

Minutes:
ATSC Technology and Standards Group (TSG)

16 May 2007, 9:00 a.m. until 12:00 noon EDT
PBS, 2100 Crystal Drive
Arlington, VA 22202

1. WELCOME, INTRODUCTIONS, AND DETERMINATION OF QUORUM

Chair William Miller (SMPTE) called the meeting to order at 9:00 a.m. at the headquarters of PBS in Arlington, VA. He welcomed those in attendance and asked each person to identify him or herself. He reminded all participants of the confidentiality requirements of this meeting and the ATSC Patent Policy. The attendance list is given in **ATTACHMENT 1**. Secretary Jerry Whitaker (ATSC) reported that a quorum was present.

2. APPROVAL OF PROPOSED AGENDA

Chair Miller asked for consideration of the draft agenda, distributed to the TSG reflector on May 1, with an update posted on May 10 (**ATTACHMENT 2**). He proposed adding an item 7.5 "Other," which was accepted by the group. No further changes were requested and the draft agenda was approved as amended.

3. APPROVAL OF THE DRAFT MINUTES OF THE LAST MEETING

Chair Miller called members' attention to the draft Minutes of the February 8 TSG meeting, distributed to the TSG reflector on March 28 (**ATTACHMENT 3**). Mr. Whitaker reported that three editorial corrections had been identified by Mike Dolan (Nielsen), Pat Waddell (Harmonic), and Chair Miller. All were designed to clarify the text. In addition, a correction to the attendance list was identified by MPAA. (See the Rev. 6 redline.) No further changes were requested and the document was approved as amended.

4. OPENING REMARKS

Chair Miller noted that TSG is working on a compressed time schedule, with the ATSC Planning Committee meeting following this meeting at 1:00 p.m. He went on to thank PBS for hosting today's meeting.

5. COMMENTS BY THE PRESIDENT (MARK RICHER)

Mark Richer (ATSC) reported on current activities within the ATSC.

5.1 Status of Ballots

The status of ballots is detailed in **ATTACHMENT 4**. In particular, Mr. Richer noted that:

- ATSC's newest standard, A/71 "ATSC Parameterized Services Standard," has been published.
- Revision A of A/78, "Transport Stream Verification," has been approved by the ATSC membership and publication is pending.

5.2 Other

Additional items covered in Mr. Richer's reported included the following:

- The ATSC Annual Meeting is set for tomorrow at the Ritz-Carlton Pentagon City. The program, which starts at 8:00 a.m., will focus on the Strategic Plan.
- The Annual Meeting reception will be held this evening beginning at 6:00 p.m. at the Ritz-Carlton Hotel.
- The “DTV Hot Spot” at the 2007 NAB Convention went very well. Mr. Richer thanked the participating organizations for making this year’s event the best ever.

6. BRIEF REPORTS ON ACTIONS FROM THE PREVIOUS MEETING

The following action items were developed at the February 8 meeting of TSG:

- 1) Pat Waddell and TSG/S6 to review the new work assigned by the Board relating to audio implementation issues, specifically levels and time sync with video, and report back to TSG at the next meeting on a plan for moving forward.
Completed. On agenda.
- 2) Charles Einolf and TSG/S9 to review the new work assigned by the Board relating to possible enhancements to fixed indoor reception and report back to TSG at the next meeting on a plan for moving forward.
Overtaken by events.
- 3) Rich Chernock to lead an ad-hoc-group (TSG-3) consisting of specialist group chairs and other interested members to examine the implications of using adaptation fields as proposed for A-VSB and to bring back a preliminary report at the next meeting.
Completed. On agenda.
- 4) Jerry Whitaker to set up the necessary reflector and other resources for the TSG AHG on adaptation field usage.
Completed.
- 5) Pat Waddell to draft liaison to DVB to request appropriate documents relating to adaptation fields and forward it to Mark Richer and Rich Chernock.
Completed.
- 6) Rich Chernock to resolve comments relating to the working draft revision of A/78 within TSG-1 and then to post the document to the TSG reflector for comment. After a two week comment period, if no further items are raised, ATSC staff will issue a letter ballot on the document as a Proposed Standard.
Completed.
- 7) The ATSC Architecture Team to discuss possible documentation avenues for the AVC and VC-1 candidate standard documents.
Closed. See item 13.3.
- 8) Pat Waddell to work with Mike Dolan and Jerry Whitaker to develop appropriate explanatory text for the ATSC web site posting of CS/TSG-674r1.
Completed.
- 9) Jerry Whitaker to post S6-434 as a Candidate Standard for a period of time ending 20 September 2007 upon completion of work on the document by TSG/S6.
Completed.
- 10) Sam Narasimhan to post his calculations relating to low bit rate coding to the TSG, TSG/S6 and TSG/S8 reflectors.

Completed.

7. NEW WORK ITEMS FOR DISCUSSION

7.1 Request from Board to Develop ATSC M/H Standard

Mr. Richer reported that the Board has approved a New Work Item on mobile and handheld services (PC-149r6, **ATTACHMENT 5**). He added that the Board has put a very high priority on this work.

7.1.1 Proposed Formation of Specialist Group on ATSC M/H

Chair Miller recommended that a new specialist group be established to review proposals and develop the necessary standards for ATSC M/H. Sterling Davis (Cox Broadcasting) **moved** that a new Specialist Group on ATSC M/H be established. The motion was **seconded** by Art Allison (NAB). Merrill Weiss (MWG) expressed concern about the level of coordination needed with other specialist groups, in particular TSG/S9. Mr. Richer acknowledged this is relatively new ground, but that given the intended scope of ATSC-M/H—namely, a complete systems solution—having responsibility resting with a single specialist group has a number of advantages. The motion was **approved** on a show of hands.

Chair Miller announced that Mark Aitken (Sinclair Broadcast) has agreed to serve as Chair of the group, to be known as TSG/S4. Dan Borowicz (ION Media) has agreed to serve as Vice-Chair.

7.1.2 Approval of ATSC-M/H RFP

Mr. Richer called attention to a draft Request for Proposals (RFP) on ATSC-M/H, drawn directly from the NWIP (**ATTACHMENT 6**). Chair Miller asked for TSG approval of the document, which he noted has already been reviewed by the Architecture Team. Discussion followed on specific items within the draft RFP.

Mr. Aitken **moved** to approve the RFP on ATSC-M/H as submitted. The motion was **seconded** by Mr. Borowicz. The motion was **approved** on a show of hands.

7.2 Request from the Board to Standardize Advanced CODECS

Mr. Richer called attention to the following motion approved by the Board at its February 22 meeting: "...TSG to consider standardizing one or more advanced codecs in a separate document from A/53, and that standardization be for both the main stream and all enhancement streams."

Chair Miller noted that TSG/S6 is currently reviewing this item. He thanked Pat Waddell (Harmonic) and TSG/S6 for their ongoing efforts in this regard.

7.3 Possible NWIP on Non-Real-Time Services

Mr. Richer noted that the Planning Committee PC-3 AHG has been working toward completion of an NWIP on Non-Real-Time (NRT) services, a draft of which was provided to TSG via a posting to the reflector on April 24 (**ATTACHMENT 7**). He said the PC expects to complete this document at its meeting later today, after which it will go to the Board of Directors for consideration.

To avoid a delay in beginning this work, Chair Miller suggested that the NWIP, if approved by the Board, be tentatively assigned to TSG/S13 since much of the work is likely to focus on data broadcasting elements. He asked Rich Chernock (Triveni Digital), as Vice-Chair of TSG, to

monitor work on NRT going forward and ensure coordination among the Specialist Groups of work outside of S13's scope.

7.4 Reactivation of TSG/S2

Chair Miller announced that Thomas Jung (Alticast) has agreed to serve as Chair of the reactivated TSG/S2 Specialist Group on ACAP. He said reactivation of TSG/S2 is necessary to address certain issues that have been identified during the ACAP Demonstration and Field Trial Project undertaken in the Planning Committee. The ACAP group has identified, among other things, divergences between ACAP and OCAP. Chair Miller encouraged interested persons to participate in the TSG/S2 work, which should be within the next few weeks.

7.5 Other

Mr. Richer noted that the Board has been considering recommending that TSG review recent FCC test results and other issues relating to reliable reception, and report back whether a revision of A/74, "ATSC Recommended Practice: Receiver Performance Guidelines," might be appropriate. He said the Board may take action on this issue at its meeting on May 18. Chair Miller said advance notice to TSG/S10 is appropriate.

8. ARCHITECTURAL TEAM

Chair Miller noted that the Architecture Team has discussed in some detail how to best handle the new work on ATSC-M/H, and the expected new work on NRT services.

9. REPORT OF THE TSG-1 GROUP (RICH CHERNOCK)

Mr. Chernock noted that the revision of A/78 has been approved by the ATSC membership, with publication of A/78A expected within the next week or so. He said TSG-1 has no further work at this point.

10. REPORT OF THE TSG-3 GROUP (RICH CHERNOCK)

Mr. Chernock, Chair of TSG-3, reported on work conducted by the TSG AHG on Adaptation Field Usage and Cross-Layer Issues (**ATTACHMENT 8**). He called attention to the Scope of TSG-3, as distributed to the TSG reflector on March 16 (**ATTACHMENT 9**).

10.1 Status Report

Mr. Chernock reported that TSG-3 has completed a portion of its work. One of the major tasks was to create a survey of ATSC and related standards to:

- Identify all packet types that cannot have adaptation fields and their potential frequency.
- Identify packet types that can or must have adaptation fields.
- Identify any constraints in field usage within adaptation field syntax that would affect potential future ATSC usage.
- Identify usage of packets that, although the adaptation fields are not explicitly prohibited, are not expected in practice (e.g., DSM-CC sections).

Mr. Chernock said the remaining TSG-3 activities, which are still in progress, include the following:

- Identify and evaluate the advantages and disadvantages of proposals that employ methods that cross layers, particularly the use and restrictions of transport layer packets in A-VSB that enable enhancements or improvements in physical layer performance.
- Determine if it is technically feasible to protect against downstream devices destroying adaptation field data.

Mr. Chernock said that TSG-3 felt that it would be useful to distribute the survey to TSG before the remaining activity is completed. He called attention to TSG3-003r17 (**ATTACHMENT 10**).

Current TSG-3 activities include the following:

- Examine proposed A-VSB modifications to address collisions
- Identify remaining conflicts and necessary choices
- Assess the required complexity for affected equipment
- Recommend one or more mechanisms for handling private data in adaptation fields

Mr. Allison **moved** to amend the Scope of TSG-3 to include not only identifying conflicts, but also to providing recommendations for solutions on cross-layer issues to TSG. The motion was **seconded** by Mr. Waddell. The motion was **approved** on a show of hands.

11. REPORT OF THE SPECIALIST GROUP ON PSIP METADATA COMMUNICATION, TSG/S1 (ART ALLISON)

Art Allison (NAB), chair of TSG/S1, noted that the specialist group has not met in some time. He said there may be certain issues to deal with after SMPTE S22-10 has completed its work. Chris Lennon (Harris) expanded upon the potential issues. Chair Miller suggested a liaison statement to SMPTE urging that they reference A/76, rather than redoing the work. The committee agreed. Chair Miller asked Mr. Allison to work with him to draft the liaison communication. Mr. Allison said he would seek support from TSG/S1 for PMCP/BXF harmonization.

12. REPORT OF THE SPECIALIST GROUP ON DIGITAL ENG, TSG/S3 (DANE ERICKSEN)

Dane Ericksen (Hammett & Edison, representing SBE), Chair of TSG/S3, briefed the committee on current activities within the specialist group (**ATTACHMENT 11**).

12.1 Status Report

Mr. Ericksen said that no corrections or errors have been identified to date in CS/TSG-696r2, "Candidate Standard: ATSC Automatic Transmitter Power Control Data Return Link Standard." He said equipment manufacturers continue to need additional time to develop prototype DRL hardware. This effort has been delayed due to the need to fulfill Sprint Nextel orders for the 2 GHz TV BAS transition. He added that TV BAS radio manufacturers participating in TSG/S3 continue to indicate that new 2 GHz band plan digital radios now being shipped should be compatible with expected DRL hardware and enhanced operational capabilities.

12.2 Request to Extend the Candidate Standard Period for CS/TSG-696r2

Mr. Ericksen reported the consensus of TSG/S3 that the Candidate Standard period for CS/TSG-696r2, "Candidate Standard: ATSC Automatic Transmitter Power Control Data Return Link Standard," be extended until 21 September 2007.

Chair Miller recognized the **motion** from the Chair of TSG/S3. The motion was **approved** on a show of hands.

Mr. Ericksen noted that work is currently stalled on the Field Communications System Working Draft due to the time limitations of contributors. He said the project will move forward when the resources are available to do the work.

13. REPORT OF THE SPECIALIST GROUP ON VIDEO AND AUDIO CODING, TSG/S6 (PAT WADDELL)

Pat Waddell (Harmonic), Chair of TSG/S6, provided a status report on the work of the specialist group (**ATTACHMENT 12**).

13.1 Status Report

Mr. Waddell noted that CS/TSG-744r1, "ATSC Candidate Standard: Amendment No. 1 to ATSC Digital Television Standard, A/53 Part 4:2007 – MPEG-2 Video System Characteristics, Userdata," is currently posted as a Candidate Standard with a CS end date of 20 September 2007. This version, he explained, includes updated "Purpose of the Amendment" text to reflect changes in the document during development in the specialist group.

Mr. Waddell reported that two new ad-hoc groups focusing on audio issues have been established within TSG/S6, specifically:

- **S6-3, Loudness Issues.** This group, chaired by Jim Starzynski (NBC Universal), held its first teleconference last week.
- **S6-4, Audio/Video Synchronization Issues.** This group, chaired by John Henderson (Hitachi), will hold its first teleconference on May 22.

Mr. Waddell asked that any TSG members who wish to participate in this work contact him and Mr. Whitaker so they can be added to the S6-3 and/or S6-4 reflectors. He cautioned that TSG should not expect immediate closure on these issues, since they are non-trivial problems and will take time to resolve.

13.2 Request to Advance Working Draft Amendment No. 1 to A/53-5:2007 to Candidate Standard (Doc. S6-442r4) and A/53-6:2007 to Candidate Standard (Doc. S6-442r)

Mr. Waddell called attention to S6-442r4, "Draft Amendment No. 1 to ATSC Digital Television Standard, A/53 Part 5:2007 and A/53, Part 6:2007," (**ATTACHMENT 13**). He explained that this document contains Working Draft amendments to Part 5 and Part 6 of A/53, which were originally designed to replace the current sound level standard (ANSI S1.4-1983, LAeq) with a new ITU standard (BS.1770). Mr. Waddell reported, however, that TSG/S6 reached consensus to leave LAeq as a legal method until a date to be determined by the S6-3 AHG.

Mr. Waddell reported the consensus of TSG/S6 that S6-442r4 be elevated to Candidate Standard for a period of time as follows:

- Amendment 1 to A/53-5:2007 until 31 December 2007
- Amendment 1 to A/53-6:2007 until 31 December 2007 and the inclusion of the footnote to Section 5.5 (matching Part 5)

Chair Miller recognized the **motion** from the chair of TSG/S6. The motion was **approved** on a show of hands.

13.3 Other Candidate Standard Revision Issues

Mr. Waddell reported that TSG/S6 has discussed the planned document structure evolution for advanced codecs, specifically CS/TSG-658r1 (VC-1) and CS/TSG-659r2 (AVC). He said the current approach is to draft standalone standards that include both coding and transport constraints. He said this work will require coordination with TSG/S8. He acknowledged the urgency of this work, as expressed by the Board.

14. REPORT OF SPECIALIST GROUP ON DATA MULTIPLEX/TRANSPORT, TSG/S8 (MARK EYER)

Mark Eyer (Sony), Chair of TSG/S8, was unable to attend today's meeting. Mr. Henderson gave the report on his behalf (**ATTACHMENT 14**).

14.1 S8-6 – Content Identification Ad-Hoc Group

Mr. Henderson reminded the committee that S8-6 was tasked with updating A/57A to document ISAN (ISO 15706-2:2006) via the MPEG content labeling descriptor; the result is TSG-746r0, "Working Draft Revision B of ATSC Standard A/57, Content Identification and Labeling for ATSC Transport" (**ATTACHMENT 15**). This proposed revision brings the ATSC method for content identification in line with methods defined in MPEG-2 Systems, replacing an ATSC-defined descriptor with the ISO-defined Content Labeling Descriptor. The ISO descriptor is general-purpose and can carry an International Standard Audiovisual Number (ISAN) or any other type of identifier. Additionally, the draft revision defines an ATSC Content Identifier structure (carried inside the ISO descriptor) that allows a broadcaster to identify content with a "house number." As this number is scoped to the broadcaster's Transport Stream ID (TSID), each broadcaster is free to use any desired numbering scheme. He said TSG/S8 recommends publishing the proposed revision as a Candidate Standard to allow wider industry review and comment on the house number method.

Mr. Henderson reported the consensus of TSG/S8 that TSG-746r0 be elevated to Candidate Standard for a period of time ending 31 December 2007. Chair Miller recognized the **motion** from Mr. Henderson on behalf of TSG/S8. The motion was **approved** on a show of hands.

14.2 Other Issues

Mr. Henderson reported that a number of small items pertaining to A/65C are being collected, waiting for a "critical mass" of proposed changes, including: 1) coordination with CEA-708C (Caption Service Descriptor), and 2) removal of references to the old content identifier descriptor. He added that TSG/S8 continues to seek volunteers to work on updating of A/69, "PSIP Implementation Guidelines for Broadcasters."

15. REPORT OF THE SPECIALIST GROUP ON RF TRANSMISSION, TSG/S9 (CHARLES EINOLF)

Charles Einolf (MSTV/CBS), Chair of TSG/S9, reported on current work within the specialist group (**ATTACHMENT 16**)

15.1 Status Report

Mr. Einolf reported continued work on documenting the Advanced-VSB (A-VSB) system. The S9-5 AHG, led by Victor Tawil (MSTV), has delivered a lab test report to TSG/S9 and developed a field test plan. He said supplemental laboratory tests on field test hardware need to

be done prior to beginning the field test program. Mr. Einolf said no firm date for field tests has yet been set. He added that TSG/S9 still needs to look at the A-VSB elements that relate to single frequency networks.

16. REPORT OF THE SPECIALIST GROUP ON RECEIVERS, TSG/S10 (JOHN HENDERSON)

Mr. Henderson, Chair of TSG/S10, called attention to the Working Draft corrigendum to A/74, "ATSC Recommended Practice: Receiver Performance Guidelines," posted to the TSG reflector on March 28 (**ATTACHMENT 17**). The Corrigendum updates the A/74 recommendation regarding devices that can be used to play back multipath captured signals, which are an important part of the A/74 documentation of expected signal conditions. He explained that the Sencore device recommended in A/74 is no longer available for purchase; the corrigendum indicates a suitable Wavetech player that is an available alternative.

Mr. Henderson **moved** that TSG approve the Working Draft Corrigendum to A/74 and issue a letter ballot to the ATSC membership. The motion was **seconded** by Mr. Einolf. Following additional discussion, it was suggested that a TSG letter ballot might be preferable to approval today at this meeting. Mr. Henderson acknowledged this view, and accepted an amendment to the motion for a two-week letter ballot of TSG. Mr. Einolf concurred. Restating the motion, "**moved** that TSG issue a two-week letter ballot on the Working Draft Corrigendum on A/74 as a Proposed Recommended Practice." Chair Miller called the motion; it was **approved** on a show of hands.

17. REPORT OF THE SPECIALIST GROUP ON DATA BROADCAST, TSG/S13 (MIKE DOLAN)

Mike Dolan, Chair of TSG/S13, updated the committee on work within the specialist group (**ATTACHMENT 18**).

17.1 Wrap up on System Renewability Messages

Mr. Dolan noted that comments resulting from the System Renewability Messages (SRM) letter ballot of the ATSC membership have been addressed, and the document has been published as ATSC Standard A/98. He thanked the contributors for their efforts on this project.

17.2 Status of Advanced Emergency Alert

Mr. Dolan reminded the committee of the background on the Advanced Emergency Alerting work, which began in TSG/S13 in January. He said teleconferences were held every other week, with appropriate consideration given to:

- The FEMA/SpectraRep/PBS DEAS trial
- SCTE/CEA EAS (J-STD-042)
- IP Multicast signaling guidelines

He said that despite lengthy discussions within the specialist group, there was no consensus to add anything to the existing recommendations contained in A/90 and A/92.

Mr. Dolan noted certain process complications, which included the following:

- In general, "supporter" participation was very poor
- NWIP requirements were too broad
- Technology and market are too new

- Federal requirements are still in flux
- Technology stakeholders were unwilling/unable to disclose their work at this time, in part due to U.S. Government restrictions

Mr. Dolan reported the consensus of TSG/S13 that:

- 1) This task should be closed now without any specific recommendation to TSG.
- 2) TSG should wait until a clear requirement emerges to perhaps address one of the following at some future date: a) IP multicast signaling, or b) standardized EAS carriage in the ATSC transport.

Discussion followed on the DEAS project and why TSG/S13 was unable to bring a document back to TSG. Graham Jones (NAB, Chair of the Planning Committee) noted that the PC has a current work item to look at advanced EAS systems.

Mr. Richer suggested that Chair Miller report to the ATSC Board that: 1) greater clarity in the DEAS NWIP would have been helpful, 2) it had been reported that the Federal Government has indicated it does not want ATSC working in this area, and 3) participation in the TSG/S13 work by “supporters” was inadequate. He added that the Board may wish to ask for clarification on this issue from the Federal Government. Chair Miller said he will report these points to the Board at its May 18 meeting.

18. OTHER BUSINESS

18.1 Liaison Reports

18.1.1 MPEG RVC

Chair Miller called attention to ISO/IEC JTC1/SC29/WG11 N8943, a description of MPEG’s Reconfigurable Video Coding (RVC) requirements, which he posted to the TSG reflector on May 9 (**ATTACHMENT 19**). He encouraged TSG members to review the document, distributed with the encouragement of MPEG convenor Leonardo Chiariglione. He asked Mr. Chernock, Mr. Waddell, and Mr. Eyer to help draft an appropriate liaison statement to MPEG. Additional comments on the RVC requirements were offered by Sam Narsimhan (Motorola).

18.2 SMPTE

Gavin Schutz (SMPTE) announced that Peter Symes has been named to the post of SMPTE Engineering Director. He replaces Carl Girod, who retired earlier this year.

18.3 Planning Committee

Chair Miller noted that the Planning Committee will meet today beginning at 1:00 p.m. Mr. Jones highlighted items that are currently underway within the PC, in particular the draft NWIP on NRT services. He added that progress continues to be made on the ACAP demonstration and field trial project.

19. SCHEDULE OF NEXT TSG MEETINGS

The 2007 schedule of meetings is as follows: September 20 and November 29. Due to the press of business, a teleconference has been suggested for August 8.

20. ACTION ITEMS DEVELOPED AT THIS MEETING

The following action items were developed at today’s TSG meeting:

- 1) Mark Aitken to lead TSG/S4, the Specialist Group on ATSC M/H.
- 2) Jerry Whitaker to establish the necessary electronic resources for TSG/S4.
- 3) ATSC staff to issue an RFP on ATSC M/H.
- 4) Chair Miller to work with Art Allison to draft a liaison statement to SMPTE urging that they reference A/76 appropriately in their S22-10 work.
- 5) Art Allison to seek support from TSG/S1 for PMCP/BXF harmonization.
- 6) Jerry Whitaker to post the TSG/S6 Candidate Standard Amendments to A/53 Part 5 and Part 6 (S6-442r4) on the ATSC Web site for a period of time ending 31 December 2007.
- 7) Jerry Whitaker to post TSG-746r0, "Working Draft Revision B of ATSC Standard A/57, Content Identification and Labeling for ATSC Transport," as a Candidate Standard for a period of time ending 31 December 2007.
- 8) Jerry Whitaker to issue a two-week TSG letter ballot on the Working Draft Corrigendum on A/74 as a Proposed Recommended Practice.
- 9) Jerry Whitaker to revise CS/TSG-696r1 to show a Candidate Standard period ending 21 September 2007.
- 10) Chair Miller to work with Rich Chernock, Pat Waddell, Mark Richer, and Mark Eyer to draft a liaison statement to MPEG regarding document N8943.
- 11) Chair Miller to report to the ATSC Board the status of the Advanced Emergency Alerting work.

21. ADJOURNMENT

There being no further business, the meeting was adjourned at 11:45 a.m. EDT.

ATTACHMENTS

ATTACHMENT 1. Attendance List

ABC	Tom Hankinson
ABC/SMPTE	William Miller
Alticast	Thomas Jung
AMD	Brian Mathews
ATSC	Jerry Whitaker
ATSC	Mark Richer
Auvitek	Jordan Cookman
Broadcom	Randall Perlow
CBC	Guy Bouchard
CBS	Robert Seidel
CEA	Brian Markwalter
Coherent Logix	Michael Doerr
Cox Broadcasting	Sterling Davis
CRC	Yiyan Wu
Delphi	Todd Brandenburg
Delphi	Jeff Marrah
DiBcom	Stuart Pekowsky
DirectTV	Kuriacose Joseph
Dolby	Craig Todd
Dolby	Walt Husak
DTS	Phillip Maness
DTS	Bill Zou
ETRI	Sung-Hoon Kim
ETRI	Heung Mook Kim
Gannett Broadcasting	Jeff Johnson
General Motors	Cem Saraydar
Genesis Microchip	Tan Dadurian
Genesis Microchip	Wenhan Zhang
Harmonic	Pat Waddell
Harris	Chris Lennon
Harris	Joe Seccia
Harris	Jay Adrick
Hitachi	John Henderson
Ion Media	Dan Borowicz
Ion Media Networks	John Robinson
Ion Media Networks	David Glenn

Kodak	Mark Henry
MBITL	Mike Bargauan
Merrill Weiss Group/Tribune	S. Merrill Weiss
Micronas	Shawn Yang
Micronas	Richard Citta
Microsoft	Patrick Griffis
MobiTV	Alan Moskowitz
MobiTV (rep)	Steve Smith
MSTV	Bruce Franca
MSTV/CBS	Charles Einolf
NAB	Graham Jones
NAB	Art Allison
NBC Universal	Glenn Reitmeier
NCTA/Consultant	Jeff Krauss
Nielsen	Mike Dolan
PBS	James Kutzner
Pioneer	Adam Goldberg
Pioneer	Rich Annibaldi
Rohde & Schwarz	Mike Simon
S & T	Bruce Renne
Samsung	JoonSoo Kim
Samsung	Hae Yoo Jeong
Samsung	C.B. Patel
Samsung	Jungwan Ko
Samsung	John Godfrey
Sanyo	Glenn Rockland
SES Americom	Sesh Simha
Sharp	Craig Tanner
Sinclair	Mark Aitken
SMPTE	Gavin Schutz
SMPTE	Bill Miller
SpectraRep	Ralph Justus
Tandberg	Matthew Goldman
Techwell, Inc.	Paul Snopko
Thomson	Brett Jenkins
Thomson	Paul Knutson
Tribune	Andy Bater
Triveni Digital	Rich Chernock
Zenith	Wayne Luplow
Zenith	Wayne Bretl

Attending by telephone:

CBS	Ren McMann
Comcast	Walter Michel
Motorola	Sam Narasimhan
Sarnoff	Hans Baumgartner
SBE	Dane Ericksen
Scientific Atlanta (Cisco)	Arturo Rodriguez
Time Warner Cable	Steve Johnson
Toshiba	John Gawel

ATTACHMENT Links

ATTACHMENT 2. TSG-737, Draft Agenda

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-2-TSG-737r2-Agenda-2007-05-16.doc

See also

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-2-TSG-737r3-Agenda-2007-05-16.doc

ATTACHMENT 3. TSG-734r5, Draft Minutes of February 8 Meeting

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-3-TSG-734r5-Minutes-2007-02-08.doc

See also

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-3-TSG-734r6-Minutes-2007-02-08-redline.doc

ATTACHMENT 4. TSG-732r0, Status of Ballots

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-4-TSG-741r0-Status-of-Ballots.doc

ATTACHMENT 5. PC-149r6, NWIP on ATSC M/H

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-5-PC-149r6%20NWIP-ATSC-M-H_4-03.doc

ATTACHMENT 6. Draft Request for Proposals on ATSC M/H

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-6-ATSC-MH%20RFP_draft_4-27-07.doc

ATTACHMENT 7. PC-3 Draft NWIP on NRT Services

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-7-PC3-008R8_NRT_NWIP.doc

ATTACHMENT 8. TSG-3 Status Report

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-8-TSG-3_013R1_Status.ppt

ATTACHMENT 9. TSG-3 Scope

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-9-TSG3-001r5-Scope.doc

ATTACHMENT 10. TSG3-003r17 Preliminary Survey Results

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-10-TSG3-003r17Survey.doc

ATTACHMENT 11. TSG/S3 Status Report

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-11-S3-117r0-S3-Status-Report.ppt

ATTACHMENT 12. TSG/S6 Status Report

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-12-S6-460r0%20S6%20Report%20to%20TSG%20for%20051607-final.ppt

ATTACHMENT 13. S6-442r4, Working Draft Amendment to A/53, Parts 5 and 6

[http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-13-S6-442r4-draft-Amendment-1-A53-5,6-2007-\(Loud%20Meas%20Method\).doc](http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-13-S6-442r4-draft-Amendment-1-A53-5,6-2007-(Loud%20Meas%20Method).doc)

ATTACHMENT 14. TSG/S8 Status Report

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-14-S8-677r0-S8-Status-Report-2007-05.ppt

ATTACHMENT 15. TSG-746r0, Working Draft Revision of A/57A

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-15-TSG-746r0-Draft-Revision-of-A57A.pdf

ATTACHMENT 16. TSG/S9 Status Report

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-16-ATSC%20TSG%20S9%20Status%20May%202007.ppt

ATTACHMENT 17. Working Draft Corrigendum No. 1 to A/74

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-17-Corrigendum%20No%20%201%20to%20A74.doc

ATTACHMENT 18. TSG/S13 Status Report

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-18-S13-390r1-Status-20070516.ppt

ATTACHMENT 19. MPEG Liaison

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-19-N8943.doc

ATTACHMENT 20. TSG-736r0, TSG Voting Eligibility

http://www.atscmembers.org/sg/T3/2007_05_16/documents/Attachment-20-TSG-736r0-TSG-Voting-After-2007-02-08.xls