

**Telecommunications Industry Association
FO-2 Committee on Optical Communication Systems
FO-6 Committee on Fiber Optics (meeting No. 49)**

June 28, 2001
Sheraton South Portland
363 Maine Hall Road, South
Portland, ME 04106

Next Meeting: **Kauai, Hawaii Jan 21-24, 2002**

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1 Introductions

The 5th joint meeting of the FO-2/FO-6 Committees was called to order at 1:38 P.M. on Thursday June 28, 2001 with Steven Swanson (FO-6 Chair) presiding. A total of 24 attendees, including 8 voting members (or their representatives) and 16 others were present. A quorum for the combined Committees was established. The meeting conducted a round of self-introductions.

	Company	E-Mail	Telephone
Chairs:			
Felix Kapron	Corning Inc.	kapronfp@corning.com	607-974-7156
Steven Swanson	Corning Inc.	swansonse@corning.com	607-974-4252
Voting Members Companies present:			
Ron Bossard	3M	rgbossard@mmm.com	512-984-3782
Gair Brown	NSWC DD	gdbrown@nswc.navy.mil	540-653-1579
Mike Kinard	Lucent Technologies	mkinard@lucent.com	770-798-2109
Osman Gebizlioglu	Telcordia Technologies	ogebizli@telcordia.com	973-829-4956
Andre Girard	EXFO	agirard@exfo.com	418-683-0211
Tom Hanson	Corning Inc.	hansonta@corning.com	607-974-4530
Arthur Hudson	Defense Supply Center	arthur_hudson@dsc.dla.mil	614-692-0657
Dave Roland	Alcatel	Dave.roland@cable.alcatel.com	828-459-8775
Voting Members Companies Not present:			
Kenneth Bow	DOW	kebow@dow.com	517-638-3759
Rex Craig	NIST	rcraig@boulder.nist.gov	303-497-3359
Dennis Horwitz	RIFOCS	dennis.horwitz@rifocs.com	805-389-9868
Other Participants Present:			
Judith Andersen	TIA	jandersen@tia.eia.org	703-907-7551
Anne Marie Auchu	Corning Inc.	auchuam@corning.com	607-974-7307
Gair Brown	NSWCDD	Browngd@nswc.navy.mil	540-653-1579
M. Patrick Dugan	JDS Uniphase	Patrick.dugan@us.jdsuniphase.com	732-380-3202
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Bob Jensen	Fluke Networks	Robert.jensen@flukenetworks.com	512-514-7760
Rob Johnson	Corning Incorporated	johnsonr@corning.com	607-974-7359
David Leight	DSCC-VAT	david_leight@dsc.dla.mil	614-692-0521
Eric Loytty	Corning Cable Systems	eric.loytty@corning.com	828-327-5585
David Markowitz	Alcoa Fujikura	David.markowitz@alcoa.com	864-486-7010
Michael Montgomery	GN Nettest (Oregon) Inc	michael.montgomery@nettest.com	503-526-4655
Bruce Netherton	Spectra-Physics	Bnetherton@splasers.com	530-532-6185
Dan Roberts	JDS Uniphase	Daniel.roberts@usjdsunph.com	
Greg Smith	Corning Inc.	smithge@corning.com	607-974-7134
Pin Su	Chorum	psu@chorumtech.com	214-570-3558
Billie Zidek-Connor	TIA	bzidekco@tia.eia.org	703-907-7706

FO-2/FO-6 Member/Alternate) attendance history:

Company /Affiliation	Member /Alternate	June 1998	Jan. 1999	June 1999	Jan. 2000	June 2000	Jan. 2001	June. 2001
3M	Ron Bossard	X	X	X	X	X		X
Alcatel	Dan Fletcher	X	X	X	X		X	X
Corning	Thomas Hanson	X	X	X	X	X	X	X
DOW	Kenneth Bow		X			X	X	
DS CC – DoD	Art Hudson	X	X	X	X	X	X	X
EXFO	Andre Girard	X	X	X	X	X	X	X
Lucent	Allen Cherin		X	X	X	X	X	X
NIST	Rex Craig		X	X	X	X	X	
NSWC, Navy	Gair Brown	X				X		X
RIFOCS	Dennis Horwitz		X	X	X	X	X	
Telcordia	Osman Gebizlioglu	X	X	X	X	X		X

Note: Companies absent from three consecutive meetings will be removed from the voting member list and placed on the nonvoting member list. Please make sure attendance sheets are signed. The chairman 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 a quorum at our meetings.

If any company would like to be a voting member, please contact Anne Marie Auchu at auchuam@corning.com.

2 Chairpersons' Opening Remarks

FO-6 chairperson, Steve Swanson congratulated the 130 attendees on a very productive meeting. He then gave a brief overview of the topics covered in the chairs meeting on Monday night.

Usage of the TIA email reflectors was encouraged.

Subscribing (to join a reflector e-mail list)

Send an e-mail from the address that you want on the reflector to join-listname@tiacomm.org. Where: **listname** = the name of the reflector list. (e.g., join-fo61@tiacomm.org)

Send an e-mail to the reflector e-mail list, use the address of listname@tiacomm.org (e.g., fo61@tiacomm.org)

- Usage of the TIA FTP sites was also encouraged. For documents over 1.5 meg, the document can be posted to the FTP site.

When using FTP client software, use the following to login (use all lower case) the host name or address: **ftp.tiaonline.org**

User ID: fo61

Password: 1fo61

Using your WEB browser:

Start your web browser

Enter URL <http://ftp.tiaonline.org> (This will take you directly to the TIA FTP site)

Choose the FO2 or FO6 committee (this is the main directory for contributions) and enter the user name and password (all lower case).

Updates on the following items were given:

Current/Future Schedule

The current schedule worked with only minor changes.

The schedule for January will incorporate an opening plenary, a closing plenary and a time block dedicated to the US TAG meetings.

IEC adoptions

Nine IEC documents have been adopted with seven currently in process.

Future meeting sites:

A new method of choosing meeting sites has been proposed. Three sites will be chosen at the chairs meeting for the meeting two years out. The meeting planner will provide to the committee the options for each site at the following meeting. The decision will be made at the FO2/FO6 meeting. (Example Three possible meeting locations chosen at the June 2001 meeting for June 2003 meeting; the meeting planner will provide a proposal for accommodations for those locations at the January 2002 meeting. The final decision for the June 2003 site will be made at the January 2002 opening plenary FO2/FO6 meeting).

June 2002

Kiawah Island, South Carolina

January 2003 – Fort Myers

June 2004

Three possible locations: Juneau, Alaska; Quebec City, Quebec; Portland, Oregon.

Details to follow.

- Organizational Changes

FO-2.1.1 Optically Amplified Devices, Subsystems, and Systems has been renamed to FO-2.7, with the same title and scope. This avoids the occasional confusion encountered by FO-2.1.1 as a three digit Working Group with formulating group authority. Subcommittee FO-2.1 agreed to the recommendation, as did FO-2.

FO-6.3.5 has requested a change in working group chair. Rob Johnson (Corning Incorporated) has been recommended to replace Steve Swanson. This was approved at the FO-6.3 meeting.

3 Review / approval of agenda

The proposed agenda was approved with no corrections, changes or comments.

4 Approval of Previous Meeting Report

The previous meeting report from Palm Springs, California, January 11, 2001 was reviewed. Felix Kapron moved to accept the meeting minutes as written, with a second by Harold Glick.

5 Correspondence

No new correspondence was received.

6 TIA Update, by - Susan Hoyler / Billie Zidek-Conner

- Chair elections
All even numbered sub-committee and committee chair require election January 2002 – Committees affected are FO-2, FO-2.2, FO-2.6, FO-6, FO-6.6
All odd numbered sub-committee and committee chair require election January 2003 – Committees affected are FO-2.1, FO-2.3, FO-2.7, FO-6.1, FO-6.3, FO-6.7, FO-6.9.
- New Engineering Manual -
The current Engineering Manual is now available
at http://www.tiaonline.org/standards/sfg/engineering_manual.cfm.
- Engineering Style Manual -
The style guide is currently in the process of being revised. A draft edition is expected in early October. Please review the document and provide comments to the TIA Secretariat.

7 FO-2 Subcommittee Chairman Reports

FO-2.1 Single-Mode Systems, by Allen Cherin

- **Report of FO-2.1.1, Optically Amplified Systems, Subsystems, and Devices**

Jim Matthews of Corning reported on meetings, the first in Boulder CO in March in conjunction with T1X1.5. Three contributions to the ITU Q.16 meeting concerning G.vsr on very-short reach interfaces were improved upon. These are for interoffice applications at 600 m and 2 km, and 10G and 40G.

At the second meeting here on June 25, with a teleconference to T1X1.5 in Orlando, FL, this topic was continued, but no additional contributions resulted. Draft G.dsn on optical systems engineering was also reviewed.

G.671 on components and subsystems was reviewed with respect to restructuring, parameter specified by application, PMD vs DGD, the addition of a dynamic spectral equalizer, and affirmation of 3 WDM classes: wideband, course, and dense.

It was noted that the first back-adoption of IEC standards occurred into FOTPs 208 to 216 on optical amplifier measurements.

NIST spoke on artifacts for Raman amplifiers concerning gain and optical noise.

Finally, Andre Girard of EXFO showed a high-resolution OFDR trace of optical power versus length along the erbium-doped fiber. This was shown for several pump powers.

- **Report of FO-2.1.2, Single-Mode Transmission Design**

Gair Brown of the Navy said that no additional work had been done by correspondence

- **ITU Q.16 and IEC SC86C WG3**

Felix Kapron and Diane Williams of Corning gave ITU and IEC reports covered elsewhere in the FO-2, FO-6 agenda.

- **IEC SC86C WG1 on Fibre Optic Systems – March Anaheim Meeting**

Allen Cherin and Felix Kapron reviewed the current status (details not given here) of a number of documents:

- 61280-1-4 on collection and reduction of two-dimensional nearfield data for MMF laser transmitters
- 61280-2-8 on low BER measurements
- 61280-2-9 on OSNR
- 61280-4-1 on MMF cable plant attenuation
- 61280-4-3 on PMD system measurements
- 61282-3 on PMD system guidelines
- 61282-4 on nonlinear effects
- 61282-5 on dispersion accommodation
- 61282-6 on skew design in parallel interconnections
- 61282-2 on multimode Gb/s systems
- 61282-7 on statistical chromatic dispersion

- **FOTP status**
There were no reports on accelerated BER and Q-factor by the sinusoidal method (FOTP-215) and by the variable threshold method (FOTP-216). The equivalent to these is progressing in the IEC and can be adopted by TIA, so these FOTPs are currently less urgent. There was no report on OFSTP-5 on data analysis of BER.
- **ITU June Meetings**
Felix Kapron outlined the progress in G.dsn on optical system design guidelines. This was proposed last October and will be discussed further this October. G.dsn and Q.17 were covered in the FO-2.1.1 report above.
- **Report of the IEC 86C/WG3 on OAs**
Diane Williams of Corning gave highlights on the March meeting:
 - The reliability standard for OAs has just completed CDV ballot.
 - A performance standard for OAs is under study.
 - A technical report on amplifier classification has completed NWIP
 - The next meeting is in October in Florence, Italy.
- **Measurement of RZ Waveforms**
Greg LeCheminant of Agilent showed compared logical "1" and "0" patterns for common NRZ and increasingly used RZ signals. RZ requires more signal bandwidth, a different definition of extinction ratio, and a new parameter called contrast ratio. The topic of jitter differs since there are no crossing points in the eye diagram, and the eye mask. It was decided that he would prepare an ITU draft contribution for discussion at the next FO-2.1.1 meeting.
- **PMD Coordination in TC86**
Arthur Barlow presented tables e-mailed earlier that showed the status of PMD documents in SCs 86A, B, C. These listed PMD test method characteristics and which methods can be used to measure fiber/cable, passive optical components, optical amplifiers, and optical links.
- **PMD Emulators**
Jay Damask of YAFO Networks had given a presentation in FO-6.6.5 concerning problems in measuring the effectiveness of PMD compensators. This was deemed more appropriate for FO-2.1. PMDCs are located at receivers in a DWDM system, and he outlined several types and methods of testing them. He showed the effects of 1st and 2nd order PMD on the system eye diagram. He then described a programmable PMD emulator that consisted of 12 birefringent crystal elements in series that could be individually rotated to produce a variety of DGD and PSP values. This can be used to evaluate the effectiveness a PMDC in a system in terms of BER and power penalty.
A task group consisting of Damask, Girard, Hanson, Hernday, and NIST was formed to prepare a document on the properties of a PMD emulator. A second document for such testing to be discussed at the next meeting.

FO-2.2 Digital Multimode Systems by Gair Brown

- **High Performance Parallel Interface – 6400 Mbit/sec Optical Specification**
G. Brown noted that comments on the draft HPPI specification had been developed and circulated on the FO 2.2 reflector for comment. Mr. Brown asked the subcommittee for opinions on whether the comments should be sent to the HPPI committee at this time. Since considerable time has passed since the comments were circulated to the subcommittee for review, Mr. Brown was asked to repost the comments on the reflector for all to review.
- **IEEE 802.3 Liaison Report**
P. Kolesar (Lucent) provided an update on the IEEE 802.3ae activity on 10G Ethernet. The standard development process is rapidly moving towards completion. Technical additions to the standard are no longer allowed. New drafts for comment will be released in July and November with the standard expected to achieve final approval in March of next year.
- **Report of Working Group FO 2.2.1**
M. Hackert (Corning) presented the summary of the work of FO 2.2.1 since January. In previous reporting periods, the working group had performed large-scale experiments to validate the concept of 10-gigabit transmission over selected 50-micron multimode fibers and to validate 10-gigabit transmission models. Based on those earlier efforts, the group concentrated on transmission modeling efforts and the effects of optical source and optical fiber specifications on modeled 10-gigabit link performance. Over 40,000 different link configurations have been modeled and the results analyzed. The results of these efforts are specification limits for 10-gigabit optical source encircled flux and the optical fiber bandwidth and differential mode delay (DMD). The group expects to wrap up the current efforts by the January meeting. These efforts have been inherently tied to the development schedule for 10-gigabit Ethernet, which is near the end of its development schedule. The working group members have performed an extremely large amount of work during the last two years in order to support the IEEE 802.3 10-gigabit Ethernet development schedule. Their dedication, and their thorough and rigorous approach to this difficult project are commended.
- **TIA-785** 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)

J. Struhar (Lucent) provided an overview presentation on the motivation for and the history of the TIA-785 standard. The standard was developed to support the low cost fiber to the desk and fiber to the home applications at the 100 Mbps data rate. Initial installations of pre-standard products and inter-vendor interoperability demonstrations have occurred.

G. Brown reported that the default ballot for SP-4360 resulted in no comments from TIA members and 1 editorial comment from the ANSI public review.
- **TIA-785 New Issues**
W. Kilian (Optek) brought forward two issues/concerns related to the published TIA-785 document. The first issue relates to the minimum receiver bandwidth specification included in the receiver specifications in the last balloted document draft. Questions were raised as to whether the specification is overly conservative and redundant to other specifications within the document (e.g. the stressed receive sensitivity specification). The minimum receiver bandwidth specification was added to address member concerns that the predicted

maximum link ISI penalty is too high if lower bandwidth receivers were utilized. The second issue relates to the value specified in Annex A for the Bessel-Thompson filter used in the test set up. There appears to be an editorial error in the filter frequency specified. Mr. Kilian was asked to establish a task force to review the issues and provide recommendations back to the subcommittee at the next meeting.

- **FO 2.2 Document Status**

TIA-626 – Should be due for a 5-year review soon. G. Brown to check with TIA on review schedule.

TIA-785 – Recently published. 5-year review to occur in 2006.

FO-2.3 Opto-Electro-optic Sources, Detectors and Devices, by Bob Gallenberger

- **OFSTP/FOTP on the Measurement of Digital Receiver Eye Width**

This procedure had been previously identified as a candidate procedure for standardization within FO 2.3 and a document author identified. The development effort has not progressed and the document author was not in attendance. Upon reconsideration, the subcommittee decided that there is no clear need for a TIA test procedure for this attribute. The OFSTP/FOTP development effort will be terminated until a clear need for the procedure is identified.

- **FOTP on Measurement of Frequency Response of Digital Receivers**

B. Throm (NSWC DD) distributed a draft version of a new FOTP on the Measurement of Frequency Response of Digital Receivers. The procedure is based on a rough measurement procedure included in the IEEE 802.3 standard. Mr. Throm asked subcommittee members to review the draft procedure and provide comments back to him. There was substantial discussion on the validity of the measurement method. Mr. Throm will work with interested subcommittee members to address the known issues with the measurement method.

- **FOTP-203 “Launched Power Distribution Measurement Procedure for Graded-Index Multimode Fiber Transmitters”**

M. Hackert (Corning) reported that the comments received on the last ballot of FOTP-203 were editorial. The document author, J. Gwinn (Raytheon) addressed these comments, and the document was forwarded to TSSC. TIA has published the document and it is available for purchase from Global Engineering. Mr. Hackert recognized the efforts of Mr. Gwinn who was attending the TIA meetings for the first time. The subcommittee is grateful for his hard work in serving as author of this document.

- **OFSTP/FOTP on the Measurement of Mode Partition Noise K Factor**

This procedure was identified as a candidate procedure for standardization within FO 2.3 at the last meeting. However, there were no advocates for the procedure at this meeting. A FOTP development effort will not be started until an advocate for the procedure development and an author can be identified.

- **FOTP-142 (PN-4102) “Modal Noise Power Penalty for Laser Transmitters”**

G. Brown (NSWC) presented preliminary results from the FOTP-142 set up that has been implemented at NSWC. The data presented related to the noise probability distributions generated by the mode selective loss artifact with and without the fiber shaker mechanism engaged. Non-gaussian noise distributions were observed without the fiber shaker

mechanism engaged, that correlates with previously published results by IBM. With the shaker mechanism engaged, the probability distributions appeared to be strongly gaussian. Additional data analysis will be conducted to better characterize the noise probability distributions. Of particular interest, Mr. Brown noted that the RMS width of the noise distributions without the shaker engaged were often larger than the RMS width of the noise distribution with the shaker engaged. This partially substantiates the assertion that the results of the FOTP-142 method (with the shaker engaged) do not represent worst case noise distributions or power penalties. Additional characterizations will be performed to include the effects of thermal cycling on the optical source and the correlation of the noise measurements with Bit Error Rate (BER) measurements.

This project has been ongoing for several years within TIA. Mr. Brown was asked to resolve the remaining technical issues within the document and proceed to either a PN or SP ballot before the January meeting. A task group will be convened to resolve the remaining technical issues within the document.

FO-2.6 Reliability of Fiber Optic Systems and Active Optical Components, by Pin Su

- **FOTP-130**

FOTP 130 – Mike Musky (Lucent) used process recommended by Billie Zidek-Connor and noted document should be on final stages or published by now. SC wishes to restate for the record that it authorizes TSSC review and publication if required for this document. (Note: It was confirmed in the Committee meeting 2 and 6 that FOTP-130 was published on 3/13/01.)

- **Laser Diode Reliability Requirement Comparison between GR-468 vs. IEC 61751**

Mike Musky (Lucent) provided a comparison of GR-468 Issue 1 and IEC 61751 First Edition on Laser modules. (FO26-2001-06-TD03)

- Mike noted the IEC document is confusing due to leaps from one to another standard document. Chip level information is mixed with packaged laser Diode. Its requirements are different from GR-468 that is presently commonly used. Difficult to make GR go away unless international is changed.
- Musky recommended creation of TIA standard since IEC standard is not acceptable as presently written. Once a TIA Standard is published, then a proposal could be advanced to the IEC.
- MIL-STD-883 is also used and valued. It was recognized that MIL-Std-883 is huge, but it is used by the fiber optics industry (even it was developed for electronics components).

Action: It will be determined whether the creation of TIA version of GR-468 will be appropriate or necessary.

Note: It was recommended in the Committee meeting 2 and 6 that a contribution be presented to IEC before IEC 61751 revision which is scheduled to be next year.

- **Discussion of Optical Switch Requirements, GR-1073**

Mike Musky noted GR-1073, published early this year, is already outdated. With MEMS and sub-systems, additional requirements like earthquake and EMC. Musky proposed this group should go forward with module reliability requirements.

Jim Matthews pointed out the IEC TC86 Dynamic Module work and the need for this type work. Mike pointed out that things like firmware are not addressed. Mike proposed that we go forward with a general document.

In discussion, it was recognized that classic estimates of reliability and FIT have extremely high uncertainty levels to the numbers. Specific testing will be done to devices like MEMS switch modules and GR-1073 is being used, probably inappropriately, but out of convenience by customers.

- **Reliability of Integrated Modules**

Pin Su pointed out a description of the levels of application/assembly (for reliability consideration) is important. Products of integrated modules are not basic components, but not a full system level. These types of devices fall in between the two. It was pointed out that a clear definition of “basic component” needed to be established. The basic components are the building blocks of unit, subsystems, and systems. When we go up in the assembly levels, the reliability tests and qualification tests will be reduced in sample sizes and testing duration. This could be the case for higher integrated modules. There may not be any tests required for systems. Their reliability will be primarily dependent on the reliability modeling and calculations, instead of relying on testing.

GR-1312 was mentioned as a model for reliability considerations establishment. There are 3 sets of reliability requirements for 3 different assembly levels of an optical fiber amplifier.

Action: Musky will draft a document with the objective of replacing GR-1073. The group will use the e-mail exploder to share and develop the draft.

- **Discussions on industry standards and future activity direction**

Some topics discussed in this meeting were spread in other more specific discussions in other meetings. These include mutual adoption of standards with IEC, trend of higher integrated optical modules, MIL-STD, Telcordia GRs, etc.

FO 6.3.5 initiated a project proposal on “high power testing” was shared with attendants.

Members expressed interest and wanted to be updated the progress.

8 FO-6 Subcommittee Chairman Reports

FO-6.1 Fiber Optic Test, Measurement and Inspection Instrumentation, by Dennis Horwitz

Finished Projects

None at this time

In-Process Projects

- (TSB-XXX) Fiber Optic Power Meters: Measurement and Application Issues.

Chair will request a Project Number. Author submitted revised document and will accept all comments until August 31. Comments will be incorporated and the document submitted for PN ballot by September 15 in order to complete voting process by January-2002 meeting.
Author: Andre Girard-EXFO

- (TSB-XXX) Optical Return Loss Meters: Measurement and Application Issues.
Author to submit open questions to FO6.1 reflector. Comments will be incorporated into a new draft by July 31 and submitted to FO6.1 reflector for internal comments due by August 31. The draft will be revised and submitted to FO6.1 reflector by September 30. Additional internal comments to be incorporated for final discussion at January-2002 meeting.
Author: Lorenz Cartellieri - RIFOCS
- (TSB-XXX) PDL Meters: Measurement and Application Issues
Author to incorporate prior comments and submit to FO6.1 reflector by July 31 for additional internal comments by August 31. Then revise draft and submit to FO6.1 reflector by September 30 for additional internal comments to be incorporated for pre-PN ballot final discussion at January-2002 meeting.
Author: Rex Craig - NIST
- (FOTP-226) SP-3-0032 IEC 61746: OTDR Calibration Ed.1 2001
When IEC e-copy received, will submit to ANSI/TIA SP adoption ballot. SP Ballot Registration Is Open Through 8/3/2001.
Author: Dennis Horwitz-RIFOCS
- (FOTP-XXX) Visual Examination of Connectorized Endfaces
Effort cancelled as proposed authors discovered parallel effort in SC86B WG4 chaired by Daniel Ernst-DIAMOND SA. Will directly support the IEC effort and later endorse TIA back-adoption.
Authors: Andy Devine/Erich Rosenast -RIFOCS
- (FOTP-224) SP-3-0033 IEC 61744: Chromatic Dispersion Cal Ed.1
When IEC e-copy received, will submit to ANSI/TIA SP adoption ballot. SP Ballot Registration Is Open Through 8/3/2001. Author: Dennis Horwitz - RIFOCS
- (FOTP-225) SP-3-0034 IEC 61745: Optical Fiber Geometry Cal Ed.1
When IEC e-copy received, will submit to ANSI/TIA SP adoption ballot. SP Ballot Registration Is Open Through 8/3/2001.
Author: Dennis Horwitz - RIFOCS
- TIA-573000 series for Field Portable Tools
Due to lack of use or need by industry, PNs will be requested to withdraw these outdated TIA standards. Agreed to cancel SP-4295 and SP-4297, which were in READY TO PUBLISH stage.
Author: Dennis Horwitz - RIFOCS

New Business

- FYI NRL Purchase Specifications
Harold Glick reported that NOSC identified purchase specifications being developed by NRL for Optical Loss Test Set and Optical Return Loss Meter that interested parties should review and comment

- Polarization Modal Dispersion Meters: M & A Issues
Andre Girard -EXFO volunteered to develop and present draft TSB at January-2002 meeting.
- Fiber Optic Test Sources: M & A Issues
Further discussion at June-2001 meeting.
- Optical Spectrum Analyzers: M & A Issues.
Further discussion at June-2001 meeting.

FO6.1.10 Metrology & Calibration Working Group

- IEC 61315 Fibre-Optic Power Meter Calibration Ed.2 IEC TC86 WG4 CD Stage.
Author: Marc Breton - EXFO
- (IEC-XXX) Reference Receiver Calibration Ed.1 IEC TC86 WG4 Proposal Stage.
Author: Paul Hale - NIST
- (IEC-XXX) Return Loss Meter Calibration Ed.1 IEC TC86 WG4 Proposal stage.
Author: Dennis Horwitz - RIFOCS

Liaison Projects (Outside of FO6.1.X or IEC TC86 WG4)

- (TSB-XXX) Fiber Optic Certification Tools: Measurement and Application Issues TR42.8 initiated a Fiber Optic Link Certification Study Group under Dennis Horwitz at June-2001 meeting in Providence-RI. Will keep FO6.1 apprised of status of the S/G. First task is a survey of BICSI membership to determine measurement needs.
Chair: Dennis Horwitz - RIFOCS
- Revision of TSM-6 Author's Guide (Redirect as part of revision of TIA/EIA-455)
FO6 This Item Has Been Carried Over For Nearly 2 Years Regarding Upgraded Text Detailing Need To Address Calibrator/Maintenance Requirements In FOTP Development. Discussion at the Joint FO2/FO6 meeting concluded that this would be best globally addressed in the revision of the "mother" document, TIA/EIA-455, which will go forth under the direction of Tom Hanson/CORNING. We will have a chance to review, comment and vote as this revision works its way through the system.

Note: There is a Draft Rewrite of the Engineering Style Manual (August 17, 2001) which may alleviate need.

FO-6.3 Fiber Optic Interconnecting Devices and Passive Products, by Tom Ball

FO-6.3.1 Adhesives Reliability, by Dr. Osman S. Gebizlioglu, Chairman

- Title and scope revision: revisions were approved by FO-6.3 at the January 2001 meeting. Update of TIA records is in progress. FO-6.3.1 will inform FO-6.3 of the completion.
- A new Project for a TSB was initiated on Adhesives integrity in interconnecting devices.

- There was a presentation by Brad Rix of TRI/Austin on the development of fast room temperature curable adhesives.

FO-6.3.3 Ferrule/Fiber Geometrical Measurements, by Costas Saravanos, Chairman.

- FOTP-218 Single Fiber Ferrule Connector End-Face Geometry was submitted to TIA for balloting process.
- The WG reported latest round robin results on FOTP-219 on Multi-Fiber Connector End-Face Geometry. The FOTP will be balloted in August 2001.
- A new draft FOTP on Fiber Optic End Face Quality Assessment was circulated. The following issues were addressed: automated evaluation of scratches, pits and other visual defects on end face of connectors.
- A new action item was approved to conduct an initial study (in form of a round robin) as a first assessment of industry capabilities. Many volunteered for participation in this initial study.

FO-6.3.4 FO Connector Intermateability Standards, by William Wood, Chairman.

FO-6.3 approved the following:

- A SP ballot to revise FOCIS 2 (BFOC).
- FOCIS 5 (MTP/MPO) goes to TSSC review, on receipt of a blue card indicating resolution of the negative ballot.
- FOCIS 10A (LC) goes to TSSC balloting upon successful completion of SP ballot.
- A new SP ballot leading to ANSI standard on FOCIS 14 (SMC).
- FOCIS 13 (LX.5) goes to TSSC balloting upon successful completion of the SP ballot.
- A SP ballot on FOCIS 7 (SG) and to move it to TSSC ballot upon successful completion of the ballot

FO-6.3.5 Passive Fiber Optic Devices, by Steven Swanson, Chairman.

New action items approved by FO-6.3:

- A default ballot on FOTP-156
- PN ballot on 2 new FOTPs: Relative Group Delay on Chromatic Dispersion; and High Power Characterization
- A default ballot on the Generic Specification on FO Switches and publication upon resolution of comments on SP-4758
- Publication authorization on FOTP-188, Low-Temperature Testing of FO Components.
- Request to appoint a new chair. Rob Johnson (Corning) was proposed and appointed.

FO-6.3.6 Splices and Enclosures, by Ron Bossard, Chairman.

New action items from the FO-6.3 meeting:

Change the SP to a PN ballot on PN 3587 (FOTP-136 on Chemical immersion) for a TIA standard.

FO-6.3.8 Passive Component Reliability, by Dr. Bruce LeFevre, Chairman.

New action item approved from the present FO-6.3 meeting:

Approval for PN to circulate IEC Reliability Standard Part 7 (Life Stress Modeling) and Part 9 (Reliability Qualification Standard) once published as TIA standards.

FO-6.3.10 Connector Specifications, by Doug Atwill Chairman.

New action items from the present FO-6.3 meeting:

- A motion was approved to create a TIA Performance Standard that mirrors the IEC single mode connector standard for uncontrolled environments but will be modified to be consistent with domestic industry standards (GR-326). A team was created to draft the performance standard.
- A team was created to define the end face parameters to put in the TSB on MM connectors used in controlled environment following a liaison letter request from TR-42.8.
- The WG chair reported asking if TR-42.8 is still interested in work on Overfilled vs. Restricted launch conditions. He reported that an analysis of the VSCEL launch condition found that it varied from severely restricted to overfilled condition. No representative condition could be defined. As a result, TIA 586B.3 was published using the standard mandrel wrap conditions defined in FOTP-34 and 171. TR42.8 voted to withdraw the request. This will be removed from the WG action item list. One member (Dennis Horwitz) reported that this item might resurface with his work on connector certification.
- Progress Report on Wet-mateable Connectors for ITU-T SG15, Eric Bobinsky, Ocean Design, Inc. This project was cancelled due to lack of interest for going forward at this time.

Other Business

- **Informal report TelcordiaGR report, Osman**
 - Two GRs were reissued:
GR-1073-CORE, Jan 2001, Optical switches
GR-1209-CORE, March 2001, Fiber Optic Branching Components
 - GR in planned revisions:
Calls for participation and funding in July 2001:
GR-1312-CORE, Fiber Optic Amplifiers
GR-468-CORE, Optoelectronic devices

Calls for participation and funding in August:
GR-20-CORE, optical fiber and fiber optic cable

GR-409-CORE, premises fiber optic cable
GR-1435-CORE, multifiber connectors

FO-6.6 Optical Fiber, by Greg Smith

WG FO-6.6.1, Round Robin Testing – Tim Drapela

- No actions required from FO-6.6
- Multifiber endface geometry round robin
 - Round Robin on multifiber connector endface geometry going on in FO-6.3.3.
 - Goal: dry physical contact between up to 12 fibers per connector.
 - Looking at industry-standard parts; some multimode; some angled.
 - Participants: 3 main instrument manufacturers.
 - Measurements of fiber height, angle, and core-dip; FOTP in late-draft stage.
 - Some systematic differences, particularly for multimode and angled parts.
- ITU Nonlinear coefficient – round robin
 - Japanese measurements done; presented here; North American measurements just getting underway.
- ITU Effective Area – round robin
 - Plan: to use fibers from old TIA round robin as part of sample set.
- Round Robin potential of ITM-22 (Raman Gain) Task Group to begin, Jim Refi to coordinate
- Fibre Curl Possible Round Robin –interest inquiry tabled until January 2002

WG FO-6.6.5, Single-Mode Fibers - F. Kapron

- Bill Gardner of Lucent reported on progress at the February 2000 meeting. There was completion of spectral bands (in conjunction with Q.16 on systems and Q.17 on components), CWDM, round-robins on nonlinear parameters. He also had two contributions that will be submitted to Q.15.
 - One was a proposed US contribution on the restructuring of ITU G.650 on parameter definitions and test methods for SM fibers; there will be extensive reference to IEC test methods that would shorten the document.
 - The other company contribution reported on attenuation measurements on installed links that supported the typical link values of 0.28 dB/km for the C-band and 0.35 dB/km for the L-band.
- Tom Hanson of Corning Inc. mentioned that the PMD and perhaps CD specifications will have to be tightened for 40 Gb/s systems, including both NRZ and RZ.
- Polarization-Mode Dispersion
 - Jay Damask of YAFO Networks gave a presentation on problems in measuring the effectiveness of PMD compensators located at receivers in a DWDM system.

WG FO-6.6.7, Fiber Coatings - E. Urruti

- **Projects:**
 - FOTP-178 Measurements of Strip Force for Mechanically Removing Coatings from Optical Fibers; Comparison of FOTP-178 to IEC 60793-1-32 occurred. Proposal to back-adopt IEC document made.
 - TSB-62-8 Procedure for Measuring the Amount of Extractable Material in Coatings Applied to Optical Rescission ballot complete. Document withdrawn.
 - TSB-12 Microbend - Update on resolution of negative ballot. Comment resolution completed at this meeting.

Modulus Testing Industries different methodologies :
Edward Fewkes (Corning)
Gilberto Camillo (Alcatel)

WG FO-6.6.8, Long-Term Fiber Reliability – H. Chandan

- **Projects**

- Fiber break source analysis was discussed briefly. Alcatel (Gilbert Camilo) raised the question of strain rate and humidity on mirror size.

Discussions

- IEC 86A WG meeting (Tom Hanson)
- technical specification for environmental requirements
- Europeans proposal on measurements (strip force average only 1 to 5N). The Japanese want peaks included (1-9N at 23°C).
- Nuclear radiation on fiber reliability. Harish and Marcos agreed to research and bring more updated information at the next meeting.
- Reliability impact of high power in hermetic fibers that may have holes in the hermetic layer; holes punched through by electrostatic discharge.
- Gilberto Camilo of Alcatel gave one presentations: “Evolution of Fiber Strength after Draw” This sparked some more discussion on the impact of screening on dynamic fatigue and the effect of cure on strength.

WG FO-6.6.9, International Stds. Co-ordination - A. Cherin

Environmental Test- Strip Force and pre-post aging strength requirements

IEC SC86A position paper on environmental test requirements will be prepared for Florence IEC SC86A WG1 meeting

ITU-IEC Harmonization issues were discussed by W.B. Gardner (Lucent)- white paper on L-band attenuation in installed lengths will be introduced in ITU SG15/Q15.

ITU G.650 (Measurement Tests) restructuring discussed and will reference IEC test procedures. White paper for October ITU meeting was developed

WG FO-6.6.10, LAN Component Characterization – John Ritger

A review of various FOTP’s status was made with resulting actions authorized.

Summary of Document Authorizations given by FO-6.6 at the June 2001 meeting

Publication authorization:

ITM-23 Measurement of the Nonlinear Coefficient

ITM-22 Raman Gain

TSB-62-12 Microbend

New Project / PN - Ballot (Non-ANSI)

MMA Method - Muller Matrix Method (TIA non-ANSI FOTP on the MMA that would include an annex on the mathematical equivalence)

Detail Specification for 850 nm Laser Optimized Multimode Optical Fiber

PN - Ballot (Letter) / Authorization to Publish with resolution of any comments

TSB-62-21 Fiber Pullout

FOTP-44B Montgomery Refractive Index. Profile - Refracted Ray (Montgomery)

FOTP-220 – DMD Measurement of Minimum Modal Bandwidths of Multi-Mode Fiber Using Differential Mode Delay

PN-Ballot / or Reaffirmation Ballot

TSB-62-5 Characterization of Attenuation Uniformity of Optical Fibers

PN-Ballot for Withdrawal

TSB-62-6 Characterization of Mode Field-Diameter and Cut-off Wavelength of Single-Mode Fibers with OTDRs

Document has been incorporated in FOTP-191, permission requested to withdraw PN.

SP-Ballot / or Reaffirmation Ballot

- FOTP-3A Temperature Cycling Reballot
- FOTP-46A Spectr. Atten. Long.Length GI OF
- FOTP-53A Attenuation by Substitution Measurement for Multimode Graded-Index Optical Fibers or Fiber Assemblies (Long Length) Reaffirmation Ballot (Author – Dave Leight)
- FOTP-72 Temp./Humid Effects on Optical Char.
- FOTP-73 Temp./Humid Effects on Mechanical Char
- FOTP-113 PMD Measurement for Single-mode Fibers
- FOTP-115 Spectral Attenuation of Step-Index MM Fiber
- FOTP-120 Modeling Spectral Attenuation on Opt. Fibers
- FOTP-171 Attenuation by Sub. Measurement – for Short-Length MM Graded-Index and Single-Mode Optical Fiber Cable Assemblies (reballot)
- FOTP-178 Measurements of Strip Force for Mechanically Removing Coatings from Optical Fibers;

Back-adoption Paperwork

- IEC 60793-1- 32. Strippability
- IEC 60793-1- 40 Attenuation
- IEC 60793-1- 44 Cut-off Wavelength
- IEC 60793-1- 43 Numerical Aperture
- IEC 60793-1- 50 Damp Heat
- IEC 60793-1- 51 Dry heat
- IEC 60793-1- 52 Change of Temperature
- IEC 60793-1- 53 Water Immersion

SP-Ballot /Authorization to publish with resolution of any comments

FOTP-122 Polarization-Mode Dispersion Measurement for Single-Mode Optical Fibers by Jones
Matrix Eigenanalysis - Check title against document log

SP-Ballot /Withdraw Document

- FOTP-51A Pulse Distortion MMF
- FOTP-164A SMF Mode-Field Diam - Far Field
- FOTP-121 SP Neutron Induced Attenuation Combined w/FOTP-64
- FOTP-182 SP Hydrogen Evolution

Request Action from FO-2.0 /FO-6.0

PN - Ballot / Authorization to Publish with resolution of any comments

TIA-440 Terminology Document (Given)

FO-6.7 Fiber Optic Cable, by Mike Kinard

Decisions

Task Group FO-6.7.16, Ribbon Issues, was dissolved, as the program of work has been completed.

New Projects

Adoption of the IEC shotgun damage test method for a new FOTP was authorized. A M.A.D. (Mandatory Author Designation) author was assigned.

Ballots Authorized

FOTP-33, tensile load and bend; second SP.

FOTP-44, compression; SP for reaffirmation, changing revision SP authorized in January 2000.

FOTP-82, fluid penetration; letter ballot, replacing revision SP authorized in June 2000.

TSSC Review Authorized

TIA-598B, cable color code. This action is redundant to actions of January and June 2000.

FOTP-33, tensile load and bend; contingent on clear closure of SP authorized above.

FOTP-38, fiber strain in cable.

Other Document Status

Actively working – 5

No action needed – 18

In limbo (or status uncertain) – 4

Presentations Given

ITU/IEC PMD & L-band Status, Bill Gardner. The US delegation is proposing a Recommendation on L-band performance on installed cables, based on data on ~16,000 spliced fibers. Telcordia has supporting data. Nothing new on PMD.

Future Presentations

PMD & L-band International Status, Bill Gardner

Task Group Reports

- FO-6.7.10, Color Code Standard. Issues on the table for the next revision of TIA-598 (C) are redefinition of Slate (Gray), inclusion of specifications for the first ten colors, and addition of six new colors (pushing the total to 18).
- FO-6.7.15, IEC coordination. Report of March 2001 WG1 and WG3 meetings was given. There was a lengthy discussion of how to effectively interact with IEC groups. Back-adoption of IEC standards was discussed. Participation at the CD ballot level was emphasized.
- FO-6.7.16, Ribbon issues. The ribbon dimensions measurement round robin (FOTP-123) was dropped due to insufficient interest to actually execute. All work in the scope of the TG is done.

FO-6.7.17, Cable impact test, FOTP-25. Final cleanup of comments will be completed soon. The document can then go to TSSC, as authorized in January 2001.

Liaison Reports

IEEE liaison. Standards P1222, ADSS, and P1638, OPGW, continue to be actively worked. No information on the drop cable standard was known.

ICEA liaison. Specifications on Premises cable (596) and Outdoor/Indoor cable (696) are very close to publication. The TWCS-TAC ad hoc group on the cable jacket material weathering test is reviewing initial data. A new TWCS-TAC effort on android gopher testing is beginning.

Other Discussion

Proposal for a Plenary session early in the meeting week may be trialed in January.

Telcordia will be announcing Technical Forums to revise GR-20 and GR-409.

The M.O.U. on adoption (or other appropriate action) of ICEA cable specifications into the TIA system remains on hold in TIA. This has been in process since January 1996.

Actions required by FO-6.0

None.

FO-6.9, Polarization Maintaining Fibers, Connectors and Components by Rex Craig

Finished projects

- None at this time

In-process projects

- SP-4245 FOTP-200: PM Connector Insertion Loss Based on new procedures which speed the publication process for a new FOTP, the SP Default ballot was cancelled. (Chair will notify TIA.) Comments and changes were reviewed and approved within the SC (only minor editorial and technical issues existed), and SC approved going straight to publication as an ANSI/TIA document with a unanimous vote. Author: Dennis Horwitz - RIFOCS
- SP-4246 FOTP-201: PM Connector Return Loss Based on new procedures which speed the publication process for a new FOTP, the SP Default ballot was cancelled. (Chair will notify TIA.) Comments and changes were reviewed and approved within the SC (Only minor editorial and technical issues existed), and SC approved going straight to publication as an ANSI/TIA document with a unanimous vote. .Author: Dennis Horwitz - RIFOCS

- PN-3783 FOTP-199: In-line Polarization Crosstalk Author to circulate revised document by the FO6.9 reflector for comments by members by July 31. Then incorporate comments and submit for SP ballot by August 31 to complete voting process by the January 2002 meeting.
Author: Paul Hernday - AGILENT
- PN-3-0019 TSB-130 Performance Guidelines for PM Connectorized Assemblies Author to send updated draft to the FO6.9 reflector for comments by members by July 31. Then incorporate comments and submit for final round of internal comments to be completed by August 31. Then submit final version for PN ballot by September 30 to complete voting process by January-2002 meeting
Author: Greg Ronan - WAVE OPTICS/FLEXTRONICS
- FOTP-XXX Keying Accuracy of PM Connectors SC unanimously approved putting adoption of IEC 61300-3-24 as ANSI/TIA FOTP to SP ballot. Will request Project Number and e-copy of document through TIA.
Author: Dennis Horwitz - RIFOCS

Liaison Activities

- TIA/EIA-598-B (PN-3-3555-1) Optical Cable Color Coding 1999 FO6.7.10 FO6.9 has submitted request to include PM Jacket Color Code of EIA Blue in Revision C. Eric Lotty/FO6.7 Chair reported that the Rev C effort was delayed but back on track
- FOCIS-16 LSH Connector FO6.3.4 PN ballot authorized. Dennis Horwitz will submit PM orientation and application requirements to author for inclusion in next voting draft.
Author: Daniel Ernst-DIAMOND SA
- FOCIS-?? MU Connector2001 FO6.3.4 SP ballot authorized. Dennis Horwitz will submit PM orientation and application requirements to author for inclusion in next voting draft.
Author: Shin'ichi Iwano-NTT-AT.

Future Projects

TBD FOTP-Beat Length Draft presentation at June-2001 meeting.
Authors: Paul Hernday/Grieg Olson

PMF "Incubators" This effort was cancelled as both potential authors can no longer support the effort.

FOOD FOR THOUGHT: Unless new PMF standards opportunities arise, it looks like FO-6.9 may complete its basic PMF Connectorization objectives to develop the relevant FOTPs and TSB/Generic Specs by the June-2002 meeting. Members to consider other industry needs or the committee may potentially recommend disbanding FO6.9 at end of 2002.

9 Liaison Reports

Note: Most liaison reports from other SDOs are given in multiple working groups or subcommittees. To enable easier access to them, the liaison reports have been extracted from individual reports and consolidated

DoD report, by Art Hudson:

- The TIA/EIA-440 Terminology document has terms added from some military standards and needs to be re-circulated for comment.
- We are continuing to push the issues about who can write a detail spec and how a TIA registration system would work. We really need the ability for users (DoD and DoD contractors) to write detail specifications, if your subcommittees are not going to write them.
- The Naval Sea Systems Command's standardization office is reorganizing. This could effect Gair Browns standardization work.
- Fiber Optic Multi-channel circular connector MIL-C-28876 and all associated specification sheets, and Fiber Optic Termini, MIL-T-29504 and associated specification sheets, are ready to go to Navy Ships for dating. TIA/EIA-604 and 604-3A, -4, -5, -10A, and -12 FOCIS documents were reviewed by DoD personnel and comments submitted to the authors. MIL-C-83526 may be cancelled and replaced by a new specification to support connectors use on the Army's TFOCCA II Fiber Optic Cable Assemblies.
- MIL-PRF-49291/6C and /7C drafts are still being held by the Navy awaiting dating.
- Revision A to MIL-DTL-85045/8 is in process and the Navy is working on new specification sheets /25, /26 and /27. Work is continuing on FOTP-88 for reinstatement.

IEC 86A TAG report by Tom Hanson:

Twenty (20) individuals representing twelve (12) companies attended the US TAG to SC86A meeting held on Wednesday June 27, 2001 in Portland, Maine.

a. SC86A WG1, Fibres

A number of documents were advanced to the next (CDV) voting stage.

b. SC86A WG3, Cable

A number of family specifications were advanced to the next (CDV) voting stage.

Strategy formulation agreements

a. Internal Cables

Document 60794-2 Indoor Cables Sectional Specification- rejected as the colour code contained within did not meet with the membership approval. A compromise, of adding an example of a color code, was accepted as a way forward.

b. Fiber - Environmental Requirements

Attenuation change
Single mode: .05 dB/km
Multimode: 0.20 dB/km
Strip Force (mechanical)
Average Strip Force, conditioned at 23 degrees C
Accepted Average, 1.0 – 5.0 N
Agreed also to Japanese request for Peak. (≤ 9.0)
Tensile test (mechanical) (Kuyt's proposal)
GR-20 values
Go with damp heat / Remove water immersion
Dynamic fatigue
Damp Heat greater than equal to 18

c. Multimode Fibre

Advance Multimode Technical Specification utilizing DMD mask
Advance DMD test with PAS option

d. Italian proposal on guide to fiber compatibility
In inter-fibre compatibility document from Italy was reviewed. Agreement to organize the document into different parts for transmission aspects and connection aspects.

e. Connectorized Jumper Cables

Need to get functional requirements definition from 86B.

Implementation

a) Link PMD - 86C/WG1

This is proceeding

b) Restructure Specifications

Agreed to merge requirements for measuring bandwidth of A4 fibers into the revision of 60793-41 (current requirements for A1 fibers)

c) Test Methods

1) Effective Area

Comments resolved. Next step: CDV

2) Nonlinear Coefficient

Comments resolved. Next step: CDV

3) PMD

A PMD measurements overview document was reviewed and critiqued. This will be added to the TC86 documentation.

Polarization-Mode Dispersion Measurement for Single-Mode Optical Fibers by Stokes parameters will be updated to include the Mueller matrix analysis. This will then go out for CD rather than CDV

4) Microbending

Efforts to resolve comments By October will be made by correspondence

5) DMD

A Differential Mode Delay (DMD) measurement method was agreed to be advanced as NP ballot This NWIP will be marked as a Publicly Available Standard (PAS) and be advanced as a technical paper.

6) Raman Gain Efficiency

A Raman gain efficiency measurement method was offered by the US for information. The WG agreed to advance it as an NP after the TIA ballot clears

New business

Ballot Process - Expedited Voting Process_– agreed to unanimously by committee.

Ed Kelly, TC86 TA, made a call for experts on environmental impact of telecommunication systems to participate on a coordinating committee.

October meeting delegation – Tom Hanson, Manuel Santana, Eric Loytty, Jack Rosco [Allen Cherin and Steve Swanson as ex Officio].

10 New Business

January 21-24, 2002

Kauai, Hawaii

[Sheraton Kauai](http://www.sheraton-kauai.com/) <http://www.sheraton-kauai.com/>

2440 Hoonani Road

Poipu Beach, Koloa, HI 96756

1-800-782-9488

1-808-742-1661

1-808-742-9777 (Fax)

Cut off Date: December 21, 2001

\$145 Garden

\$165 Lagoon

\$190 Deluxe Ocean Front

June 2002

Kiawah Island, South Carolina

January 2003

Fort Myers (Las Vegas)

June 2003

Three potential choices: Juneau, Alaska; Portland, Oregon; Quebec City, Quebec

11 Adjournment

The meeting was adjourned at @ 5:12PM on June 28, 2001. The meeting was conducted in accordance with the legal guidelines as stated in the TIA Engineering Manual.

Respectfully submitted,



Felix Kapron
Chairman FO-2
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Attachment 1: Action List

Action Required	Due Date	Designate	Status
1. Renumber FO-2.1.1 to FO-2.7	1/02	F. Kapron	Done
a. Review and update FO-2.1 scope	1/02	A. Cherin	
b. Review and update FO-2.7 scope	1/02	J. Matthews	Done
c. Update the website and exploder to reflect the renumbering of FO-2.1.1 to FO-2.7	1/02	S. Montgomery	
2. Rectify reflector problems with FO-6.3	1/02	S. Hoyler	
a. Check FTP Web Browser; Password and User name		S. Montgomery	
3. Provide a definition of quorum, Request Information Only (RIO), primary and alternate in regards to voting membership is needed. Quorum is determined by company	1/02	S. Hoyler	
4. Provide a quorum List for each Committee is needed prior to the January 2002 meeting.	Aug 1, 2001	S. Hoyler	
5. Determine if someone can opt out of being on the quorum list.	1/02	S. Hoyler	
6. Determine if Fiber Optics needs a representative on the Style Guide Committee. (NO)	1/02	F. Kapron / S. Swanson	Done
7. Provide definitions for a Default ballot– ANSI? vs. TIA std??	1/02	S. Hoyler	
8. Provide information on future meeting sites:	01/02		
a. Kiawah Island, North Carolina June 2002		J. Franz	Done
b. Fort Myers January 2003		J. Franz	
9. Provide information on top three locations for June 2003 meeting preferences. (possible location - hotel, Per Diem rate, etc) by January 2002 meeting	01/02	J. Franz	
1) Juneau, Alaska			
2) Quebec City, Quebec			
3) Portland, Oregon			
10. Resolve MOU issues on ICEA document and provide an update prior to the January 2002 meeting.	01/02	S. Montgomery	
11. Investigate possible agreement with TC86 to adopt	1/02	J. Matthews	

IEC documents into without individual document paperwork.			
12. Fast track documents. Methodology (procedural document) will research ANSI procedures to see if it explicitly prohibits fast track as proposed by the IEC	1/02	S. Montgomery	
13. Resolve registration feasibility and legality with TIA.	1/02	G. Brown / S. Hoyler	
14. Add to FO-6.6 agenda to revise RS-455- add Calibration / Maintenance.	1/02	A. Auchu	
15. Review Style Guide to see whether TSM-6 / TSM-7 / TSM-4 / TSM-5 can be rescinded or withdrawn. Add to FO-6.6 and FO-6/FO-2 Agenda.	1/02	A. Auchu - B. Zidek-Conner	
16. Update attendance Roster sheets. Several chairs were not listed on their meeting attendance sheet. E-mail excel spreadsheet list to each chair for edit.	Aug ust 2001	S. Montgomery / R. Ibar	
17. Add to FO-2.0/FO-6.0 agenda January 2002 Transition to all-electronic meeting by January 2003-	1/02	A. Auchu	
18. Indicate in meeting record that the Fiber Optic group has chosen Option A - Ballot response is included as requirement for membership.	1/02	S. Swanson / F. Kapron	Done
19. Add to all even number sub-committee and committee agendas for January 2002 – chair election and detailed requirements (See attachment)	1/02	Chairs of: FO-2 FO-6 FO-2.2 FO- FO-2.6 6.6	
20. Reminder to all odd number sub-committee and committee to add to their agendas for January 2003 – chair election and detailed requirements (See attachment)	1/02	Chairs of: FO-2.1 FO-6.1 FO-2.3 FO-6.3 FO-2.7 FO-6.7 FO-6.9	
21. Define and implement process for elections of chairs.	11/0 1	S. Swanson / F. Kapron S. Montgomery S. Hoyler B. Zidek-Conner	
22. Remind secretaries and chairs to send email to authors regarding deficiencies in documentation preventing publication of their documents.	1/02	S. Swanson / F. Kapron	

Action Required	Due Date	Designate	Status
23. Examine ways to eliminate or reduce the number of forms required for documentation. [Request from to group as a whole-develop a contribution numbering scheme and keep records.]	1/02	B. Zidek- Conner	
24. Develop a procedure to reaffirm / withdraw Documents in Sub-committee	1/02	B. Zidek- Conner	
25. Develop a mechanism to show traceability for documents. That is, if rescinds a document, there is a record that shows what replaced it, etc.	1/02	S. Hoyler	
26. Provide a presentation on International Standards	1/02	S. Hoyler	
27. Set up LAN in main meeting room at the January 2002 meeting. Send Instructions out in October with a reminder in December.	1/02	S. Hoyler	
28. Determine if it is more economical to host a meeting with catered food (room included) vs. room rental. Second option is membership pick up their cost of meal to off-set some of 's overhead. (Example - noon hour tutorials)	1/02	S. Hoyler J. Franz	

Engineering Manual June 1, 2001

Section 4.2 Nomination of Candidates

The following process will be used by a Formulating Group to receive nominations for candidates:

- (1) Nomination letters and letters of support for Chair and Vice-Chair shall be sent to the Vice President, Standards and Technology and copied to the current Formulating Group leadership.
- (2) Candidates are asked to submit a statement of interest, qualifications and objectives to the Standards Secretariat who will distribute it with the name of the nominees.
- (3) At least 30-days before the designated election meeting, the names of nominees for Chair and Vice Chair will be sent by the Standards Secretariat to the organizations in good standing listed on the quorum list of the Formulating Group.
- (4) Before the election, additional nominations from the floor shall be permitted. Each nomination from the floor shall be accompanied by a written letter of support from the employer of the candidate and a statement of interest, qualifications and objectives for their proposed administration.



BUILDING GLOBAL COMMUNICATIONS

Approved by General Counsel

FO-2/FO6 Meeting Reports

Date: 06/28/01

Location: Portland, ME

Approved: 10/25/01

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