

Minutes:
ATSC Technology and Standards Group (TSG)

29 November 2007, 10:00 a.m. until 1:00 p.m. PST
ABC Building, 2300 Riverside Drive, Burbank, CA 91506

1. WELCOME, INTRODUCTIONS, AND DETERMINATION OF QUORUM

Chair William Miller (SMPTE) called the meeting to order at 10:00 a.m. at the offices of the Walt Disney Company in Burbank, CA. 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 November 20, with an update posted on November 26 (**ATTACHMENT 2**). No changes were requested and the draft agenda was approved as submitted.

3. APPROVAL OF THE DRAFT MINUTES OF THE LAST MEETING

Chair Miller called members' attention to the draft Minutes of the September 20 TSG meeting, distributed to the TSG reflector on October 31 (**ATTACHMENT 3**). Mr. Whitaker reported one correction to the document—the addition of an action item for TSG/S8:

“TSG/S8 to document a standardized method for transport of private data in the private area of the Transport Stream adaptation field, and a method to signal the presence of and tag that data, per the recommendations contained in the TSG-3 output document (TSG3-019r9).”

In addition, clarification of the intent of the TSG/S1 motion to elevate Corrigendum No. 1 to A/76A was added, stating that—upon final approval—staff will roll-up the Corrigendum to produce a new version of the Standard (A/76B). These changes are reflected in an updated version of the draft Minutes, posted to the reflector on November 28 (**ATTACHMENT 4**).

No further changes were requested and the document was approved as amended.

4. OPENING REMARKS

Chair Miller thanked ABC/Disney for hosting today's meeting. He noted this will be his last meeting as the Chair of TSG, and went on to express his appreciation to the specialist group chairs and TSG members for their support over the years. Mark Richer (ATSC) reminded the committee that immediately following the Planning Committee meeting this afternoon, ATSC will host a reception to honor and thank Chair Miller for his three years of service as TSG Chair.

5. COMMENTS BY THE PRESIDENT (MARK RICHER)

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

5.1 Status of Ballots

Mr. Richer called attention to the Status of Ballots report, posted to the reflector on November 26 (**ATTACHMENT 5**).

5.2 Other

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

- Work continues to develop an online voting system. ATSC is discussing options with vendors and hopes to begin rolling-out a system by early next year. He said ATSC hopes to reach an agreement with the vendor before the end of December.
- Possible changes to the Bylaws are being drafted that would address, among other things, the balloting process. He said this work is still in the early drafting stage, adding that the Board will be briefed on the proposed changes at its next meeting.
- The ATSC Annual Meeting has been set for 8 May 2008. The focus of the event will be the 25th anniversary of the ATSC. He said planning is underway now.

6. BRIEF REPORTS ON ACTIONS FROM THE PREVIOUS MEETING

The following action items were developed at the September 20 meeting of TSG:

- 1) Chair Miller to work with Rich Chernock, Pat Waddell, Mark Richer, and Mark Eyer to draft a liaison statement to MPEG regarding document N8943. [2007-05-16]
Carried forward.
- 2) Assuming approval by the Board of Directors, TSG/S13 to begin work on a New Work Item on Carriage of SCTE 127 in the ATSC Transport.
Completed.
- 3) Jerry Whitaker to issue a two-week letter ballot to reaffirm A/49, "Ghost Canceling Reference Signal for NTSC."
Completed.
- 4) Chair Miller and Mark Richer to distribute to the ATSC membership and ATSC Forum a statement regarding possible withdrawal of A/80, "Modulation and Coding Requirements for Digital TV (DTV) Applications over Satellite."
Carried forward.
- 5) TSG/S6 to undertake work to merge A/63, "Standard for Coding 25/50 Hz Video," into A/53 Part 4.
Completed; work assigned to TSG/S6.
- 6) Jerry Whitaker to begin the process of withdrawal of A/68, "PSIP Standard for Taiwan," per Section 17.2 of B/3, "Procedures for Technology Group and Specialist Group Operation."
Completed. An appropriate note has been added to the ATSC Web site posting of A/68.
- 7) TSG/S9 to undertake a review of A/64A, "Transmission Measurement and Compliance for Digital Television, Rev. A."
Completed; work assigned to TSG/S9.
- 8) TSG/S9 to undertake a review of A/75, "Developing DTV Field Test Plans."
Completed; work assigned to TSG/S9.

- 9) TSG/S13 to undertake a review of A/91, "Implementation Guidelines for the Data Broadcast Standard," with the work deferred until after A/90 is updated.
Completed; work assigned to TSG/S13.
- 10) Jerry Whitaker to issue a membership ballot on TSG-762r1, "Proposed Amendment to A76A, Programming Metadata Communication Protocol."
Completed.
- 11) Jerry Whitaker to issue a letter ballot on CS/TSG-696r2, "Candidate Standard: ATSC Automatic Transmitter Power Control Data Return Link Standard," as a Proposed Standard.
Completed.
- 12) Jerry Whitaker to issue a letter ballot on CS/TSG-744r1, "Amendment No. 1 to ATSC Digital Television Standard, A/53 Part 4:2007 – MPEG-2 Video System Characteristics, Userdata," as a Proposed Standard. The CS document is to remain available on the ATSC website while it is being balloted and while comments are reconciled.
Completed.
- 13) Jerry Whitaker to issue a letter ballot on TSG-760r0, "Working Draft Corrigendum to A/110A," as a Proposed Standard.
Completed.
- 14) Samsung to provide to TSG, prior to the next TSG meeting, a summary of changes and updates to the A-VSB system, comparing the system being considered by TSG/S4 with the system documented and tested by TSG/S9.
Overtaken by events.
- 15) Rich Chernock to add to the draft agenda of the November TSG meeting an item on "Comparison of A/VSB System Versions."
Overtaken by events.
- 16) Jerry Whitaker to issue a two-week letter ballot on TSG-761, "Working Draft Amendment to A/74," as a Proposed Recommended Practice.
Completed.
- 17) Pat Waddell to monitor the HMS work in SCTE and provide liaison reports to TSG as appropriate.
Ongoing.
- 18) TSG/S8 to document a standardized method for transport of private data in the private area of the Transport Stream adaptation field, and a method to signal the presence of and tag that data, per the recommendations contained in the TSG-3 output document (TSG3-019r9).
Completed; work assigned to TSG/S8.

7. NEW WORK ITEMS FOR DISCUSSION

7.1 Board of Directors

7.1.1 Recommendation from ATSC Board for Advisory Language to be Included in Introductory Sections of A/72 and A/73

Mr. Richer reported that during its meeting on September 26, the Board approved the following communication to TSG:

“The Board of Directors strongly recommends that the following advisory text be included in the Introductions to the A/72 and A/73 Standards currently under development in TSG.

Advisory Notice

In issuing this standard, the ATSC recognizes that it includes encoding and decoding techniques for digital television transmission which are not backwards compatible with existing MPEG-2-based ATSC DTV deployments. Transitional issues associated with continuing service to existing receivers, how and when to deploy advanced-capability receivers, allocation of channel bit capacity, and related issues should be considered. ATSC recognizes that this standard will be utilized more readily in countries that have not yet implemented digital terrestrial television broadcasting systems, or in countries that have achieved internal agreement on a transition plan.”

Chair Miller noted that this language has been included in the Working Draft A/72 and A/73 documents.

7.1.2 Carriage of ANSI/SCTE 127 in the ATSC Transport

Mr. Richer reported that the Board has approved a New Work Item Proposal on Carriage of SCTE 127 in the ATSC Transport. Per the plan outlined at the September 20 TSG meeting, the work has been assigned to TSG/S13.

7.1.3 Other

Mr. Richer reported that the Board has asked the Architecture Team to review the interrelationship, relevant timing, and potential for multiple versions of ATSC-M/H and NRT Standards and recommend a path forward for the specialist groups involved. Rich Chernock (Triveni Digital) will take the lead on this work.

8. ARCHITECTURAL TEAM

8.1 Five-Year Review Status

Mr. Whitaker noted the status of work to revise or withdraw ATSC Standards and Recommended Practices that are at or beyond the five year revision point¹:

A/49, “Ghost Canceling Reference Signal for NTSC”– Ballot to reaffirm is in process.

A/63, “Standard for Coding 25/50 Hz Video” – TSG/S6 is working to merge A/63 into A/53 Part 4.

A/64A, “Transmission Measurement and Compliance for Digital Television, Rev. A” – The document is currently under review in TSG/S9.

¹ From document B/3, “Procedures For Technology Group and Specialist Group Operation”:

15.1. ATSC Technical Documents (Standards, Recommended Practices, and Informational Documents) should be reviewed every five years by the appropriate technology group and on such review shall be reaffirmed, revised or withdrawn.

15.1.1. If a document is revised as per section 16.1.3, the five-year review period will start from the most recent date of document revision.

A/68, “PSIP Standard for Taiwan” – The process for withdraw has been initiated².

A/75, “Developing DTV Field Test Plans” – This document is currently under review in TSG/S9.

A/80, “Modulation and Coding Requirements for Digital TV (DTV) Applications over Satellite” – No decision has been made on whether to withdraw or update this document.

A/91, “Implementation Guidelines for the Data Broadcast Standard” – TSG/S13 will undertake this work after A/90 has been updated.

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

Art Allison (NAB), Chair of TSG/S1, reported on work of the specialist group since the last TSG meeting. He said comments received during the ATSC ballot on Corrigendum 1 to A/76A have been addressed and that publication of the Corrigendum is being held by the ATSC President so that a membership ballot to roll-up the Corrigendum into a new letter revision of the Standard (A/76B) can be completed. In addition, Mr. Allison noted there is some discussion within TSG/S1 on possible additional changes to A/76; however, no firm decisions have yet been made.

10. REPORT OF THE SPECIALIST GROUP ON ACAP, TSG/S2 (THOMAS JUNG)

Thomas Jung (Alticast) updated the committee on activities within the specialist group (**ATTACHMENT 6**). He said work continues to update the ACAP Standard, A/101. Among the items being addressed are index modifications, reference updates, and test support. He said a Working Draft revision is expected before the end of the year.

Craig Tanner (Sharp) noted that OCAP continues to evolve, and as such ATSC may need to continually play catch-up with regard to changes in OCAP. Mr. Jung said he was working, in the A/101 revision, to make the ATSC standard less dependent on OCAP versions. Mr. Allison pointed out that CableLabs is not on the ATSC list of approved normative reference organizations. Mr. Richer said the organization could be added if the Board approves.

Mr. Richer observed that ACAP is being considered as a component of ATSC 2.0, which is being discussed by the Planning Committee. He said it will be important that a highly deployable and interoperable version of ACAP be available as the ATSC 2.0 work moves forward.

Chair Miller encouraged TSG members to actively participate in the A/101 revision effort.

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

Chair Miller said that Dane Ericksen (Hammett & Edison, representing SBE), Chair of TSG/S3, was unable to attend today’s meeting because of illness. He asked Mr. Whitaker, Secretary of TSG/S3, to update the committee on current activities within the specialist group.

Mr. Whitaker said that comments received during the TSG ballot on TSG-696r4, “Proposed Standard: ATSC Automatic Transmitter Power Control (ATPC) Data Return Link (DRL) Standard,” and are being addressed. He said the changes being made are editorial in nature, adding that the document should go to ATSC ballot within the next week or so.

² From document B/3, “Procedures For Technology Group and Specialist Group Operation”:

“Section 17.2: A Technology Group considering withdrawal of a document shall post notice of this activity in the public area of the ATSC web site for a minimum of 180 days.”

Mr. Whitaker reported that progress continues to be slow on the ATSC Field Communications System Working Draft. A solid time frame for requesting TSG to elevate the Working Draft to Candidate Standard has not been determined due to limited time availability of contributor(s) to the document. Merrill Weiss (Tribune) said he expects that the pace of work on the Field Communication System project will accelerate in the coming months.

12. REPORT OF THE SPECIALIST GROUP ON MOBILE AND HANDHELD, TSG/S4 (MARK AITKEN)

Mark Aitken (Sinclair Broadcast), Chair of TSG/S4, reported on current work within the specialist group (**ATTACHMENT 7**).

12.1 S4-1 AHG Status

Mr. Aitken said that S4-1, the Physical Layer AHG led by Michael Doerr (Coherent Logix), has continued to hold weekly meetings, with good attendance from proponents and broadcast interests. He said the S4-1 objective is to bring back a single “candidate” from the RFP respondents. The current status of work is as follows:

- Target timeline – complete
- Lab test plan – in-process
- Field test plan – in-process
- Scope of documentation – complete
- Disclosure documents from proponents – complete
- Summary of systems’ strengths and weaknesses for comparing and contrasting capabilities in process

Mr. Aitken said that S4-1 has developed recommendations to the Independent Demonstration of Viability (IDOV) project for laboratory and field demonstration, specifically:

- 1) Evaluate all full systems under a nominal set of parameters or conditions that normalizes systems by efficiency for mobile, pedestrian, and pedestrian in mobile services. By defining a main stream consumed and corresponding payload data rate establishes baseline performance under various laboratory conditions and allows evaluating QOS over a coverage area in the field demonstrations.
- 2) All systems should be examined in parallel, on multiple channels, to permit subjective evaluation of the systems at a common point and time for each measurement.
- 3) Pedestrian evaluations should be a part of the mobile route evaluations. Antennas should be of reasonable size and located at reasonable position and height for the intended type of service under evaluation. This is not intended to be interpreted that all pedestrian evaluations should be a part of the mobile routes.

Mr. Aitken said that S4-1 will hold a face-to-face meeting on Monday December 10 and Tuesday December 11, the goal of which will be to identify and agree upon evaluation metrics.

12.2 S4-2 AHG Status

Mr. Aitken said that S4-2, the Management Layer AHG led by Mr. Chernock, has developed a timeline and layer structure, and decided on a process for completing its work. He identified a key decision point being how data is communicated from the M1 (Transport-M) layer to upper sub-layers. Proposals utilize IP, MPEG-2, MCAST, and FLO. Considerations include the following:

- Interoperability with other infrastructures
- Efficiency (being examined in the S4-2E Efficiency sub-group)
- Complexity

Mr. Aitken said another focal point of the S4-2 work has been the potential interoperability of layers.

12.3 S4-3 AHG Status

Mr. Aitken said that S4-3, the Presentation Layer AHG led by Brett Jenkins (ION Media), has prepared consolidation spreadsheets for both the P1 and P2 layers, and that the group is moving toward video codec decision points. He said a two week meeting schedule is being followed, with good participation in calls and on the reflector. Among the cross-layer issues being discussed are:

- ESG/EPG not currently being addressed by S4-3.
- A/V synchronization keeping an eye on this issue.
- Physical Layer limitations on burst sizes and potential to apply the enhancement layer onto hierarchical coding.

Mr. Aitken announced that Graham Jones (NAB) has agreed to serve as Vice Chair of S4-3.

12.4 TIA Reference Request

Mr. Aitken called attention to his request that TIA be added to the list of approved organizations that may be normatively referenced. From his November 2 posting,

“As Chairman of TSG/S4, I ask at this time that ATSC and its Board take under consideration adding the Telecommunications Industry Association (TIA) to the list of approved organizations that may be normatively referenced. It is my understanding that TIA is an ANSI accredited SDO and should qualify for such referencing. Several TIA documents are under study as they may pertain to the current ATSC TSG/S4 (M/H) activities.”

Mr. Aitken asked TSG to approve this request on behalf of TSG/S4. Chair Miller recognized the **motion** from the Chair of TSG/S4. The motion was **approved** without objection.

12.5 Discussion

Jeff Krauss (NCTA) suggested that TSG/S4 be asked to prepare a summary document of the characteristics of the proposed systems, for information and background for TSG in considering the various systems. Mr. Allison pointed out that at a point in the future, TSG/S4 will report its recommendation and rationale. Mr. Aitken said he felt it was possible to provide a high-level document outlining the systems. He took an action item to do so.

Mindy Lauck (NBC Universal) suggested that a checklist be developed based on the ATSC-M/H NWIP to compare progress of the TSG/S4 work versus the capabilities called-out in the NWIP. Chair Miller agreed this would be useful.

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 8**).

13.1 S6-3 AHG Status

Mr. Waddell reminded the committee that the ongoing work of S6-3 is intended to study the length of time over which a loudness measurement should be taken, as well as the effects of less than ideal mixing environments. He said the group, led by Jim Starzynski (NBC Universal), has attracted wide participation. S6-3 is working to identify known (and perhaps unknown) issues that affect loudness. Mr. Waddell said S6-3 will furnish many of the speakers for the "ATSC Audio Summit," to be held on 19 February 2008 in conjunction with the Hollywood Post Alliance Technology Retreat in the Palm Springs area.

13.2 S6-4 AHG Status

Mr. Waddell reported that the S6-4 sub-group, led by John Henderson (CEA), had been holding regular meetings to examine a variety of potential sources of lip-sync errors. The group has examined possible out-of-service test signals and discussed at length certain MPEG-related issues. He said S6-4 is considering asking the Society of Broadcast Engineers to assist with station bitstream monitoring to verify what MPEG-related problems might exist.

13.3 Audio-Related CS Status

Mr. Waddell pointed out there are two posted Candidate Standards relating to audio:

- CS/TSG-757r0, "Candidate Standard: Amendment No. 1 to ATSC Digital Television Standard (A/53) Part 5:2007"
- CS/TSG-758r0, "Candidate Standard: Amendment No. 1 to ATSC Digital Television Standard (A/53) Part 6:2007"

Mr. Waddell said both expire on 31 December 2007. He reported the consensus of TSG/S6 to extend the expiration dates for both documents to 31 December 2008. He said the additional time will give S6-3 the opportunity to address this topic, in addition to the others they are working on.

Chair Miller recognized the **motion** from the Chair of TSG/S6. The motion was **approved** without objection.

13.4 Advanced Codec Candidate Standards

Mr. Waddell reported that two advanced video coding constraint Candidate Standard documents have been updated since the last TSG meeting (and are posted on the ATSC CS page):

- CS/TSG-658r3, "Candidate Standard: Part 1 of Proposed Doc. A/73, Video System Characteristics of VC-1 in the ATSC Digital Television System:"
(http://www.atsc.org/standards/cs_documents/CS-TSG-658r3.pdf)
- CS/TSG-659r4, "Candidate Standard: Part 1 of Proposed Doc. A/72," "Video System Characteristics of AVC in the ATSC Digital Television System:"
(http://www.atsc.org/standards/cs_documents/CS-TSG-659r4.pdf)

Mr. Waddell noted that the CS period for both of these documents expire on 31 December 2007. He reported the consensus recommendation of TSG/S6 to extend the expiration dates for both documents until 31 December 2008. Furthermore, he called attention the following consensus recommendations of TSG/S6:

- Request elevation of CS/TSG-658r3 (VC-1) and CS/TSG-659r4 (AVC) to Proposed Standard by a 4 week letter ballot, and

- That both documents remain posted on the Candidate Standards page of the ATSC website during balloting and comment resolution until A/72 and A/73 are published or otherwise disposed of.

Chair Miller said that these recommendations will be taken up under agenda item 15.

13.5 CS/TSG-674r1

Mr. Waddell noted that the Candidate Standard period for CS/TSG-674r1, “Candidate Standard: Draft Amendment to ATSC Digital Television Standard, Doc. A/53D Annex A,” expires at the end of December. He **moved** that the CS period be extended to 31 December 2008; the motion was **seconded** by Mr. Weiss. The motion was **approved** without objection.

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

Mark Eyer (Sony), Chair of TSG/S8, reported on current work of the specialist group (**ATTACHMENT 9**).

14.1 Advancement of Draft Revision B of A/57, “Content Identification and Labeling for ATSC Transport,” to Proposed Standard

Mr. Eyer noted that Candidate Standard CS/TSG-746r0, “Candidate Standard: Revision B of ATSC Standard A/57, Content Identification and Labeling for ATSC Transport,” has been available since May with no errors or corrections identified (http://www.atsc.org/standards/cs_documents/CS-TSG-746r0.pdf). He reported the consensus recommendation of TSG/S8 to advance CS/TSG-746r0 to Proposed Standard by a 4-week letter ballot. Chair Miller recognized the **motion** from the Chair of TSG/S8. Following some discussion, Mr. Eyer suggested a six week ballot; this amendment was accepted by the committee. The motion was **approved** without objection.

14.2 New Codecs Transport

Mr. Eyer said TSG/S8 has been working on Part 2 (transport) documents for AVC (**ATTACHMENT 10**) and VC-1 (**ATTACHMENT 11**) codecs. He said drafts were finalized and posted for TSG member review on November 15. He reported that TSG/S8 has four consensus recommendations regarding these Part 2 documents, specifically:

- TSG/S8 requests elevation of Working Draft A/72 Part 2 – AVC Transport (S8-681r8 a.k.a. CS/TSG-660r2) to Proposed Standard by TSG letter ballot.
- TSG/S8 requests that CS/TSG-660r2 remain posted on the CS page of the ATSC website during balloting and comment resolution until A/72 is published or otherwise disposed of.
- TSG/S8 requests that Working Draft A/73 Part 2 – VC-1 Transport (S8-686r5) be advanced to Candidate Standard with expiration date of 31 December 2008, or until A/73 Part 2 is published or otherwise disposed of by action of TSG or by ATSC members.
- TSG/S8 requests elevation of Working Draft A/73 Part 2 – VC-1 Transport (S8-686r5) to Proposed Standard by TSG letter ballot.

15. JOINT TSG/S6 AND TSG/S8

Chair Miller called attention to the consensus recommendations of TSG/S6 and TSG/S8 (**ATTACHMENT 12**):

- 1) TSG/S8 requests that Working Draft of A/73 Part 2 – VC-1 Transport (S8-686r5) be advanced to Candidate Standard with an expiration date of 31 December 2008.

Chair Miller observed the **motion** from the Chair of TSG/S8. Discussion followed, with views offered by a several members. The motion was **defeated** on a roll-call vote (14 yes, 12 no, 14 abstain).³

- 2) TSG/S8 requests extending the CS period of CS/TSG-660r2 (AVC) until 31 December 2008.

Chair Miller recognized the motion from the Chair of TSG/S8. The motion was **approved** without objection.

- 3) TSG/S6 requests extending the CS period of CS/TSG-658r3 (VC-1) and CS/TSG-659r4 (AVC) until 31 December 2008.

Chair Miller observed the **motion** from the Chair of TSG/S6. Adam Goldberg (Sharp) **moved** to amend the motion to consider the two documents separately; **second** by Peter Fannon (Panasonic). The motion to amend was **approved** on a show of hands.

Chair Miller called the motion to extend the CS period of CS/TSG-658r3 (VC-1) to 31 December 2008. The motion **failed** on a roll call vote (18 yes, 11 no, 9 abstain).

Chair Miller called the **motion** to extend the CS period of CS/TSG-659r4 (AVC) until 31 December 2008. The motion was **approved** without objection.

- 4) TSG/S6 requests the elevation of CS/TSG-658r3 (Part 1 of a new A/73 – VC-1 Coding) and CS/TSG-659r4 (Part 1 of a new A/72 – AVC Coding) to Proposed Standard by a TSG letter ballot.

Chair Miller recognized the **motion** from the Chair of TSG/S6. Mr. Goldberg **moved** to amend the motion to consider the documents separately and to extend the letter ballot period to six weeks; **second** by Mr. Tanner. The motion to amend was **approved** on a roll call vote (14 yes, 8 no, 7 abstain).

Chair Miller called the **motion** to authorize a six-week letter ballot on CS/TSG-658r3 (VC-1) as a Proposed Standard. The motion was **approved** on a roll call vote of (16 yes, 10 no, 14 abstain).

Chair Miller called the **motion** to authorize a six week letter ballot on CS/TSG-659r4 (AVC) as a Proposed Standard. The motion was **approved** without objection.

- 5) TSG/S8 requests elevation of CS/TSG-660r2 (Part 2 of a new A/72 – AVC Transport) to Proposed Standard by TSG letter ballot.

Chair Miller recognized the **motion** from the Chair of TSG/S8. Mr. Eyer **moved** to make the ballot period six weeks; **second** by Mr. Waddell. The motion to amend was **approved** without objection.

Chair Miller called the **motion** to elevate CS/TSG-660r2 (AVC) to Proposed Standard by means of a six-week letter ballot. The motion was **approved** without objection.

³ 2/3rds approval is required to elevate a document to Candidate Standard, or to extend the CS period for a document.

- 6) TSG/S8 requests elevation of Working Draft S8-686r5 (Part 2 of a new A/73 – VC-1 Transport) to Proposed Standard by TSG letter ballot.

Chair Miller recognized the **motion** from the Chair of TSG/S8. Mr. Eyer **moved** to make the ballot period six weeks; **second** by Mr. Waddell. The motion to amend was **approved** without objection.

Chair Miller called the **motion** to elevate S8-686r5 (VC-1) to Proposed Standard by a six week letter ballot. The motion was **approved** on a roll call vote (14 yes, 10 no, 15 abstain).

- 7) TSG/S6 and TSG/S8 request that all CS documents remain posted on the CS Page of the ATSC website during balloting and comment resolution, until they are published or otherwise disposed of by action of TSG or the ATSC membership.

Chair Miller observed the consensus of the committee to do this.

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

Charles Einolf (UPN/CW), Chair of TSG/S9, reported on current work within the specialist group (**ATTACHMENT 13**).

16.1 A-VSB System Status

Mr. Einolf reported that TSG/S9 has agreed to suspend further work on the A-VSB proposal following a request from the proponents.

16.2 Improvements to A/53 Part 2

Mr. Einolf reported that a new AHG (S9-6) has been formed under the leadership of Wayne Bretl (Zenith). The scope is to develop a corrigendum of informative wording improvements for A/53 Part 2. Mr. Allison suggested that S9-6 should also consider substantive changes, if they are determined to be needed. Chair Miller asked Mr. Einolf to keep this in mind as the work of S9-6 moves forward. He urged TSG members interested in this work to join S9-6.

16.3 ATSC A/75 – Recommended Practice: Developing DTV Field Test Plans

Mr. Einolf said TSG/S9 has agreed that while A/75 has not proved terribly useful, ATSC should nonetheless have a Recommended Practice on field testing. He said TSG/S9 has decided that A/75 should not be withdrawn, but should be labeled as “out of date”. Chair Miller observed the consensus of TSG to accept this recommendation. He asked Mr. Einolf to work with Mr. Whitaker to develop the appropriate wording for the ATSC Web site posting of A/75.

Regarding A/64A, “Transmission Measurement and Compliance for Digital Television,” Mr. Einolf said review is now in progress.

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

John Henderson (CEA), Chair of TSG/S10 reported on current work within the specialist group (**ATTACHMENT 14**).

17.1 Possible Revisions to A/74

Mr. Henderson reported on possible updates being drafted for A/74, "Receiver Performance Guidelines," which include:

- Appendix on impact of unlicensed "white space" devices on A/74 receivers
- Identification and description of existing field ensembles that have dropped symbols
- Additional "A/74 Annex D-like" studies of difficult cities
- Additional performance guidelines for lower signal strength levels than "ATSC low"
- Expanded section on "smart antennas" based on the CEA-909 Interface Standard
- "N+7" interference issues

Mr. Henderson said TSG/S10 has requested that the ATSC Board consider an ex parte filing with the FCC relating to unlicensed "white space" issues, and offered to draft the text. He said the Board's response was that any filing would be limited to correction of factual errors and incorrect statements relative to A/74 (e.g., calling A/74 a "Standard"). Mr. Henderson said TSG/S10 is considering what it might say within the Board's constraints.

18. 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 since the last TSG meeting (**ATTACHMENT 15**).

18.1 NRT Project Plan

Mr. Dolan said the S13-1 AHG on non-real-time services, led by Mr. Chernock, is working toward a series of milestones leading to expected completion of the NRT standard by early 2009. He said the disclosures of existing implementations of NRT services use IP delivery mechanisms for file objects (carried over MPEG-2 transport); considerations include interoperability, efficiency, and system complexity. He said TSG/S13 believes the advantage of interoperability outweigh minor differences in efficiency and complexity. He went on to report the following interim findings:

- IP is to be used for delivery of NRT data in circumstances that are not already covered by an existing ATSC Standard. TSG/S13 recognizes other approaches to NRT delivery and affirms that its recommended approach will co-exist with them. In particular, TSG/S13 has no intent to negatively impact implementations that use the ATSC A/90 data carousel.
- FLUTE (IETF RFC 3926) is to be used for NRT file delivery over IP.

18.2 SCTE 127

Mr. Dolan reported that work has begun on the SCTE 127 carriage project, with a document expected to be ready for consideration at the next TSG meeting.

19. OTHER BUSINESS

19.1 Liaison Reports

Among the items noted were the following:

- CEA has established R4 Working Group 8 to examine loudness issues.

- SCTE has approved and published an AVC codec and transport standard (SCTE 128).
- SCTE HMS has completed balloting of SCTE 142, a Recommended Practice on transport stream verification—similar in scope to A/78 but with cable-specific extensions.

20. SCHEDULE OF NEXT TSG MEETINGS

The next meeting of TSG is scheduled for 6 February 2007.

21. ACTION ITEMS DEVELOPED AT THIS MEETING

The following action items were developed at today's TSG meeting. Items carried forward from a previous meeting are so noted.

- 1) Chair Miller to work with Rich Chernock, Pat Waddell, Mark Richer, and Mark Eyer to draft a liaison statement to MPEG regarding document N8943. [2007-05-16]
- 2) Chair Miller and Mark Richer to distribute to the ATSC membership and ATSC Forum a statement regarding possible withdrawal of A/80, "Modulation and Coding Requirements for Digital TV (DTV) Applications over Satellite." [2007-09-20]
- 3) Chair Miller to report to the ATSC Board of Directors the request that TIA be added to the list of approved normative reference organizations.
- 4) Mark Aitken to prepare a high-level summary document of the characteristics of the proposed ATSC-M/H systems for TSG information and background in considering the various systems. This document should including a checklist of features addressed versus the capabilities specified in the ATSC-M/H NWIP.
- 5) Jerry Whitaker to update Candidate Standard CS/TSG-757r0, "Candidate Standard: Amendment No. 1 to ATSC Digital Television Standard (A/53) Part 5:2007," to show an expiration date of 31 December 2008.
- 6) Jerry Whitaker to update Candidate Standard CS/TSG-758r0, "Candidate Standard: Amendment No. 1 to ATSC Digital Television Standard (A/53) Part 6:2007," to show an expiration date of 31 December 2008.
- 7) Jerry Whitaker to update Candidate Standard CS/TSG-674r1, "Candidate Standard: Draft Amendment to ATSC Digital Television Standard, Doc. A/53D Annex A," to show an expiration date of 31 December 2008.
- 8) Jerry Whitaker to issue a 6-week letter ballot on CS/TSG-746r0, "Candidate Standard: Revision B of ATSC Standard A/57, Content Identification and Labeling for ATSC Transport," as a Proposed Standard.
- 9) Jerry Whitaker to update Candidate Standard CS/TSG-660r2, "ATSC Candidate Standard: Part 2 of Proposed Doc. A/72, AVC Video Transport Subsystem Characteristics," to show an expiration date of 31 December 2008.
- 10) Jerry Whitaker to update Candidate Standard CS/TSG-659r4, "Candidate Standard: Part 1 of Proposed Doc. A/72, Video System Characteristics of AVC in the ATSC Digital Television System," to show an expiration date of 31 December 2008.
- 11) Jerry Whitaker to issue a six-week letter ballot on CS/TSG-658r3, "Candidate Standard: Part 1 of Proposed Doc. A/73, Video System Characteristics of VC-1 in the ATSC Digital Television System," as a Proposed Standard.
- 12) Jerry Whitaker to issue a six week letter ballot on CS/TSG-659r4, "Candidate Standard: Part 1 of Proposed Doc. A/72, Video System Characteristics of AVC in the ATSC Digital Television System," as a Proposed Standard.

- 13) Jerry Whitaker to issue a six week letter ballot on CS/TSG-660r2, "ATSC Candidate Standard: Part 2 of Proposed Doc. A/72, AVC Video Transport Subsystem Characteristics," as a Proposed Standard.
- 14) Jerry Whitaker to issue a six week letter ballot on S8-686r5, "Part 2 of Proposed Doc. A/73, VC-1 Video Transport Subsystem Characteristics," as a Proposed Standard.
- 15) Jerry Whitaker to keep the video codec Candidate Standards documents posted on the ATSC Web site during their ballot periods.
- 16) Jerry Whitaker to work with Charles Einolf to develop appropriate wording to accompany the public posting of A/75 on the ATSC Web site.

22. ADJOURNMENT

There being no further business, the meeting was adjourned at 1:00 p.m. PST.

ATTACHMENTS

ATTACHMENT 1. Attendance List

ABC	Bill Miller
Alticast	Thomas Jung
ATSC	Jerry Whitaker, Mark Richer
Auvitek	Jordan Cookman*
Broadcom	Randall Perlow
Building B	Garry Paxinos
CBS	Richard Streeter, Ren McMann*
CEA	John Henderson*
Comcast Cable	Bill Warga*
Cox Broadcast	Dave Siegler*, Sterling Davis
CRC	Yiyang Wu*
DirecTV	Bob Plummer, Joseph Kuriacose
Dolby	Walt Husak
DTS	Bill Zou, Phil Maness
Gannett	Jeff Johnson
Harmonic	Pat Waddell
Harris	Chris Lennon, Jay Adrick
Hitachi Home Electronics	Paul Thomsen*
ION Media	Brett Jenkins*
Microsoft	Anne Marie Rohaly, Patrick Griffis
Mitsubishi	Wang He Lou
Motorola	Carolyn Taylor*, Mark Schmidt*
MSTV	Victor Tawil
MSTV/UPN	Charles Einolf
NAB	Art Allison, Graham Jones
NBC Universal	Mindy Lauck*
NCTA Consultant	Jeffrey Krauss
News Corp/Fox	Jim DeFilippis*, P.J. Harr*
Nielsen	Mike Dolan
MWG/Tribune	S Merrill Weiss
Panasonic	Peter Fannon
PBS	James Kutzner

Philips	Mark Laramie, Martin Freeman
Pioneer	Adam Goldberg, Rich Annibaldi
Rohde & Schwarz	Mike Simon*
Samsung	C.B. Patel, John Godfrey*
Sanyo	Glenn Rockland
Sarnoff	Hans Baumgartner
Sharp	Craig Tanner
Sigma Designs	Aki Kaniel
Sinclair Broadcast	Mark Aitken*
Sony	Mark Eyer
Sun Microsystems	Jens Paetzold*
TANDBERG Television	Lisa Hobbs*
Techwell	Paul Snopko
Time Warner Cable	Steve Johnston*
Toshiba	John Gawel
Triveni Digital	Rich Chernock*
Zenith	Wayne Bretl, Wayne Luplow
Notes:	* Participated by telephone.

ATTACHMENT 2. TSG-766r4, Draft Agenda

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-2-TSG-766r4-Agenda-2007-11-29.doc

ATTACHMENT 3. TSG-751r3, Draft Minutes of September 20 Meeting

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-3-TSG-751r3-Minutes-2007-09-20.doc

ATTACHMENT 4. TSG-751r5, Draft Minutes of September 20 Meeting (redline)

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-4-TSG-751r5-Minutes-2007-09-20.doc

ATTACHMENT 5. TSG-778r0, Status of Ballots

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-5-TSG-778r0-Status-of-Ballots.doc

ATTACHMENT 6. TSG/S2 Status Report

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-6-S2-Status-Report-2007-11.ppt

ATTACHMENT 7. TSG/S4 Status Report

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-7-TSG-S4-Status-Report.ppt

ATTACHMENT 8. TSG/S6 Status Report

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-8-S6-491r2-S6-Report.ppt

ATTACHMENT 9. TSG/S8 Status Report

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-9-S8-699r0-S8-Status-Report.ppt

ATTACHMENT 10. S8-681r8, Working Draft Revision of CS/TSG-660r1 (AVC)

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-10-S8-681r8-draft-Revision-CS-TSG-660r1-AVC.doc

ATTACHMENT 11. S8-686r5, Working Draft A73 Part 2 (VC1)

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-11-S8-686r5-draft-A73-Part-2-VC-1-Transport.doc

ATTACHMENT 12. Joint TSG/S6 and TSG/S8 Advanced Codec Recommendations

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-12-advanced-codec-motions-final.ppt

ATTACHMENT 13. TSG/S9 Status Report

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-13-TSG-S9-Status.ppt

ATTACHMENT 14. TSG/S10 Status Report

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-14-S10-Status-Report.ppt

ATTACHMENT 15. TSG/S13 Status Report

http://www.atscmembers.org/sg/T3/2007_11_29/documents/Attachment-15-S13-398r1-Status.ppt