

ISO/TC 130/WG 2 (Prepress Data Exchange)
39th Meeting
Sept 21-22, 2009
Beijing, China

1. Call to Order - Welcome - Introductions - Roll Call of Experts – Announcements

The meeting was called to order at 16:00 by David McDowell, Convener. The host (the Standardization Administration of the PRC (SAC), the National Technical Committee 170 on Printing of the Standardization Administration of China (SAC/TC 170), the General Administration for Printing and Publishing (GAPP) and the Printing Technology Association of China (PTAC)) was thanked for the lunch, facilities, food and all the preparations.

Mary Lou Pelaprat was introduced as our ISO Program Manager and Editor and officially welcomed to the meeting.

The following technical experts were in attendance and introduced themselves:

David McDowell, Convener	NPES	USA
Mary Abbott, Secretary	NPES	USA
Debbie Orf, Secretary	NPES	USA
Beltrami Alessandro	Assoc. Arti Graf. Bo.	Italy
Victor Asseiceiro	GMG Americas	USA
Ray Cheydleur	X-Rite	USA
Clark Chung	Heidelberg China Ltd.	China
Elcio de Sousa	ABTG	Brazil
Phil Green	LCC	UK
Barros Gustavo	Tetra Pak	Sweden
Aran Hansuebsai	TISI	Thailand
Wenqiong He	Shenzhen Polytechnic	China
Meiling Ho	GMI Company	China
Akihiro Ito	Fuji Xerox	Japan
Andy Kraushaar	Fogra	Germany
Haoxne Lin	Beijing Inst. of Graphic Communication	China
Paul Lindström	Malmö University	Sweden
Zhen Liu	Univ. of Shanghai for Science & Tech.	China
Heath Luetkens	CGS	USA
Makoto Matsuki	NTT Quaris	Japan
Bruno Mortara	ABTG	Brazil
Koichi Osada	JPMA	Japan
Mary Lou Pelaprat	ISO/CS	Switzerland
Craig Revie	Fujifilm	UK
Cai Shengyan	Tianjin Univ. of Science & Technology	China
Santi Songsermsawas	Color Group Thailand	Thailand
Hiroaki Takita	Dai Nippon Printing	Japan
Supree Thongpetch	TISI	Thailand
Hitoshi Urabe	Fujifilm	Japan
Larry Warter	Fujifilm Graphic Systems, USA	USA

Xiaoxia Wan	Wuhan University	China
Erwin Widmer	Ugra	Switzerland
Xiuping Zhao	Tianjin Univ. of Science & Technology	China
Yuanhong Zhu	Shenzhen Polytechnic	China

2. Review and approve agenda (N 1349)

The committee reviewed the draft agenda (N 1349), which had been distributed prior to the meeting. The following were added:

- Review recommended withdrawal of ISO 15930-5 under item 7a
- Japanese status report from JSA about RGB workflow as 17a
- Item numbers 10, 11 and 17 were moved to the beginning of the agenda, immediately following Item 5, to accommodate presentations by Revie and Urabe at the forum being held on Tuesday.

The agenda was approved as amended.

3. Identification of new documents

The WG2 documents listed below were identified as having been distributed since the last meeting (including documents provided at this meeting). Documents not yet distributed will be posted on the WG2 portion of ISO Livelink.

- TC130/WG2 N 1332 Status report on TC 130 WG 2 projects
- TC130/WG2 N 1333 Attendance list from May 2009 meeting in Fort Worth, Texas; 5/27/09
- TC130/WG2 N 1334 National Body Report from Japan to WG2 re RGB workflow
- TC130/WG2 N 1335 "A Brief Introduction to Markup Languages and Xml", Cheydleur, May 2009
- TC130/WG2 N 1336 Meeting notice for September 2009 in Beijing; 6/8/09
- TC130/WG2 N 1337 Presentation from Revie on communication of proof approval metadata
- TC130/WG2 N 1338 Update on CxF, Cheydleur, May 2009
- TC130/WG2 N 1339 Minutes of the 18 May 2009 meeting in Ft. Worth, TX
- TC130/WG2 N 1340 Action Items from the May 2009 meeting
- TC130/WG2 N 1341 "Data Elements Needed in ISO 17972 for Soft Proofing", Luetkens/Kraushaar
- TC130/WG2 N 1342 Proposed publication draft of ISO 12640-4
- TC130/WG2 N 1343 Proposed resolution of comments on ISO/DIS 12640-4
- TC130/WG2 N 1344 Data elements needed in ISO 17972 for press or proof acceptance/conformance data reports; Kraushaar
- TC130/WG2 N 1345 Email distributing proposed publication draft of ISO 12640-4 and proposed resolution of comments for 2-week review; 7/22/09
- TC130/WG2 N 1346 Data elements needed for ISO 17972 for scanner target characterization data, characterization data sets, target measurement data, and target definition
(AI 09-03)

- TC130/WG2 N 1347 Result of voting on Systematic Review of ISO 12642-2
- TC130/WG2 N 1348 Result of voting on Systematic Review of ISO 12642-1
- TC130/WG2 N 1349 Draft Agenda for 21-22 September 2009 meeting in Beijing, China
- TC130/WG2 N 1350 Status Report of WG2 projects
- TC130/WG2 N 1351 "ReadMeFirst.txt"; summary of files relating to AI 09-05 to identify the data elements needed in ISO 17972 for spot color processing
- TC130/WG2 N 1351a "Spot colour measurement requirements.pdf"
- TC130/WG2 N 1351b "Example Red Spot.txt"
- TC130/WG2 N 1351c "SpotInkCharacterisationExample.xml" (exist in electronic format only)
- TC130/WG2 N 1351d "SpotInkCharacterizationExample – 3inks.xml" (exist in electronic format only)
- TC130/WG2 N 1351e "SpotInkCharacterisationSchema.xsd" (exist in electronic format only)
- TC130/WG2 N 1351f "SpotInkCharacterisationStylesheet.xsl"
- TC130/WG2 N 1352 Letter from McDowell to David Zwang, Chair of Ghent Workgroup
- TC130/WG2 N 1353 Liaison report from Ecma TC46 (OpenXPS) to ISO TC130/WG2
- TC130/WG2 N 1354 CXF Process Control Points Plates
- TC130/WG2 N 1355 Publication draft of ISO 12640-4 sent to ISOCS
- TC130/WG2 N 1356 Final Resolution of Comments on ISO/DIS 12640-4
- TC130/WG2 N 1357 Email from McDowell re Systematic Review of ISO 15930-5; 9/8/09
- TC130/WG2 N 1358 Consolidated list of data elements needed in ISO 17972 for soft proofing; 9/17/09

There was concern noted that documents available on Livelink are hard to download when using a Macintosh computer. Pelaprat indicated the concern should be forwarded to www.iso.org as a complaint.

Experts were also reminded that any changes in contact information must be sent to ISO through their country's national standards body to update the ISO Global Directory.

4. Review and approve minutes of May 2009 meeting (N 1339)

The committee reviewed the minutes of the 18 May 2009 meeting held in Fort Worth, Texas, USA (N 1339). There were no corrections noted and the minutes were approved as distributed.

5. Review status of action items from May 2009 meeting (N 1340)

The committee reviewed the action items from the May 2009 meeting (N 1340), noting the status of each as follows:

#	Action Item	Status
08-02	Drümmer, Donahue and Isaacs will develop an article to be placed in the ISO Bulletin and other publications regarding the PDF/VT work.	Action Item: 09-10 Laurel Brunner will coordinate with Donahue, Drümmer and Isaacs to develop this article
09-01	McDowell will review with Urabe and Holm the possibility of developing a Technical Report regarding the application and relationship of various parts of ISO 12640.	Action item: 09-11 Preliminary work done as IS&T Reporter McDowell to follow with Mortara and Pelaprat re follow up.

09-02	McDowell will prepare a resolution for the Beijing Plenary recommending that ISO 12640-1 be reaffirmed.	Completed
09-03	McDowell will identify all the data elements needed in ISO 17972 for the following: scanner target characterization data, characterization data sets, target measurement data, and target definition by July 31.	Completed (N 1346)
09-04	Kraushaar will identify the data elements needed in ISO 17972 for press or proof acceptance/conformance data reports by July 31.	Completed (N 1344)
09-05	Revie and Smiley will identify the data elements needed in ISO 17972 for spot color processing by July 31.	Completed (N 1351 – N 1351f)
09-06	McDowell will send request to WG 4 to address substrate properties, ink data and gloss measurement data requirements for ISO 17972 by July 31.	Completed
09-07	Kraushaar and Luetkens will identify the data elements needed in ISO 17972 for soft proofing by July 31.	Completed (N 1341)
09-08	Warter , Smiley and Mortara will identify the data elements needed in ISO 17972 for calibration and plating TVI curves by July 31.	Completed (N 1354)
09-09	Cheydleur will consolidate the lists of data elements from Action Item2 09-07 for discussion at the September meeting. [ISO 17972]	Completed (N 1358)

6. Status of documents and pending projects (See written report N 1350)

McDowell reported on the status of projects, results of periodic review and Technical Reports as documented in N 1350.

7. Report on status of work of WG2 Task Forces and JWG's

7a TF 2 – PDF/X

McDowell reported that TC130 WG2/TF2 has begun work to determine if a revision is needed to address spot color and other issues related to packaging. Variable layers and spot colors will be discussed at the WG/TF2 meetings later this week.

McDowell noted he has been informed that there seems to be no known implementation of ISO 15930-5; and the capabilities defined by Part 5 are now defined more effectively in Part 8. Further, the reference for ISO 16612-2 is Part 8. He suggested that WG2 should consider withdrawing ISO 15930-5.

Makoto Matsuki noted that he had received the following information from a member of the Japanese committee. PDF/X-2 format is used as one of the output formats of Antenna House's AH Formatter V5.0 software. AH Formatter V5.0 is software used to format XML/HTML documents and output them to paged media such as PDF, XPS and paper. It supports page layouts specified using either XSL-FO (ExtensibleStylesheet Language - Formatting Objects) or CSS (Cascading StyleSheets) including CSS3 (Cascading StyleSheets Level 3) which is under development by W3C.

The following are related web sites (in English).

Specification:

<http://www.antennahouse.com/product/ahf50/pdfoutput.htm>

Manual: (PDF/X-2 in page 94)

<http://www.antennahouse.com/XSLsample/help/V50/AHFormatterV50.en.pdf>

He noted he has no information about whether PDF/X-2 is used in the actual workflow or not at this time. He said PDF/X-1a is used as output format in some actual workflows.

Action Item 09-12: Matsuki will review with Antenna House by November 30 to determine if ISO 15930-8 would satisfy their requirements, or if they still require ISO 15930-5.

If it is determined that ISO 15930-5 is not needed in Japan, a letter ballot recommending withdrawal of the standard will be circulated.

7b TF 3 – ISO 16612-2 -- PDF/VT

McDowell reported that ISO/DIS 16612-2 -- *Graphic technology –Variable data exchange – Part 2: Using PDF/X-4 and PDF/X-5 (PDF/VT-1 and PDF/VT-2)* is currently out for ballot, closing January 14. TC130 WG2/TF3 is not meeting here, but has been meeting by teleconference on a bi-weekly basis to develop a set of application notes.

7c JWG 7 – ICC

McDowell reported that a revision of ISO 15076-1, *Image technology colour management — Architecture, profile format and data structure — Part 1: Based on ICC.1:2004-10*, is out for DIS ballot which closes 12/24/2009.

7d JWG 9 – ISO 12640-5

JWG 9 met immediately prior to the meeting of WG2. The minutes of that meeting are contained in JWG9 N 030.

It was agreed that as soon as we have a proposed image set, a working draft of ISO 12640-5 that incorporates the recommended image set would be prepared and distributed. In addition, a reduced resolution version of the images (with the profile embedded) would be placed on a website (ICC website proposed), in a password-protected area, so that anyone in the working group would be able to download and review them

8. Report on results of Systematic Review

8a ISO 12640-1:1997, *Graphic technology – Prepress digital data exchange – Part 1: CMYK standard colour image data (CMYK/SCID)*

The proposal from Sweden to revise was discussed at the meeting in Fort Worth and was not supported by WG2. The following resolution was prepared and forwarded to the Plenary for action. " ISO/TC130 notes the comment from Sweden as part of the 2009 SR of ISO 12640-1:1997 and responds that images in the standard are intended to be process-independent CMYK data and as such do not, and should not, refer to any particular part of ISO 12647."

8b ISO 12642-1:1996 *Graphic technology – Prepress digital data exchange – Input data for characterization of 4-colour process printing*

There was a comment from Germany recommending that the normative wording of Clause 4.4 be removed and that instead the document should refer to ISO 28178.

In response to that comment, the following resolution as prepared for Plenary action:
"Administratively revise this standard in order to replace sub-clause 4.4, and the pointers to it, with a pointer to ISO 28178."

8c ISO 12642-2:2006 *Graphic technology – Input data for characterization of 4-colour process printing – Part 2: Expanded data set*

ISO 12642-2 was reconfirmed.

9. Report on progress of DIS 12640-4

The DIS ballot of 12640-4 *Graphic technology – Prepress digital data exchange – Part 4: wide-gamut display-referred standard colour image data [Adobe RGB(1998)/SCID]* was approved with no negative votes. All comments were resolved by email discussion and the document is in preparation for publication at ISO/CS.

10. ISO 17972 - *Graphic technology – Prepress data exchange – Colour data exchange format*

10a Summary of spot color data

Revie reported on the data he provided relating to the CustomResources for spot color that would be required for ISO 17972. The intent is to ensure that the recipient of the document will be able to print the color of the document in the way in which it was intended. The results are contained in the series of documents N 1351-N 1351f, and summarized in N 1351a. He noted that sometimes taking the maximum amount of data suggested is impractical, although the benefits in some cases make it worthwhile. In discussing the number of tint levels (over substrate and over black) he noted that the bare minimum is 3 but an ideal minimum set would be 11 to show spot color requirements.

Within CxF the SpotInkCharacterization element is the container element for the metadata for a single spot ink. Revie reviewed the information that needs to be communicated and the set of required tags needed. It was pointed out that the measurement condition M1, M2 or M3 should be included in the minimum spot colour requirements. These measurement conditions must be in the required tag. Screening conditions should also be included: half tone screening used, printing press, type of printing flexography, gravure etc. There was a concern that dot gain does not address transparency.

Revie provided an example of the proposed CxF structure (without the XML syntax for ease of reading). He noted that the committee needs to ensure that the set of names is a reasonable set. He also noted that among the documents circulated, there were 5 documents to demonstrate one use of a schema definition.

During discussion the following issues were raised by the committee:

- a. Tint levels: It is felt that three tint levels on substrate and three on process black would be useful to give good information regarding spot color performance, and seems to be a practical way to obtain information.
- b. Background tags: Use the names such as process black, substrate, etc.
- c. TintLevel tag: Either indicate the tint level (in percentage) of the patch to which the measurement applies, or indicate the value in the range 0-1.
- d. Steve Smiley suggested (by e-mail) providing opacity values rather than opacity calculation. Revie will discuss this further with Smiley.

10b Report of X-Rite status

Cheydleur reported that the CxF3 schema is now complete and published. The basic software development kit (sdk) will be available for download at www.colorexchangeformat.com. He pointed out that this can potentially be used to develop a custom resource and that in developing a product to support the standard the sdk can be used, but is not required.

Cheydleur reviewed his summary of the data elements provided by other committee members (N 1358) and it was agreed the names of some of the categories must be changed. It was noted that most data elements listed are fixed by other standards at this time, and although it is possible to move forward with those, some mapping might be necessary. However, there are some elements that are not yet fixed, which are better described as categories. It was agreed that the committee should review these categories and decide which to include in the first version of the standard.

It was suggested that it would be ideal to have some “public” access to the list of custom resources and profile(s) from a website, as well as being defined in the standard. This would be a website to which the standard could point, indicating that the “profile” there is provided in support of standards activity. It was noted that the soft proof evaluation, plate process control and some other categories are in flux. It was agreed that the names as defined in an existing

document need to be determined so as to have consistent nomenclature. It was determined that in the process of moving to CxF3 the nomenclature will be consistent. It was felt that identifying common names is important so as to avoid creating a confusing clutter of nomenclature.

As a result of discussion, the attendees at the meeting agreed to the following:

- ISO 17972 will be a multi-part document where part one is a description of the use of both CxF3 and Graphic Arts Specific Custom Resources.
- Parts 2 and onward will each be a description of a custom resource container applicable to a specific task or application area.
- The initial proposal will be parts 2 and 3 addressing the custom resources requirements of scanner targets and printer targets.

Action item 09-13: Cheydleur to prepare an initial draft of part 1 of ISO 17972.

Action item 09-14: Cheydleur to prepare custom resource containers for part 2 and 3 of ISO 17972.

Action Item 09-15: Revie/Smiley to prepare custom resource container for part x of ISO 17972, for spot color data.

Action Item 09-16: McDowell to review multi-part standard concept and vision for ISO 17972 with ISO/CS to ensure that our proposal is acceptable.

Cheydleur provided an example of a CxF viewer that will be available on www.colorexchangeformat.com.

11. Proofing approval metadata

Revie reported that feedback from industry experts concerning the proposal to add proof approval metadata to PDF/X indicates that this is too difficult to implement and is not needed.

However, one part of the proposal that was considered important was providing a clear connection between a hard copy proof and the digital file from which it was produced. In discussing the use of the filename to identify the reference PDF file it was pointed out that using the ID from the trailer of the file was more reliable because it identifies the original file and any variants. Unfortunately, the ID from the trailer of the file is not readily presented to users by PDF/X readers and is not easy to check.

It was proposed that when making a proof of a PDF/X document the margin information should include the filename and the date and time of the last modification and should also include the document ID. Also where the document ID is included it was suggested that this be printed as two hex strings and that the last 5 digits of each string be highlighted in some way to assist in identification. As an example the filename and date and time can be used for first identification and then the document ID used to provide confirmation.

It was questioned whether this is an issue for PDF/X or for ISO 12647-7, or both. It was felt it is definitely an issue for ISO 12647-7, but a PDF/X conforming reader should be encouraged to present document identification metadata.

It was noted that it is possible for applications to modify files without updating the document ID. It was questioned whether or not this is felt to be a problem in practice, and if there is any way to resolve this problem. It was agreed to discuss this item in the TC130 WG2/TF2 meeting and that it is a closed issue for this group.

Action Item 09-17: Revie will provide input into TC130 WG2/TF2 concerning our conclusions regarding proofing approval metadata.

12. Report on status of joint work with ISO TC 171/SC2

TC171/SC2 is standardizing PDF/A in WG5 and the PDF specification in WG7.

12a WG5 - ISO/CD 19005-2 (PDF/A-2)

McDowell reported that ISO/CD 19005-2 *Document management – Electronic document file format for long-term preservation — Part 2: Use of ISO 32000-1 (PDF/A-2.)* is currently in CD ballot.

12b WG7 - ISO 32000 (PDF)

McDowell reported that ISO 32000 *Document management — Portable document format — Part 1: PDF 1.7* has been published and that work is underway on Part 2. Part 2 will extend the PDF format by adding enhanced features that are not now available. Input to Part 2 to is being received from a variety of sources including both TF2 and TF3 of TC 130 WG2.

13. Report on status of CIE work impacting TC130/WG2

CIE TC1-75 is continuing their work on developing joint CIE/ISO standards largely based on various elements of CIE Publication 15.

14. Report of TC42 related technical work of interest to TC130/WG2

14a ISO/TC 42 JWG 20 – Digital Cameras

Urabe reported that ISO 17321-2 is at stage 0. Jack Holm will submit the draft based on the AMPAS (Academy of Motion Picture Arts and Sciences) document on how to convert colorimetric data from RAW data.

Action Item 09-18: McDowell to circulate minutes of WGs 18, 22, 23, and 24 from the upcoming TC42 meeting to TC 130 WG2 for information.

14b ISO/TC 42 JWG 21 – Densitometry

All four parts are at ISO/CS for publication. The draft documents sent to ISOCS are available as TC 130 N 1510 - TC130 N1513 (and WG3N828 - WG3N831). These should be published by the end of the year.

14c ISO/TC 42 JWG 22 – Color Management Gamut metadata

JWG22 is in liaison with IEC/TC 100. Urabe reported that the only active work is IEC 61966-12 (Gamut ID).

Action Item 09-19: McDowell will write a letter to TC42 JWG 22 reminding them of the need to circulate documents to TC130.

14d ISO/TC 42 JWG 23 – Extended color encoding

ISO/NWI/CD 22028-4 is in ballot as a Technical Specification.

ISO 22028-3 is being revised to add floating point. This work is at stage 0.

14e ISO/TC 42 JWG 24 – Revision of ISO 3664, Viewing conditions

ISO 3664 is completed and published. JWG 24 is in recess at this time.

14f ISO/TC 42 WG18 – Electronic still picture imaging

Urabe reported TIFF/EP is comprehensive to support many different use cases, including backward compatibility with current TIFF readers and support of Adobe DNG. There are two interoperability profiles defined:

- Profile 1 (proposed extension .tif) will provide an intended output-referred interpretation (reproduction color appearance), supporting any color encoding that can be supported using an ICC profile, including output-referred, scene-referred, and demosaiced camera raw. It should be readable by any reader that supports ICC color management. sRGB will be the default interpretation if no ICC profile is provided. Backward compatibility with current TIFF readers is desired for cases where the current reader supports sRGB or ICC profiles. DNG metadata is allowed to facilitate re-processing of Profile 1 camera raw or scene-referred images in camera raw applications, but is not required. Profile 1 does not support un-demosaiced raw camera images.
- Profile 2 (proposed extension .dng, if Adobe is in agreement) is intended for camera raw images, including un-demosaiced images. This profile is intended for reading by camera raw applications and a defined output-referred interpretation may be included but is not required, i.e. there may not be any reproduction color appearance specified in the file, as it will be determined by the user and camera raw application. This format will be similar to DNG 1.3, which serves as the starting point for development.

At this point, the discussion is focused on READER function with only implied WRITER function. More time is needed to finalize the findings.

15. Liaison Reports (written reports invited)

15a International Color Consortium (ICC)

Revie reported that there is an ongoing discussion in the ICC about spot color handling in PDF.

15b European Colour Initiative (ECI)

There is a new ECI alternative test suite, but funding is lacking to proceed with this. There was an appeal for help fund this work. It was agreed to pursue this in the WG2/TF2 meeting.

15c Ifra

No report

15d Ecma

No report

15e WG1

No report

16. National Body Activities (reports invited)

16a JSA (N 1359)

Urabe reported on research being done concerning RGB workflow in Japan. The report is available as document N 1359. He notes that RGB data submission to the printing workflow is very important. Using the reversal film as an example he pointed out that reversal film was generally a perfect input because it could be easily viewed by everyone in the process and was not subject to interpretation. The goal is to find a way to allow digital camera RGB data to also be such an input.

Urabe pointed out it is very difficult and expensive to create the correct appearance on a standardized monitor. Appearance is dependent on viewing condition, calibration, etc. and workers who are not trained properly cannot complete the process. The most important issue is how to transfer and share the appearance of images among the various stakeholders throughout the workflow. The challenge is defining the relationship specification of “reference printer” between RGB image data and color chromaticities on print.

There were 2 key issues identified:

- F1 - Reference characteristics between scene-referred and monitor-referred

- F2 - Reference characteristics between monitor RGB and printed color

Both F1 and F2 can be broken down into smaller pieces for specific situations. Two of these were proposed as key initial steps.

- F1-A: to define the relationship between studio scene data and RGB data. (It was noted that this is the easiest to pursue)
- F2-A: CMYK-simulated print vs. a Monitor-appearance print

Looking at the characteristic curves of several digital still cameras (DSC) shows that in the middle density range they all have nearly the same tone characteristics. Further when these are compared to the tone characteristics of a typical reversal film and the RIMM/ROMM tone conversion curve in the middle density range they are all very similar.

The current status in Japan is an experimental study of F1-A and F2-A which will start in a month. After this work is completed, detailed information will be reported to ICC, TC130, and TC42. This could then result in a new work item proposal.

The intent of this workflow and these transforms needs to be defined in ways easily understandable to everyone involved. It was felt that the current explanations are not clear. Many of the terms are different whereas the concepts are basically the same. It was agreed that the terminology needs to be clarified.

Action Item 09-20: McDowell, Revie, Leutkens, Warter, Matsuki and Urabe will collaborate to write a description of the intent and to make clear the terms and concepts involved in integrating digital data from cameras into the printing production workflow. This is dependent upon the completion of the Japanese National Body study.

17. Other Items

Mortaro reported this is the 19th year of the National printing holiday prize in Brazil. Last year 12647-2 was introduced and this year 12647-7 was introduced both of which created a lot of interest. This has proven to be a good tool to generate interest in standards work in Brazil.

18. Future meeting plans

The next TC130 working group meetings are scheduled for April 19-24, 2010 in Switzerland. WG2 will require 1 day WG2/TF2 and WG2/TF3 will also meet and require 2 days and 1 day respectively.

The Fall meeting will held in conjunction with the TC 130 Working Group and Plenary meetings October 11-16, 2010 in Brazil

19. Adjourn

There being no further business the meeting was adjourned.