

Minutes:
ATSC Technology Group on Distribution (T3)

August 8, 2001

National Association of Broadcasters, Washington, DC

1. WELCOME, INTRODUCTIONS, AND DETERMINATION OF QUORUM

Chairman Ralph Justus (CEA) called the meeting to order at 10:00 a.m. at the headquarters of the National Association of Broadcasters in Washington, D.C. He thanked all of those in attendance, and NAB for hosting the meeting. He asked each of the attendees to introduce themselves. The attendance list is given in **Attachment 1**. The Secretary determined that a quorum was present.

2. APPROVAL OF PROPOSED AGENDA

Chairman Justus asked for consideration of the draft agenda, given in **Attachment 2**. It was accepted without modification.

3. APPROVAL OF THE DRAFT MINUTES OF THE MAY 31, 2001 MEETING

Chairman Justus asked for consideration of the draft minutes from the May 1, 2001 meeting, which were distributed to the T3 reflector on July 31. Secretary Jerry Whitaker (ATSC) reported that editorial comments had been received from Mike Dolan (DIRECTV), which have been incorporated into the document. Additional editorial corrections were received from Art Allison (NAB), Bernie Lechner (consultant), and Rich Chernock (IBM). With the stated changes, the draft minutes were approved.

4. OPENING REMARKS

Chairman Justus said that, reflecting on the agenda for today's meeting, considerable progress has been made in specialist group activities in a number of key areas, many of which are up for discussion on the agenda today. He thanked all of those involved in the various specialist groups for their hard work and congratulated them on their progress.

4.1 Comments by the Executive Director (Mark Richer)

ATSC Executive Director Mark Richer briefed the committee on the status of various efforts within the ATSC. He highlighted the new ATSC Web site, document repository, and reflector services as areas of considerable progress.

4.1.1 Status of ballots

Mr. Richer outlined the status of ATSC membership ballots, as summarized below:

- PSIP Standard A/65A in Taiwan—closed July 11, 2001: 16 yes, 0 no; editorial privileges 17 yes, 0 no.
- Rev. A to Amendment 1 to PSIP (DCC)—closed July 18, 2001: 16 yes, 3 no; editorial privileges 19 yes, 0 no.
- DTV Field Testing Recommended Practice—closed July 26, 2001: 14 yes, 0 no; editorial privilege 15 yes, 0 no.
- Revision to Annex A of A/53 (colorimetry)—closed August 7, 2001: 20 yes, 0 no; editorial privilege 20 yes, 0 no.

There is one document still at membership ballot—Revision A to A/52, which closes August 20, 2001.

4.1.2 Other item

Mr. Richer provided a summary of the actions of the Executive Committee (EC) meeting, which was held August 7. He reported that progress had been made in a number of key areas, specifically governance issues and copyright/references policies. He said that a revision to E/11, the Guidelines for Technical Group Operation, was being prepared and that it would move forward as an element of the governance changes.

Mr. Richer expanded upon the copyright and reference policy approved by the EC at their August 7 meeting. (**Attachment 3**) Mr. Richer explained the reasoning behind the document and emphasized that it still needs to be reviewed by legal counsel. Chairman Justus suggested that detailed discussion of the impact of this policy on the DASE suite of documents be held under Item 11 of today's agenda.

Other items reported by Mr. Richer included educational efforts underway, specifically the upcoming IEEE Broadcast Symposium—where ATSC will help program a half-day tutorial on PSIP implementation—and a two-day seminar in St. Louis. The St. Louis event, being presented in association with the Society of Broadcast Engineers, will focus on PSIP, data broadcasting, closed captioning, and DASE. Mr. Richer encouraged any committee members interested in participating in the program to contact ATSC staff.

5. BRIEF REPORTS ON ACTIONS FROM THE PREVIOUS MEETING

Chairman Justus observed that the action items from the May 31 meeting were on today's agenda and would be dealt with as appropriate.

6. NEW WORK ITEMS FOR DISCUSSION

6.1 Assigned by Executive Committee

Chairman Justus, as suggested by Mr. Allison, observed that the action by the EC in approving the Policy on Copyright and References in effect gave a work item to T3 to develop an inventory of organizations referenced by ATSC Standards and Recommended Practices. Mr. Whitaker reported that a draft inventory of all organizations referenced, both normative and informative, has been completed. Chairman Justus directed Mr. Dolan to work with Mr. Whitaker to develop a final list of organizations for consideration by EC.

6.2 Implementation Subcommittee

IS chair Art Allison (NAB) briefed the committee on the work of the Implementation Subcommittee, specifically items discussed at the July 17 meeting.

6.2.1 Revision to A/54

Mr. Allison called member's attention to IS/199, a review of ATSC Standard A/54 (**Attachment 4**). The document recommended certain revisions to the Standard and suggested that additional study by T3 was appropriate. Mr. Richer pointed out that the document—in addition to the changes identified by IS/199—is subject to the five year review requirement. Chairman Justus indicated that he would ask John Henderson to form an ad hoc group to report back with a plan to move forward. Mr. Allison suggested that revision of A/54 will eventually need to be parceled out among the various specialist groups.

Note: Upon further reflection, Chairman Justus—with the concurrence of Mr. Richer—decided to assign the overall editorial task of revision of A/54 to Mr. Whitaker, who was directed to work with the individual specialist group chairs as required to move forward on the project. Mr. Whitaker will draw on the expertise of Mr. Henderson as necessary.

6.2.2 Active Format Descriptor (IS-SEWG)

Mr. Allison briefed the committee on findings by the Systems Evaluation Working Group (SEWG) to frame the primary format descriptor issues for content producers, broadcasters, and receiver manufacturers. The group's specific recommendation is for ATSC to fashion a system whereby broadcasters transmit certain data that provides receivers with appropriate information about what is being broadcast. The SEWG recommends that this information be added to the DTV standard as a mandatory element. Chairman Justus said he was reactivating T3/S6 to handle this work, with Mark Eyer (Sony) serving as the chair. He asked all T3 members interested in working on this effort to contact Mr. Eyer.

6.2.3 Other items

There were no other items to discuss.

7. REPORT OF THE SPECIALIST GROUP ON DATA BROADCAST, T3/S13 (Regis Crinon)

Regis Crinon (Intel) briefed the committee on recent work in T3/S13 (**Attachment 5**).

7.1 IP Multicast Sessions

Mr. Crinon called member's attention to document S13-012r16 entitled "Delivery of IP Multicast Sessions over ATSC Data Broadcast." (**Attachment 6**) This document is a revised version of the draft standard incorporating the disposition of comments provided in connection with the ATSC T3 ballot that closed after the May 31, 2001 T3 meeting. Mr. Crinon reported that all comments were addressed and resolved in cooperation with the parties that submitted them. He reviewed the changes made to the document, most of which were editorial in nature but two of which were substantive changes. He asked the committee for advice on how to proceed with the document. Following a brief discussion, Mr. Crinon **moved** that the revised document be sent to a three week ballot of T3. **Second** by Mr. Allison. Chairman Justus asked Mr. Crinon to provide an explanation of the substantive changes to accompany the ballot. **Approved** on a voice vote.

It was suggested that this document could be submitted to DVB for consideration, facilitating further cooperation and harmonization among the systems. Chairman Justus asked persons with an interest in this area to work through Mr. Crinon to provide input to DVB. Mr. Richer asked Mr. Crinon to work with him to coordinate this effort.

7.2 Data Synchronization

Mr. Crinon called member's attention to document S13-138r11 entitled "ATSC Synchronized/Asynchronous Trigger Standard." (**Attachment 7**) This is a new draft specification that the Data Broadcast Specialist Group has just completed. Mr. Crinon provided a brief overview of the specification (see Attachment 5).

Primary elements of the document are:

- Background—DIWG requirements
- Framework—triggers and targets
- Synchronized triggers
- Asynchronous triggers

- Signaling in A/90 data service table

Mr. Crinon **moved** that S13-138r12 be submitted to the T3 membership for a six week ballot. **Second** by Mr. Chernock. Renville McMahon (CBS) asked whether the technology proposed in this document has been tested in the real-world. Mr. Crinon responded that implementation experience exists in certain elements of the proposed standard. Mr. Allison pointed out that—like the DASE suite of documents—the motion to approve a T3 vote for this draft standard could be amended to include an implementation analysis stage before moving forward to a vote of the full membership. Chairman Justus suggested that this stage was unnecessary at this point, and Mr. Richer concurred. The streamlined approach was accepted by the committee. Chairman Justus called the question. It was **approved** on a voice vote.

Chairman Justus charged Mr. Crinon with polling the membership of T3/S13 regarding implementation concerns, if any, and to report back to T3 as appropriate.

7.3 Report on Transport Stream File System activities

Mr. Crinon reported on the status of document S13-160, which is still under review in the specialist group. He said that among the specialist group objectives is to maintain a high level of compatibility with DVB. A revised version of the draft specification is expected to be completed before the end of the August.

7.4 Report on communications with SCTE on DVS-161

Mr. Crinon reported that he has provided SCTE with a copy of ATSC Standard A/90 for consideration in their work. He suggested making a formal presentation of A/90 to SCTE DVS in September and to propose a joint ad hoc group to work on the migration of A/90. He asked for T3 advice in this regard.

Various opinions were offered regarding the proposed work with SCTE, including Mr. Lechner who suggested that the proposal for cooperation was a good one. Chairman Justus directed Mr. Crinon to move forward on cooperative efforts with SCTE as appropriate.

8. REPORT OF THE SPECIALIST GROUP ON SATELLITE BROADCAST, T3/S14 (Dipak Shah)

Dipak Shah (DIRECTV) briefed the committee on recent work in T3/S14-A. (**Attachment 8**). He reported that the 14th meeting of the group was held at Motorola, San Diego, on June 19. Work included the following:

- Reviewed and drafted Audio (Section 5.1) specification, “Audio Specifications for ATSC Satellite Broadcast” (**Attachment 9**)
- Reviewed and drafted Video (Section 5.2) specification, “Digital Video Specifications for ATSC Satellite Broadcast” (**Attachment 10**)
- Reached agreement on Transport (Section 5.3) specification

Chairman Justus asked that any committee members with feedback on the draft documents forward those comments to Mr. Shah and his group.

Mr. Allison suggested that T3/S14-A and T3/S6 coordinate work on active format descriptors. Chairman Justus concurred and so directed Mr. Shah.

8.1 Review next S14-A meeting agenda

The next meeting of T3/S14-A is set for August 23 at Motorola in San Diego. The tentative agenda includes review and completion of Sections 5.1 Audio and 5.2 Video, and continued discussions on Sections 5.3 Transport and 5.4 PSIP.

The meeting broke for lunch at 11:40 a.m.

The meeting resumed at 12:30 p.m.

9. REPORT OF THE SPECIALIST GROUP ON RF TRANSMISSION, T3/S9 (John Tollefson)

John Tollefson (PBS) was unable to attend the meeting, but he did provide a printed report (**Attachment 11**).

9.1 Status update

Mr. Tollefson reported that as a result of a firm decision to consider only compatible solutions, T3/S9 has narrowed the range of responses actively being considered for purposes of modifying the A/53A Standard to three dual-stream responses (NxtWave, Philips, and Zenith) and two enhanced training signal responses (Broadcom and Oren). He said T3/S9 has asked each of these responders to work with the others to develop a merged response.

Mr. Tollefson said a sub group is working on an actual red-lined version of the existing A/53A Standard. Additional sub groups within T3/S9 are working on laboratory and field test plans, which are scheduled to be completed in August.

Discussion followed review of the report submitted by Mr. Tollefson that focused on backward compatibility, the potential for merging the various proposals, and interference issues.

10. SPECIALIST GROUP ON DATA MULTIPLEX/TRANSPORT, T3/S8 (Bernie Lechner)

10.1 Review of A/55, A/56, A/58 and Annex C to A/53

Mr. Lechner provided a status report on the review of ATSC Standards A/55, A/56, A/58, and Annex C to A/53. He reported progress on all efforts, specifically:

- A/55—work has been completed on this document
- A/56—work on this Standard has been referred to SCTE
- A/58—issues relating to code points are on-going in an ad hoc group chaired by Michael Isnardi (Sarnoff)
- A/53A Annex C—work on this document will be addressed by the PSIP ad hoc group as soon as work is completed on the draft PSIP Recommended Practice

10.2 Status of next Corrigendum to A/65A

Mr. Lechner called members attention to the proposed Amendment 2 to A/65A (**Attachment 12**). Mr. Lechner **moved** that the document be sent to a six week ballot of T3. **Second** by Mr. Allison. The motion was **approved** on a voice vote.

10.3 Status of work on Content Identification and Replacement of A/57

Mr. Lechner reported on this work, being undertaken jointly with SMPTE. He said there are some issues still to be resolved, and he did not expect this work to be completed until late in the year.

10.4 Status of work on Advanced EPG Functionality

Mr. Lechner said work on advanced EPG functionality has been on hold because of summer vacation and travel issues. He said, however, that he expects to have progress to report at the next T3 meeting.

10.5 Request to add Copy Control Descriptor to PSIP

Mr. Lechner briefed the committee on the background of this issue. He called member's attention to document T3-553 (T3/S8-437rev5), which has been distributed to the T3 reflector. (**Attachment 13**) This document contains a proposed change to A/65A to add a descriptor that may be used to convey retransmission control information associated with audio, video, or data events. Subsequently, a new version of this document (rev. 6) was developed and posted to the T3 reflector (**Attachment 14**).

Mr. Lechner **moved**, on behalf of T3/S8, to send T3-553 (S8437rev5) to a six week ballot of T3. **Second** by Brian Smith (Philips). Discussion of the document followed, with Scott Hamilton (Fox) speaking against the motion. He explained the changes incorporated into Revision 6, and the reasons for those changes. He urged, instead, that Revision 6 be the document sent to ballot. Addition comments against the motion included Wendy Aylsworth (Warner Bros.) and Merrill Weiss (Tribune). Adam Goldberg (Sharp), speaking in favor of the motion, voiced concern over the revised wording contained in Revision 6, which he said was unclear. Mr. Crinon expressed basic concern over the proposed descriptor, saying he was opposed to both Revisions 5 and 6. Mr. Eyer said that Sony also is opposed to both versions of the document. He said the issue should be returned to T3/S8 for resolution. Chairman Justus called the motion. It was **defeated**.

Mr. Allison **moved** that T3 vote whether to approve S8437rev6 *at this meeting* rather than to submit it to a written ballot. **Second** by Ms. Aylsworth. Discussion followed.

Mr. Smith, speaking in opposition to the motion, said his company felt the wording of Revision 6 was unnecessarily broad and could, therefore, not support it. Mr. Hamilton, speaking in favor of the motion, responded to the concerns, saying that the wording contained in the document was based on advice from legal council. Mr. Goldberg spoke against the motion saying that certain wording in the document—specifically, “unauthorized retransmission”—is excessively vague. Mr. Crinon echoed those sentiments, adding that this process—in effect bypassing T3/S8—sets a bad precedence. He urged that the issue be returned to T3/S8 for further consideration with the goal of reaching consensus within the specialist group. Mr. Allison spoke strongly in favor of the motion, saying resolution of this issue was essential to the successful rollout of DTV. Chairman Justus called the motion. It was **defeated** on a roll call vote.

Chairman Justus observed a consensus to return this issue to T3/S8 for further consideration, and so directed the specialist group to study Revision 6 and report back to T3 at its next scheduled meeting.

10.6 Work on Code-Point Issues

Mr. Lechner reported that considerable progress has been made in Mr. Isnardi's Ad Hoc Group, with a final report expected to be delivered to T3/S8 at its September meeting.

10.7 PSIP Implementation Guidelines for Broadcasters and Receiver Manufacturers

Mr. Lechner reported considerable progress on T3/S8-456 (**Attachment 15**) and stated that a tentative timetable has been set for moving the draft Recommended Practice to the T3 level. The Ad Hoc Group plans to send the document to T3/S8 by August 27. Furthermore, it is expected that the draft RP will be made available to attendees at the IEEE Broadcast Symposium on October 3 in Alexandria, VA.

11. REPORT OF THE SPECIALIST GROUP ON DASE, T3/S17 (Glenn Adams)

Glenn Adams (XFSI) briefed the committee on the status of the work of T3/S17 in general, and the DASE suite of documents in particular (**Attachment 16**).

11.1 DASE Parts 1-5 ballot comment resolution recommendations

Mr. Adams reported that comments received during balloting of the first five documents in the DASE suite have been resolved. The documents involved are:

- T3-528R2 DASE-1 Part 1: Introduction, Architecture, and Common Facilities
- T3-529R2 DASE-1 Part 2: Declarative Applications and Environment
- T3-530R2 DASE-1 Part 3: Procedural Applications and Environment
- T3-531R2 DASE-1 Part 4: Application Programming Interface
- T3-532R2 DASE-1 Part 5: Portable Font Resource Format

Mr. Adams outlined the comment resolution process and provided a breakdown of the types of comments received (**Attachment 17**). He furthermore reported consensus of T3/S17 that DASE Parts 1 through 4 be reballoted by T3 inasmuch as substantive changes have been made in response to comments received. He added that Parts 6 through 9 are ready for ballot by T3. Those documents are:

- T3-533R0 DASE-1 Part 6: ZIP Archive Resource Format
- T3-534R0 DASE-1 Part 7: Security
- T3-535R0 DASE-1 Part 8: Application Delivery System—ARM Bindings
- T3-536R0 DASE-1 Part 9: Conformance

The entire suite of DASE documents, as presented to T3, are given in **Attachment 18**. Mr. Adams also called member's attention to a Minority Position regarding DASE Level 1 security, given in **Attachment 19**.

11.2 DASE parts 1-9 (Re)ballot

Mr. Adams **moved** that DASE parts 1–4 and DASE Parts 6–9 be forwarded to a ballot of T3 for a period of six weeks. **Second** by Mr. Tanner. Mr. Allison spoke in opposition to the motion, saying that each of these documents should be considered separately. Mr. Dolan agreed with Mr. Allison's point, saying that the motion was too broad. He added that he was opposed to keeping Part 5 as an element within the DASE suite, saying there is no point in duplicating an ISO standard. Regarding Part 8, he said this document is likely to change and it is therefore premature to submit that document to ballot. Those sentiments were echoed by Edwin Heredia (Microsoft), who identified the Sun click-through license requirement as a serious problem with Part 3. Mr. Crinon said Intel will be forced to vote no on Part 3 because of the click-through license requirement.

Mr. Adams, speaking in response to previous comments, stated that consensus has been reached on these documents and that it was entirely proper to move forward with T3 action. Regarding Part 3 and the click-through license, Mr. Adams said there is no easy answer to this issue, which—he reminded the group—is being examined by the EC.

Pat Griffis (Microsoft) suggested that Mr. Adams might amend his motion to permit ballot votes to be taken on individual documents rather than as a block of documents. A straw poll taken on Mr. Griffis's suggestion did not yield a clear consensus.

Subsequent discussion centered on the process for moving forward, specifically the prior agreement on the part of T3 that none of the DASE documents move forward to a ballot of the full ATSC membership until all of the documents have been approved at the T3 level, and an assessment has been made of implementation requirements.

Chairman Justus called the question. It was **approved** on a roll call vote: 12 yes, 10 no, 5 abstain. Mr. Allison asked for a quorum check. Chairman Justus determined that a quorum of voting members was present.

Other work items identified for Mr. Adams and T3/S17 included providing a list of “candidate references” to ATSC staff that are applicable to the DASE suite of standards.

Mr. Allison **moved** that T3 ballot the question of withdrawal of Part 5 of the DASE documents in favor of the ISO document. **Second** by Mr. Dolan. Mr. Adams spoke against the motion, suggesting that this issue should instead be referred to T3/S17 for further consideration. Mr. Allison amended his motion to say that T3 refer Part 5 back to T3/S17 with instructions to revise Part 5 to reference the appropriate ISO standard and include the constraints and clarifications that they feel are appropriate. Mr. Dolan accepted the revised wording. **Approved** on a voice vote.

11.3 S17 scope of work

Mr. Adams stated that T3/S17 will review its scope of work and report back at the next T3 meeting with recommendations on moving forward.

12. REPORT OF ARM, T3/S18 (Mike Dolan)

Mr. Dolan reported on the activities of T3/S18 (**Attachment 20**). Accomplishments include the following:

- Revised State Model for Application Replacement
- Brokered TSFS Attributes between T3/S13 and T3/S17
- DTVCC connectivity and buffer model
- Introduced Broadcaster Policy
- Started on Transport Event Formalism

Mr. Dolan went on to summarize the coordination issues among T3 specialist groups, specifically:

- (S8) Service Name Descriptor
- (S8) Broadcaster Policy Descriptor
- (S13) TSFS Dependency
- (S17) Broadcaster Policy Semantics
- (S17) DASE Part 8 Interdependencies

Mr. Dolan said that progress is being made on a standards document relating to the work of T3/S18 (ARM001R6). A draft of that document, “ATSC Data Application Reference Model,” was distributed for comment (**Attachment 21**).

13. SPECIALISTS GROUP ON TRANSACTIONAL SERVICES, T3/S16 (Rich Chernock)

Mr. Chernock reviewed the work of the specialist group, which has primarily been conducted via teleconferences. He called member’s attention to the T3/S16 draft requirements document, S16012r3 (**Attachment 22**). Mr. Allison suggested this document should include a mechanism for content control, adding that he takes exception to item 15¹, saying that ample Internet-based delivery methods currently exist. Mr. Chernock agreed that clarification would be appropriate.

In response to a question from Chairman Justus, Mr. Chernock reviewed the current work plan for T3/S16.

1. ¹ “There should be a standardized mechanism to deliver objects (eg: text, still pictures, graphics, audio and data) to the user terminal via the transactional services channel.”

14. OTHER BUSINESS

14.1 MPEG liaison (Regis Crinon)

Mr. Crinon briefed the committee on MPEG liaison activities relating to the work of ATSC, specifically MPEG-4 (**Attachment 23**). Documents exchanged include the following:

- SC 29 N4349 (SC 29/WG11 N4314)
- SC 29 N4313 (SC 29/WG 11 N4270)

Additional items covered in Mr. Crinon's report concerned MPEG-2 systems, specifically:

- N4262: Corrigendum 2 to DSM-CC
- N4261: Draft Corrigendum 2 to MPEG-2 Systems 2nd edition

14.2 AdHoc on Collision Avoidance (Rich Chernock)

Mr. Chernock briefed the committee on the collision avoidance issues (originally called *private fields/ranges*). In short, the problem attacked was how to ensure that collisions could be avoided with the use of the user private fields or user private ranges of standardized fields in open systems, such as the ATSC standards. Two documents were distributed prior to the meeting:

- T3-548, "ATSC usage of the MPEG-2 Registration Descriptor" (Attachment 24)
- T3-549, "Collision Avoidance for Private Fields and Ranges" (Attachment 25)

These documents, the final output from the T3 Collision Avoidance Ad Hoc Group, provide a set of rules, which if followed, allow the unique identification of all uses of private fields or ranges. The conclusions from this work will be used as input to the next revision of the affected ATSC standards (specifically, A/53A, A/65A, and A/90). Mr. Chernock also reported that, because this problem is not unique to ATSC, the findings should be communicated to other standards organizations faced with the same issues, starting with SCTE.

Mr. Chernock **moved** that documents T3-548 and T3-549 be sent to the Executive Committee with a recommendation that the documents be accepted as Technology Group Reports. **Second** by Mr. Allison. The motion was approved on a voice vote.

14.3 Liaison documentation report

Mr. Chernock called member's attention to a message posted to the T3 reflector documenting the current status of ATSC liaison efforts. (**See Attachment 26.**)

15. SCHEDULE OF NEXT T3 MEETINGS

The next meeting of the ATSC Technology Group on Distribution is set for October 3, 2001, at PBS in Alexandria, VA. The final meeting of T3 this year is set for December 5, 2001.

16. ADJOURNMENT

There being no further business before the committee, Chairman Justus adjourned the meeting at 4:15 p.m.

Attachments

Attachment 1: Attendance list

http://www.atsc.org/T3/Aug_8_2001/Documents/Attachment_1_attendance_list.pdf

Attachment 2: Draft agenda

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_2_draft_agenda.doc

Attachment 3: Draft ATSC Policy on Copyright and References

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_3_copyright_policy.pdf

Attachment 4: IS/199

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_4_IS199.pdf

Attachment 5: T3/S13 Status Report

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_5_S13report.PPT

Attachment 6: S13-012r16

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_6_S13_012r16.doc

Attachment 7: S13-138511

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_7_S13_138r11.doc

Attachment 8: S14-A Status Report

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_8_S14report.ppt

Attachment 9: T3/S14-A Audio Spec

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_9_audio_spec.doc

Attachment 10: T3/S14-A Video Spec

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_10_video_spec.doc

Attachment 11: T3/S9 Status Report

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_11_S9report.doc

Attachment 12: A/65A Amendment

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_12_T3_552.doc

Attachment 13: Retransmission Control Descriptor Rev. 5

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_13_T3_553.doc

Attachment 14: Retransmission Control Descriptor Rev. 6

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_14_T3S8_437r6.doc

Attachment 15: A/65 Implementation Guidelines Draft Recommended Practice

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_15_T3S8_456.pdf

Attachment 16: T3/S17 Status Report

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_16_T3S17report.ppt

Attachment 17: T3-537R0 Disposition of Comment on T3 Ballot of DASE-1 Parts 1-5

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_17_T3_537R0.doc

Attachment 18: DASE Document Package

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_18_DASE.zip

Attachment 19: Minority Security Report

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_19_minority_report.doc

Attachment 20: T3/S18 Status Report

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_20_T3S18status.ppt

Attachment 21: ARM001R6a

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_21_arm001r6a.doc

Attachment 22: T3/S16 012r3.doc

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_22_S16_012r3.doc

Attachment 23: MPEG Liaison

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_23_MPEG_liaison.ppt

Attachment 24: T3-548

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_24_T3_548.doc

Attachment 25: T3-549

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_25_T3_549.doc

Attachment 26: T3 Liaison

http://www.atsc.org/sg/T3/Aug_8_2001/Documents/Attachment_26_T3_liaison.doc