published	1/05
197	DGD Components Diff Phase	Published? Confirm Status	6/05?
198	Pol. Sens. By Matrix Meth.	Published (Are there any Patent Letters on file?)	6/07
205	Ampl. Response Narrow Band Components	Cancelled - Confirm it was cancelled, hold # for IEC Back Adoption est 1/04	TBD
228	Group Delay and CD by Phase Shift	Published	6/07
229	High Power Characterization	Approved for Publication Pending resolution of Comments - Status?	TBD
Spec TIA 6200000	Generic for Branching Devices	Published	1/07
Spec TIA 620A000	Sectional for SM Br. Dev. Branching Outside Plant	Published	1/07
Spec TIA 620AA00	Blank detail for SM Br. Dev. Outside Plant	Published	1/07
SPEC	Sectional for SM FO Switches	Cancelled 3136A 6/99 - Confirm	TBD
SPEC 6300000	Generic Spec for Passive SM FO Switches	Published? Confirm status	TBD
SPEC	Blank Detail for Passive SM FO Switches	Cancelled 3395A 06/99 - Confirm	TBD

2.4.9 FO-4.9, Fiber Optic Metrology, Dennis Horwitz, Chair

Co-chairs were elected for FO-4.9 which now include Dennis Horwitz, RIFOCS, and Rex Craig, NIST. A revised title and scope was approved for FO-4.9.1.

TITLE: Working Group on Round Robin Testing and Measurement Verification

SCOPE: Coordinates, monitors, and analyzes industry round robins (interlaboratory comparisons) for validation of fiber optic test procedures and development of calibration resources. The objective of round robins is to determine measurement reproducibility and repeatability across industry, for purposes of trade and commerce.

The chair of this WG is empowered to develop and/or coordinate a round robin in support of another SC

or WG. In general, the sponsoring SC or WG shall be responsible for developing framework and details of the round robin while FO4.9.1 shall supply the additional expertise to ensure a useful and meaningful result.

A request was made of FO-4 to assign the following generic documents to FO-4.9:

- TIA-455-B (Standard Test Procedure), Incorporate “Calibration Text” and put to SP Ballot
- TIA-587 (Fiber Optic Graphic Symbols), Replace with corresponding IEC document
- EIA-440-A (Fiber Optic Terminology), Incorporate current industry comments (Dave Leight) and put to ballot

A reminder was given to all FO-4.9 members that there are currently open ballots: 2x PN ballots for TSB adoption, 1x SP ballot for IEC adoption, 10x SP Withdrawal Ballots for TIA-573XXXX

IN-PROCESS PROJECTS

PN-3-0064	TSB-141; PDL Meters: Measurement and Application Issues	A second PN ballot is authorized. Author: Rex Craig-NIST
PN-3-0065	TSB-142; Optical Return Loss Meters: Measurement and Application Issues	First PN ballot authorized, due to open shortly. Author: Lorenz Cartillieri-TEMPO
PN-3-0066	TSB-143; Fiber Optic Power Meters: Measurement and Application Issues	First PN ballot open, closes 2/10/2003. Author: Andre Girard-EXFO
SP-3-0082	TIA-455-231; FOTP-231, IEC 61315 – Calibration of Fibre Optic Power Meters	SP Adoption ballot authorized, due to open shortly. Author: Dennis Horwitz-TEMPO
Various SP-XXXX-WD	Withdraw TIA-573XXXX series for Field Portable Tools	10x SP-WD ballots authorized, due to open shortly. Author: Dennis Horwitz-TEMPO

NEW BUSINESS

Future RR	Return Loss Round Robin	Develop plan for a Return Loss RR for FO4.9.1 Author: Lorenz Cartellier/TEMPO
Future TSB	TSB-XXX, Connector Endface Inspection Instrumentation: Measurement and Application Issues	Develop draft for review at next FO4.9 meeting. Author: Harvey Stone/NOYES FIBER SYSTSEMS
Future TSB	TSB-XXX, Guidelines for Round Robins	Develop draft for review at next FO4.9.1 meeting. Author: Tim Drapela, NIST

3 NEW BUSINESS

3.1 National adoption of International Standards

The procedure noted FO-4/03-01-006 still needs work. It was agreed to write a revised procedure for the national adoption of international standards.

3.2 Supercession procedure

Over the past years the Technical Committee has undertaken a major revision of the TIA Engineering Manual. The revised TIA Engineering Manual provides the overall and ongoing methods for such Engineering Committee activities as the development, adoption and withdrawal of TIA standards. However, the TIA Engineering Manual does not currently provide methods for the documentation of supercession information in withdrawn documents, or in newly developed or adopted documents which supercede another document.

Guidance is provided on the withdrawal of TIA standards and the documentation of supercession information as follows:

When a new or newly revised TIA standard replaces part or all of another TIA standard, the Foreword of the new or newly revised standard shall clearly indicate the extent of the supercession. Example statements that may be used are:

- “This document supercedes TIA-XXX, TIA-YYY and TIA-ZZZ in their entirety.”
- “This document supercedes TIA-XXX in its entirety.”
- “This document supercedes Method C of TIA-XXXX.”

When a TIA standard is withdrawn, the withdrawal shall be accompanied by the publication of a notification that clearly indicates the extent to which the document is superceded by other documents. Any sales of the withdrawn document by TIA or its distributors in paper or electronic form shall include the appropriate notification. Example statements that may be used are:

- “This standard is withdrawn without replacement.”
- “This standard is withdrawn, and is superceded by TIA-XXX.”
- “This standard is withdrawn, and is superceded by Method C of TIA-XXX.”
- “This standard is withdrawn. Method A is superceded by Method C of TIA-XXX. Methods B and C are withdrawn without replacement.”
- “This standard is withdrawn. Method A is superceded by TIA-XXX. Methods B and C are withdrawn without replacement.”

When the standards formulating group is submitting the forms for withdrawal of existing published standards the committee notifies the TIA Standards Secretariat that the document(s) is superceded by another document. The standards formulating group will submit the notification text for inclusion in the withdrawal ballot. In cases where no supercession information is conveyed to the Standards Secretariat, the Secretariat will include language which conveys that the standard is withdrawn without replacement.

In the case of revision of an existing document, these notifications are not required.

3.3 Meeting survey

Steve Swanson presented results of a survey conducted to learn more about member's preferences.

3.4 Action items derived from this meeting

Item #	Action:	Resp:	Status:
2003-01-001	Develop a recommendation for FO-2/6 on reliability	P. Su	
2003-01-002	Provide updated roster lists consistent with FO-4 records	S. Montgomery	
2003-01-003	Approve and distribute Advisory Note on Supercession of FO-4 standards	S. Montgomery	
2003-01-004	Add new WG, FO-4.2.2 on Tri-Speed Ethernet to June meeting schedule	S. Swanson	Complete
2003-01-005	Develop national adoption procedure, accounting for comments provided in Tampa	S. Montgomery	

4 NEXT MEETING, INTERIM MEETINGS, FUTURE MEETINGS

4.1 Next meeting

June 23-26, 2003

The Delta Pinnacle Hotel
1128 West Hastings Street
Vancouver, B.C. CANADA V6E 4R5(604)684-1128
(604)298-1128-Fax
<http://www.deltahotels.com/main.php>
Rate: \$201.50 Canadian Dollars; Approximately \$130.00 US
Cut-off Date: Friday, May 23, 2003

4.2 Future meetings

Future meeting venues were selected at the opening plenary as follows:

- June 23-27, 2003 - Vancouver
- January 26-30, 2004 - Phoenix area
- June 14-18, 2004 - Quebec City

5 ADJOURNMENT

The opening plenary meeting adjourned at 12pm AM on January 13, 2002. The closing plenary meeting adjourned at 5:30 PM on January 15, 2002.

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

Steve Swanson, FO-4 Chair

Bob Jensen, FO-4 Secretary