



BUILDING GLOBAL COMMUNICATIONS

Approved by General Counsel

FO-4 Meeting Report

Date: 06/20-22/06

Location: Niagara Falls, Canada

Approved: 01/02/07/29/06

T# 10374

**Telecommunications Industries Association
Standards and Technology Department**

Engineering Committee FO-4, Committee on Fiber Optics

Meeting Report

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

Niagara Falls, Ontario, Canada
June 20-22, 2006

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1 ADMINISTRATIVE

1.1 Call, to order

The Opening Plenary was called to order on June 20, 2006 at 8:00 AM. The FO-4 Opening Plenary and Closing Plenary were co-chaired by Tom Robinson and Steve Swanson. Steve began the Opening plenary by explaining that the Opening Plenary is intended to update members of committee meeting expectations, and to inform them of administrative essentials. He also noted that quorum is not called at the Opening Plenary and that attendance at the Closing Plenary constitutes the FO-4 membership and quorum.

Tom Robinson called the Closing Plenary meeting to order at 8:00 AM June 22, 2006. The Closing Plenary session is intended to summarize Subcommittee meeting activities and resolve any issues arising throughout the week of meetings. The Chair reminded those attending that attendance at the Closing Plenary constitutes the FO-4 membership and quorum. He also noted that continuity of membership is important in order to establish quorum and to take part in the FO-4 leadership decisions.

1.2 Attendance (quorum, introductions and roster)

Attendance at the Closing Plenary constitutes the FO-4 membership and quorum. Quorum was declared for the Engineering Committee meeting. The attendees introduced themselves and an attendance roster was distributed for participants to sign.

Co-chairs				
Steven Swanson	Corning, Incorporated	swansonse@corning.com	607-974-4252	√
Tom Robinson	Draka Comteq		828-459-8839	√

Voting members companies present:

Paul Kolesar	CommScope	pkolesar@systemax.com	972-792-3155	√
Tom Hanson	Corning Incorporated.	hansonta@corning.com	607-974-4530	√
Alan Whitebook	Diamond USA, Inc.	awhitebook@mindspring.com	661-702-9740	√
Lorenz Cartellieri	Experior Photonics, Inc.	lcartellieri@experiorphotonics.com	805-499-3000	√
Jim Hayes	Fiber Optic Assoc.	jeh@jimhayes.com	760-451-3655	√
Bob Jensen	Fluke Networks	robert.jensen@flukenetworks.com	512-514-7760	√
Dan Morris	KITCO Fiber Optics	dmorris@kitcofo.com	757-518-8100	√
Helmut Knehr	National Technical Sys.	helmut.knehr@ntscorp.com	714-879-6110	√
Mike Kinard	OFS	mkinard@ofsoptics.com	770-838-5307	√
Dave Kritler	Photon Kinetics Inc.	dave.kritelr@pkinetics.com	503-526-4655	√
Osman Gebizlioglu	Telcordia Technologies	ogebizli@telcordia.com	732-699-3378	√
Dave Fisher	Tyco Electronics	David.fisher@tycoelectronics.com	717-986-5501	√
Norm Lampert	Yazaki NA Inc, Y-Connect	lampert@y-connect.com	717-930-1348	√

Voting members companies absent:

Pin Su	DiCon Fiberoptics Inc.	psu_std@yahoo.com	510-620-5315	
Halina Kosiorska Bodine	FiberSource Inc.	Halina@fibersource.net	864-277-7200	
Michael Itano	Leviton Voice & Data	mitano@levitonvoicedata.com	425-415-7239	
Adam Murano	Ortronics	amurano@ortronics.com	860-450-2804	
Gene Ebert	Defense Supply Ctr.	eugene.ebert@dia.mil	614-692-0729	
Pieter Matthyse	Draka Comteq	piet.matthyse@draka.com	31-402-958-627	
Andre Girard	EXFO	andre.girard@exfo.com	418-683-0211	
Eric Rosenast	Greenlee, a Textron Co	erosenast@tempo.textron.com	760-598-8900	
Andy Punch	Nexans dba Berk-Tek,		919-552-2061	
Iwano Shin'ichi	NTT Advanced Tech.	s.iwano@neo.ntt-at.co.jp	650-617-0320	
Greg Kuffel	Panduit Corp.	glk@panduit.com	708-460-1800	
Patrick Vanvickle	Sumitomo Electric	pvanvickle@sumitomoelectric.com	919-541-8153	
Gair Brown	US Navy	brownqd@nswc.navy.mil	540-653-1579	
Matt Brown	US Conec	mattbrown@usconec.com	828-267-6327	

Other participants

James Ryan	Draka Comteq	Jim.ryan@drakacomteq.com		√
Frank Achten	Draka Comteq	Frank.achten@draka.com	+31.402958653	√
Kenneth Dunn	Corning, Inc.	ken.dunn@corning.com	828-901-6936	√
Greg Sandels	OFS	gsandels@ofsoptics.com	770-798-4978	√
Mike Gurreri	Tyco Electronics	mgurreri@tycoelectronics.com	717-985-2185	√
Tim Drapela	US Dept Commerce	drapela@boulder.nist.gov	303-497-5858	√
Robert Conte	CommScope	Rac07726@yahoo.com	732-446-5829	√
Harold Glick	US Navy	Harold.a.glick@navy.mil	951-273-4755	√
Douglas Parker	Tempo Research	dparker@tempo.textron.com	805-384-1834	√
David Leight	Defense Supply (DSCC-VAT)	David.leight@dla.mil	614-692-0521	√
Elana Finger	Corning	fingerem@corning.com	607-974-4910	√
Randy Manning	Tyco	Randy.manning@comcast.net	717-761-1421	√
David Mazzaresse	OFS	dmazzaresse@ofsoptics.com	413-803-9705	√
Donald Allard	AFL Telecommunications	Donald.alard@afletele.com	603-528-7780	√

FO-4 company attendance history at Closing Plenary

Company	Last 3 meetings	June 2006	January 2006	June 2005
3M	2		1	1
CommScope	3	1	1	1
Corning, Inc.	3	1	1	1
Diamond USA	3	1	1	1
Draka Fibre Tech.	3	1	1	1
DSCC-VAT	3	1	1	1
EXFO	2		1	1
Experior Photonics	3	1	1	1
Fiber Optic Association	3	1	1	1
Fiber Source	1			1
Fluke Networks	2	1		1
KITCO Fiber Optics	3	1	1	1
National Technical Systems	3	1	1	1
NIST	3	1	1	1
NTT	1		1	
OFS	3	1	1	1
Panduit	1		1	
Photon Kinetics	1	1		
Sumitomo	2		1	1
Telcordia Technologies	3	1	1	1
Tempo	3	1	1	1
Tyco Electronics	2	1	1	
US CONEC	2		1	1
US Navy	3	1	1	1
Yazaki NA, Inc	3	1	1	1

Note: Member companies absent from three consecutive closing plenary 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 closing plenary 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

The Opening Plenary agenda was reviewed and approved.

The Closing Plenary agenda was reviewed and approved.

1.4 Intellectual Property Rights statement

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

1.5 Chair's report; general items; recognition

Tom Robinson, Draka ComTeq, was introduced as the incoming chair of FO-4. Tom and Steve Swanson will co-chair this meeting for a smooth transition of leadership. Steve noted that the Opening Plenary session is intended to update members of committee meeting expectations, and to inform them of administrative essentials. The liaison reports received will be posted to the ftp site. A re-structuring is occurring within TIA and will be noted in the TIA report. FO-4 is considering merging with TR-42. Discussions over advantages and disadvantages will be held throughout the week.

1.6 TIA staff report

TIA Staffing

There are six main updates of TIA Staff Report:

- Highlights of GSC 11 Meeting
- Updates on IPR Policy
- Staff replacement for FO-4
- TIA's New Responsibility as TAG Administrator to TC 204 and International Secretariat.
- Personnel changes at TIA.
- FO-4 Teleconference Meeting

GSC

GSC stands for Global Standards Collaboration.

GSC is also the world's leading telecommunications and radio standards organization.

GSC held its 11th.Meeting from May 28-June, 2000 in Chicago, hosted by IA and was attended by more than 100 participants from the following 10 Participating Standards Organizations (PSOs):

- ACIF: Australian Communications Industry Forum.
- ARIB: Association of Radio Industries and Businesses of Japan.
- ATIS: Alliance for Telecommunications Industry Solutions.
- TIA: Telecommunications Industry Association (USA).
- ETSI: European Telecommunications Standards Institute (European Union).
- CCSA: China Communications Standards Association.
- ISACC: Standards Advisory Council of Canada.
- TTA: Telecommunications Technology Association of Korea.
- TTC: Telecommunications Technology Committee f Japan.
- ITU: International Telecommunications Union.

The objective of this meeting was to promote innovation and collaboration for converged Fixed/Mobile Communication Services.

Presentations

There were three Guest Presentations, namely:

- Wireless World Initiative.
- Wireless World Research Forum.; and
- FLO Forum.

These presentations involved a total of 32 input documents..

The Chairman noted that "people's lives are positively impacted by the world of modern global telecommunications".

For further details about SC-II Meeting, refer to URL on TIA's Press Release.

Future Meetings:

The next GSC Meeting will be sponsored by ARIB and TTC in Japan from July 8-13, 2007.

FO-4 Staff Replacement:

Marianna Kramarikova starts June 26 as the third TIA Standards Administrator. She will be working with Carolyn Bowens and Ronda Coulter.

Marianna will be responsible for FO-4 Committee. She will need training that will take some time. TIA hopes that there should be improvement on the outstanding issues.

TIA's New TAG: TC 204: (Intelligent Transport Systems)

TIA has taken up new responsibility as the TAG Administrator to TC 204 and International Secretariat. It held its first TAG Meeting on 15 June, 2006 as the new TAG Administrator.

Personnel Changes at TIA

There is a new Public Relations (PR) staff and a new Membership Director.

Updates on IPR:

ANSI Patent Group has approved a revision to ANSI IPR Policy that is now on its way to ANSI IPR Policy Committee. If approved, it will then go to ANSI EXSC for public round of comments but likely we will see some tweaks to text of policy, but the end result is clean up and not a substantive change in how we work.

Other Business

Karl Heinz Rosenbrock is retiring from ETSI and will be gone by end June. A new Director General from Siemens was elected to replace him.

FO-4 Leadership Teleconference: Mr. Henri Cuschieri, Senior Director, Standards & Technology, will be hosting FO-4 (Leadership Teleconference sometime in July 2006.

1.7 Numbering of contributions

Steve noted that all contributions to FO-4 were available on the FTP site.

Document #	Contributor	Company	Title
FO-4/06-01-013	Chair		January 2006 Meeting Report
FO-4/06-06-014	Chair		June 2005 Opening Agenda
FO-4/06-06-015	Chair		June 2005 Closing Agenda

Document #	Contributor	Company	Title
FO-4/06-06-016	Chair		June 2005 Opening Meeting (PPT)
FO-4/06-06-017	Chair		June 2005 Meeting Schedule
FO-4/06-06-018	Steve Swanson	Corning	Updated Status Spreadsheet
FO-4/06-06-019	Steve Swanson	Corning	Opening Meeting (Rev)
FO-4/06-06-020	Steve Swanson	Corning	ISO Norm References
FO-4/06-06-021	Steve Swanson	Corning	FO4 June Schedule
FO-4/06-06-022	Steve Swanson	Corning	Closing Plenary
FO-4/06-06-023	Tom Robinson	Drake	Closing Slides
FO-4/06-06-024	Paul Kolesar	CommScope	FO-4.1 Summary Report
FO-4/06-06-025	Tom Hanson	Corning	FO-4.2 Summary Report
FO-4/06-06-026	Greg Sandels	OFS	FO-4.3 Summary Report
FO-4/06-06-027	Lorenz Cartellieri	Experior	FO-4.5 Summary Report
FO-4/06-06-028	Bob Jensen	Fluke Networks	FO4/TR-42 Feb. 07 Proposed Schedule
FO-4/06-06-029	Bob Jensen	Fluke Networks	June 2006 Meeting Report

1.8 Meeting report review and approval

The January 2006 meeting report was reviewed at the closing plenary and unanimously approved.

2 OLD BUSINESS

2.1 Action item review from last meeting

Action item review	Action:	Resp:	Status:
2004-06-001	FO-4.1 asked if a process can be developed retiring OFSTP numbers, possibly by using a dual number that includes the old OFSTP number and the new FOTP number for some period of time.	TIA Staff	Withdrawn
2002-06-009	Place document database on the WEB for all projects so that it can be updated and maintained.	TIA Staff	On-going
2003-06-012	Develop national adaptation procedure	TIA Staff	On-going
2005-01-001	Investigate implementation of forward pointers in FO-4 standards.	TIA Staff	On-going
2005-01-001	Investigate options for taking non-electronic versions of standards to become electronic versions.	TIA Staff	On-going
2005-01-001	Develop a list of incompatible references that should not be used in TIA standards.	TIA Staff	On-going

3 PLENARY REPORTS

3.1 Opening Plenary reports

Steve Swanson noted that reports received will be posted to the ftp site.

3.2 Closing Plenary reports

3.2.1 FO-4.1, Optical Fiber Systems, Jim Matthews

Paul Kolesar chaired the meeting at the request of FO-4.1 Vice-chair Gair Brown. Gair Brown and Jim Matthews, chair of FO-4.1 were absent. Quorum was achieved with 9 of 9 quorum members in attendance. Nexans/BerkTek, Optek, Ortronics and PerkinElmer were deleted from the quorum list. The Fiber Optic Association was added to the quorum list.

FO-4.1.2 (Multimode Transmission Systems) received two contributions.

Tom Hanson provided a summary of his work and views on the multimode launch condition metrics, analysis, and status. Tom intends to launch a revision ballot of IEC 61280-4-1 (attenuation measurements of installed multimode cabling) in very early July so that comments can be resolved at the October IEC TC86 meeting in Quebec City.

Paul Kolesar presented an incomplete draft of the multimode transmission techniques TSB and collected feedback.

Other FO-4.1.2 action items from the previous meeting were discussed.

Kolesar had completed his action to present launch condition topics to TR-42.8 at their January 2006 meeting in Palm Springs.

The revision of OFSTP-14 to include modification of the source launch characteristics has not progressed awaiting the revision of IEC 61280-4-1, as these documents cover the same topic.

A discussion was held on the revision to OFSTP-14A and its usefulness with related standards such as TIA-568. The discussion resulted in a motion by Paul Kolesar, seconded by Bob Jensen, to begin the OFSTP-14A revision in tandem with IEC 61280-4-1 and prepare the revision for a committee ballot. The motion was unanimously approved.

3.2.2 FO-4.2, Optical Fibers and Cables, Tom Hanson

There were 13 individuals present, representing 11 organizations. A total of 4 out of 7 quorum members were present so quorum was declared. Two additional quorum members were added.

The working groups FO-4.2.5 (microducts and products installed with blowing) and FO-4.2.6 (harmonization of IEC/TIA test methods) met with a limited number of participants. It was proposed and agreed to put FO-4.2.6 on hiatus status. FO-4.2.5 plans for a two hour time slot at the next meeting because comments on a pair of new IEC ballots may need to be resolved.

FO-4.2 discussed the possibility of co-meeting with TR-42. This was viewed as a positive opportunity, but concerns were expressed about the number of meetings.

A detailed review of draft revised FOTP-3 (temperature cycling) was completed. The material relating to connectors will be moved to a normative annex so the main text can focus on cable testing. Main aspects of the revision relating to cable testing include:

- Clarification that the soak time determination is normatively defined in terms of temperature equilibrium.
- Clarification of the procedures associated with equipment malfunction.

A PN ballot for revised FOTP-3 was authorized and a follow-up SP ballot was also authorized provided a successful comment resolution – which will be conducted in correspondence.

FOTP-12 (fluid immersion testing) was authorized for revision at the last meeting. The updates from the DoD have been taken into account and an SP revision ballot will go forward.

The fiber specification documents under TIA-492 will be coming up for revision. The format will be maintained, but where possible the limits will be aligned with the International Standards.

FO-4.2 agreed to revise the following with ANSI (SP) ballots:

455-98A Fiber Optic Cable External Freezing Test
455-111-A IEC-60793-1-34 Optical Fibres – Part 1-34: Measurement Methods and Test Procedures
- Fibre Curl

Progress in the ICEA was noted. This includes a revision of the outdoor cable specification, “640” and the development of a new specification on cables for installation in sewers.

New discussion topics included:

Consideration of a parallel TIA/ICEA process for microducts and products intended for installation by blowing.

Consideration of the different short term tensile test limits found in the draft IEC product specification, 60794-3-11, and the ways forward in the event that there is significant opposition to two options. Consideration of the possible need for an extension of ICEA “640” to cover the additional requirements associated with certain large telco customers.

Items needed from FO-4

It has come to the attention of FO-4.2 that several TIA documents are not available, apparently due to some ongoing issues between ANSI and TIA. These documents appear to be mainly those for which the IEC document has been adopted. All the primary fiber measurement procedures fall into this class.

One large complaint is that the documents are required to complete factory audits. Since the unavailability of documents, the audit process is impaired which has business implications.

Another related aspect is that FO-4.2 has planned to adopt the IEC PMD measurement document, 60793-1-48, and to replace three TIA documents with that action. If the TIA/ANSI problems are not resolved, this plan needs to be reviewed.

FO-4.2 request that FO-4 bring these issues and concerns to TIA staff with a request for a firm calendar date for the resolution. If such a date cannot be provided, some other plan of action must be discussed within FO-4.2.

3.2.3 FO-4.3, Interconnecting Devices and Passive Components, Greg Sandels

Greg Sandels reported that there were 17 persons in attendance at the meeting and that quorum was established.

- WG Action Items were reviewed and discussed (see FO-4.3 January 2006 Report)
- 1998 overdue documents for reaffirmation to be balloted before next meeting
- 1999 overdue documents for reaffirmation to be balloted before next meeting
- 2000 overdue documents for reaffirmation to be balloted before next meeting
- 2001 documents for reaffirmation to be balloted before next meeting
- Requested documents for ballot and publication in 4.3.2 approved by committee
- Ownership of WG documents to be revised by chairs before next meeting
- SC and WG's will formally request a category D Liaisons with IEC SC86B

FO-4.3.1 (Passive Components) Helmut Knehr – Chair
10 persons were in attendance.

Although solicited, no inputs related to CWDM and PON have been received.

A project related to characteristics of PMD compensators remains on hold with possible cancellation in the future.

The working group feels inputs should be solicited from other test equipment supplier regarding testing issues for CWDM/PON. Some suggestions included Agilent and JDSU and EXFO

A presentation of applicability of Telcordia and IEC documents against G.671 is planned for the next meeting.

There was no input on fiber bragg gratings. This was deferred to the next meeting.

After the working group meeting a suggestion was made from outside the group to examine multi-mode issues for components.

FO-4.3.2 (Passive Components) Greg Sandels – Chair

20 persons in attendance

- An FOTP for sheave wheel testing was discussed and is still evolving. Final form will eventually be balloted.
- FOTP 219 was amended to include coplanarity and a request to move to a PN ballot was requested and granted by 4.3
- FOCIS 10 ballot was reviewed, discussed and resolved. A request to move to publication was requested and granted by 4.3

- FOTP 240 ballot was not discussed (ballot closes 6/22/06) Ballot discussion and resolution will take place next meeting
- FOTP 238, FO inspection document remains on hold awaiting the IEC counterpart for back adoption
- Draft FOCIS 5 was presented and discussed. An SP ballot was requested and granted by 4.3
- A reminder was presented to the group of the rewriting of FOTP 3A in FO-4.2 the connector issues remain unchanged and were moved to Annex A

FO-4.3.1 (Passive Components Reliability) Osman Gebizlioglu – Chair
17 persons were in attendance

O. Gebizlioglu presented his review of a draft document on adhesives applications guidelines.

Volunteers were requested to write document sections such as physical properties of four main classes of adhesives and Gebizlioglu called for additional input to develop the pre-balloting version of the document.

B. Siroka reviewed a draft document of adhesion strength test methods and provided details of the test and O. Gebizlioglu proposed to conduct a preliminary evaluation of the proposed test method and asked for participation by WG

A Draft of TSB-161 (PN-3-0169) based on an informative revision of IEC 62005-2: Part 2 - Quantitative assessment of reliability based on accelerated aging tests - Temperature and humidity: steady state (ed. B. LeFevre) was reviewed by the WG

Upon request from TIA, two documents TSB-144 and TSB-145 were reviewed for revision in language and prepared for balloting.

3.2.4 FO-4.5, Fiber Optic Metrology, Lorenz Cartellieri

Lorenz Cartellieri reported that quorum was established for the meeting and that Kitco and FOA were added as new voting members. Telcordia was being removed as a voting member.

PROJECTS	TITLE	STATUS
TSB-141	TSB-141; PDL Meters: Measurement and Application Issues	Published in 2005
TSB-142	TSB-142; Optical Return Loss Meters: Measurement and Application Issues	Published in 2005
	TIA/EIA-455-B	Overlooked changes from initial release prevent release. Tom Hanson and Lorenz Cartellieri to revise document references to comply with TIA requirements to not list TSB under normative references

Document Maintenance / Review Document Status

5430000	FO-4.5	Generic Specification Field Portable Electronic Instruments for Optical Fiber System Measurements
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Withdrawn after vote at last meeting

455-179	FO-4.5	Inspection of Cleaved Fiber End Faces by Interferometry
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No objections to the reaffirmation
Unanimously voted to reaffirm the document

Recent updates to IEC documents

61315 (FOTP 231)

The 61315 Ed. 2 is also conforming to the GUM (International Guide on the expression of Uncertainty in Measurement) and VIM (International Vocabulary of Metrology). New revision also allows the “two attenuator” method for linearity calibration.

61744 (FOTP 224)

For the 61744 (CD) Ed. 2, the main modification is to additionally allow the use of vacuum wavelengths to air wavelengths, which were the only ones allowed in Ed. 1. This is described in a new informative Annex E.

61746 (FOTP 226).

For the 61746 (OTDR) Ed. 2, the main modification is the requirement for Reflectance calibration and its description in section 8, Annexes E and F. I will let Michel Bouquain (project leader) give more details.

FO-4.5 authorized the revision by re-adopting these documents

PN-3-0066	TSB-143; Fiber Optic Power Meters: Measurement and Application Issues	Removed the “shall” and replace with “may”. Resubmitted for publication
PN-3438C	ANSI/TIA/EIA-455; Standard test procedure for fiber optic fibers, cables, transducers, sensors, connecting and terminating devices, and other fiber optic components	Lorenz and Tom Hanson to address moving the TSB into a informative section of the document and then resubmit for publication under revision C

New Business

PROJECT	SCOPE	ACTIONS
	MM OTDR calibration project	Currently an open work item in the IEC 86B WG4 to revise OTDR calibration document and include MM OTDRs. However it seems that only distance calibration is currently being addressed. FO-4.5 will provide input to 86B WG4 that attenuation and reflectance calibration is also needed.
	Calibration of equipment used to inspect fiber optic endfaces	Work on FOTP-238 has been canceled and the need for a visual inspection standard might be filled by adopting the new version of the IEC document (currently out for ballot in IEC).
	Discussion on the proper test method for reference quality jumpers.	Due to lack of clear criteria for a reference quality connector / jumper working on a standardized verification method seems to be premature. FO-4.5 members are bringing examples of internal procedures to the next meeting to possibly start a draft document or proposal and further discussion.

Summary Report from TIA FO-4.5.1 WG on Round Robin Testing & Calibration (Chair: Tim Drapela/NIST)

The WG reviewed the status of the ongoing Return Loss Round Robin and took action to intercept test artifacts to conduct further analysis on RL versus wavelength sensitivity after some wavelength sensitivity was discovered on a limited number of samples.

Reviewed need for additional SRM

Reviewed a proposal for co-location of TR-42.8 and FO-4; Bob Jensen gave an overview of what is being proposed as far as co-location of the two groups.

4 NEW BUSINESS

Discussion was held over the feasibility of merging with TR-42. Some concerns that were expressed include:

- Having three meetings a year and whether FO-4 member companies can support an additional meeting a year.
- Loss of identity, possibility of changing scopes of FO-4 and TR-42.

4.1 Schedule review

A schedule for the next meeting was discussed and will be developed further with TR-42 between this meeting and the February 2007 meeting.

4.2 Future meetings

February 5-9

Hotel TDB

5 ADJOURNMENT

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

The closing plenary meeting adjourned at 11 AM on June 22, 2006.

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

Co-chairs
Steve Swanson
Tom Robinson

Bob Jensen, FO-4 Secretary