

Minutes: ATSC Technology Group on Distribution (T3)

May 17, 2000, 10:00 AM – 4:30 PM

National Association of Broadcasters, 1771 N Street, N.W., Washington, DC

1) Welcome, Introductions and Determination of Quorum

Chairman Ralph Justus (CEA) called the meeting to order at 10:08 AM EDT. Those present introduced themselves. Chairman Justus requested that those joining by telephone provide their name and company information to Christy Kehlbeck via email. Those attending are shown in Attachment 1.

2) Approval of Proposed Agenda

Chairman Justus proposed amending agenda item 6 to add an item on audio bit rate. It was agreed to move items 7 and 8 to item 18, and item 17A was amended to read “Wireless Communications Assn.” Bill Miller (SMPTE) requested that items 7 and 8 be returned to their original spot on the agenda. Mr. Justus decided to leave the items under 18, and review the placement during the course of the meeting. The agenda was approved as amended.

3) Approval of the Draft Minutes from the February 16, 2000 Meeting

Item 7, Paragraph 2, third line: change “there” to “where”. The minutes were approved as amended to reflect this change.

4) Opening Remarks

a) Comments by the Executive Director

Executive Director Mark Richer noted that many of those present attended the previous day’s ATSC Annual Meeting. Mr. Richer reported that there is one new work item on audio. S14 was renamed to “Specialist Group on Satellite Broadcast”. Those present indicated that they were aware of the new ATSC Task Force on RF System Performance, and an additional report was offered. Concerning agenda item 7 (the ATSC Standards Process), Mr. Richer reported that there is a small task group (including Messrs. Miller, Goldman, and Richer) reviewing the standards development process with regard to three key issues: 1) how can work move more quickly through the ATSC standards development process; 2) should a stage be included where requirements are developed and frozen, and other requirements are reserved for a future version; and 3) should a standard be frozen while theoretical analysis and practical testing are conducted. Mr. Richer noted that, since this item was assigned to the Task Group by the ATSC Executive Committee, then very minimal discussion was needed today.

Mr. Richer reported that there are currently 199 ATSC members. Mr. Richer also reported that ATSC is filing comments describing ATSC’s activities with the FCC on the DTV Biennial Review NPRM. He also noted that the ATSC Executive Committee has recommended that ATSC should suggest to the FCC that Standard A/65 (PSIP) should be mandatory under FCC regulations.

Concerning ITU, Mr. Richer suggested that those with a specific interest in ITU contact should contact him. SG6 now includes the activities of SG10 (Sound Broadcasting) and 11 (Television Broadcasting).

It was reported that ARIB submitted its data broadcasting report to the ATSC during the joint meeting at the NAB convention. Mr. Richer described ARIB’s work as focusing on the presentation engine side of DASE. It was agreed that ATSC and ARIB would share documents and harmonize where possible. Mr. Richer reported that the ARIB information would be shared with S17. Concerning non-alphabetic language use, some contacts will be provided to T3/S8. Rich Chernock requested sharing information also with S13, since some aspects of this work relate to data broadcasting.

Mr. Richer also reported that PBS has been added to the ATSC Executive Committee.

b) Status of Ballots

Mr. Richer reported that S13 submitted the draft Data Broadcast standard for ballot to T3, and that it was approved with comments. An ATSC ballot will follow. Other activities include the following:

- The ballot of Amendment 1 to Conditional Access Standard A/70 will close on May 30, 2000.
- The ballot of Revision A to PSIP Standard A/65 (incorporating the Corrigendum and Amendment 1) will close on May 30.

- The ballot of Amendment 1 to Rev. A of PSIP Standard A/65 (re: Directed Channel Change) will close on May 30.
- The ballot of Revision A to Transmission Measurement and Compliance Standard A/64 to ATSC will close May 30.
- The Data Broadcast Implementation Guide was sent to T3, and comments were received.

c) Other Items

There were none.

5) Brief Reports on Actions from the February meeting

a) Content Identification Developments

Mr. Miller reported that much work has been done on reconciliation of comments regarding ISAN. SMPTE submitted detailed comments to TC46SC9. He reported that he would discuss the reconciliation of U.S. national body comments tomorrow and observed that it may be necessary to have a separate UPID from the ISAN number, due to separate goals between organizations. U.S. National body comments will seek to restrict the scope of the ISAN number to allow coexistence with UPID. There was a question concerning cross-referencing between ISAN and UPID and it was noted that both the UPID and ISAN numbers will need to be carried. Mr. Miller indicated that the SMPTE comments can be circulated to T3. NISO posts the US national body comments on www.niso.org

b) Ad Hoc Group on Glossary

Glenn Adams (Gemstar) reported that ATSC-Vocabulary Ad Hoc Group is now on a reflector with 10-12 members. Those with an interest should contact Glenn Adams. He reported that the purpose of the work is to identify/compile acronyms/terms that are currently published. This group is in the process of compiling terms/acronyms from those standards that are in draft. Following this effort, conflicts in usage will be identified, and harmonization undertaken. Mr. Richer suggested that this effort become a technology group report and, if this is the desired path, the ATSC Executive Committee (EC) can authorize that approach. A T3 ballot would then follow, with subsequent publication.

There was a T3 consensus that Mr. Richer should prepare a work item for the next ATSC Executive Committee, requesting EC permission to label this work as a Technology Group Report.

c) Interoperability/Implementation Testing

Art Allison (NAB) reported that document T3-520 reflects the work in this area. The report is on the agenda, at item 18, and Mr. Allison recommended deferring discussion to agenda item 18. But since Mr. Allison has completed the task, Mr. Justus recommended that T3 defer this issue to ATSC Executive Committee and Mr. Richer solicited input on this work.

d) Develop Position on RRT Assignment to HBO

Bernie Lechner reported that HBO submitted a document to SCTE (DVS-270) proposing an additional rating table, intended to be used in conjunction with the U.S. Region Rating Table, defined in ATSC Standard A/65 and EIA-766. He observed that it is not clear how this would be implemented and recommended continuing to carry this as an item on hold. During discussion, it was noted that should the RRT be assigned a number, then (numerically) it would receive number 4. Mr. Allison observed that there is a definition of region contained in the standard, and HBO does not meet that definition. He concurred with the recommendation to keep the item on hold. Mr. Richer explained that the purpose is to clarify the process for RRT assignment. Michael Isnardi (Sarnoff) reported that future RRT numbers should be assigned sequentially in the order that requests are received. Jeff Krauss expressed concern regarding the NAB suggestion that ATSC should refuse to acknowledge this request, offering that without a well-defined policy in place, ATSC should not refuse to grant an assignment.

Mr. Justus delegated a work item to the Isnardi/Richer/Lechner (and other volunteers) Task Force on Registration Issues to define a procedure for assigning a number, and how the term "region" is defined for purposes of assignment of an RRT number, for submission to the ATSC Executive Committee.

Furthermore, it was agreed that T3/S8 and R4.3 should further explore the technical issues concerning the HBO proposal. T3/S8 handles the ATSC bitstream, and Peter Dare asked whether HBO is transmitting an ATSC bitstream. Mr. Lechner explained that HBO was proposing to use the existing U.S. RRT, augmented with an HBO RRT containing additional information.

e) Defining Permissible Use of User Private Descriptors

Mr. Isnardi reported that no work has been done on this item, since the task group is focused on other matters. It was agreed to defer discussion to item 8.

6) New Work Items for Discussion (assigned by the Executive Committee, if any)

Chairman Justus reported that the ATSC EC assigned back to T3 the disposition of changing the audio bit rate. Craig Todd (Dolby) suggested that T3 draft a modification, revising Table 1, Annex B, of Standard A/53. Mr. Todd asked whether this revision should be handled alone, or if other changes to A/53 are pending. Chairman Justus assigned Mr. Todd the task of preparing a draft modification to A/53 as discussed, and he agreed to have a draft document to T3 one month prior to the next T3 meeting. Mr. Richer reported that, should T3 wish to vote approval of this change during its next meeting, T3 will need to announce the vote on the agenda with advance distribution.

Mr. Richer reported that there was a list of A/53 constraints, and that the ATSC EC requested that T3 consider publishing this as an ATSC technical report. It was noted that Joe Rodolico chaired an Ad-Hoc Group that developed this list, and Mr. Lechner reported that the document summarizes only the constraints contained in Annex C of Standard A/53. Mr. Richer clarified that the ATSC EC has authorized T3 to publish this list as an ATSC technical report. Mr. Allison suggested that the list clarifies the constraints in Annex C, and is of benefit, with appropriate labeling and a preamble. Mr. Krauss reiterated his desire that ATSC address procedures for those standards that would not accommodate legacy equipment. Mr. Goldberg noted that this list would document existing ATSC constraints, but a recommendation should be made that decoding equipment avoid assuming that these constraints will always be followed. Mr. Justus assigned this item to T3/S8 for further discussion, with a request that T3/S8 present a recommendation to T3 concerning publication of the document as an ATSC technical report.

7) Standards Development Process Issue

This item was deferred to the ATSC Executive Committee task group.

8) Discussion of ATSC Control/Management of Data Fields Labeled Private or User Defined

Mr. Allison reviewed this issue, referring to doc. T3-519, noting that an individual user can select a private value, expecting receivers to operate, regardless of whether or not another private user selects this number. He clarified that private data payload is not under discussion, and urged T3 to address this issue.

Richard Chernock (IBM) suggested that private field usage expectations include that, if the designator is not recognized, it will be ignored. Jean-Louis Diascorn indicated that if a user-defined field is encountered, then it should be addressed, and encouraged ATSC to retain space for user-defined fields in its standards.

Mr. Miller indicated that since ATSC is developing an open system containing private data, problems arise because the outcome is not defined, and two users can identify private data in the same way. He recommended creating a formal private data registration authority. Mr. Isnardi wished to understand better the place of user private descriptors in an open standard. He offered that the option to eliminate all user private tables and descriptors appears to have been eliminated. Sam Narasimhan noted that including such items in a standard indicates that the descriptors are private and user-defined, and suggested identifying a hierarchy for such domains between MPEG and ATSC. Mr. Allison noted that ATSC has allocated private user bytes, as did MPEG, but without the MPEG registration authority.

Mr. Isnardi complimented Mr. Allison on his effort to clarify the issue and indicated that ATSC should determine whether Standard A/65 should have a bounding statement to include an ATSC registration descriptor for identification purposes. He observed that, having done so, and having identified private user sections in the PMT and recommended that when the stream is identified as an ATSC stream, then a user should register the code point.

Mr. Lechner offered that unless registration descriptor are included in the PMT, should two broadcasters attempt to send private data, then collision is imminent and ATSC should, therefore, act as a registration authority. Because these streams are likely to be carried on cable systems without such descriptors (SCTE has an MPEG descriptor, but its use is not mandated, and no one is using it), he noted that there are a number of interoperability issues.

Mr. Justus noted that T3 had formed a Task Force to address this issue, and that the Task Group, chaired by Mr. Isnardi should further discuss this off-line. Mr. Justus asked whether this is a T3 issue or a T3/S8 issue. Mr. Isnardi suggested a review of all user private data. Mr. Miller noted that private data is present in transport and video streams, and this issue spans more than T3/S8. Peter Dare (Sony) offered that private data and related services offer a number of different applications, whether or not the T3/S13 document is FCC-mandated. Merrill Weiss noted that different classes of registration are recognized in an analogous SMPTE effort and suggested that the task group should consider different registration number classes.

Mr. Justus assigned this group to Mr. Isnardi's task group. Mr. Isnardi indicated that he would identify all items assigned to the task group, and that priority assignments would need to be made for these tasks. Mr. Richer suggested that some of these items may be assigned to T3/S8, or elsewhere. Mr. Miller noted that, within SMPTE, drafts exist, and he agreed to submit these documents to ATSC as background information.

Pat Griffis (Microsoft) suggested that there are some decisions concerning assignment of registration numbers that could become policy issues, and thus not appropriate for SG consideration. Mr. Richer suggested that, at its next meeting, T3 should evaluate these work items, and make a determination as to whether these work items are assigned to T3, an SG, or forwarded to the ATSC EC (as policy decisions). Mr. Justus requested that a draft report be distributed to T3 by August 1, 2000, to permit consideration prior to the next T3 meeting.

9) Discussion of Specialist Group and Subgroup Composition Policies

Mr. Griffis reported that there is a concern regarding "Guidelines for Technology Group Operation" E/11 and representation on Specialist Groups and subordinate groups. He reported that the creation of a subgroup is of concern, in that misuse could suppress minority opinions and suggested that with assistance from Messrs. Justus and Richer, revisions to E/11 addressing subgroup formation could be developed.

Richer noted that revisions to E/11 are not a T3 group task, but suggested recommending these revisions to the ATSC EC or its Task Group on standards development. He indicated that the incident giving rise to this issue has been addressed and noted that under E/11 the Specialist Group chair can appoint members of the subgroup, but it is not permitted to "close" any meeting. Mr. Richer welcomed proposed revisions to E/11. Mr. Justus invited Mr. Griffis to submit proposed E/11 revisions to the ATSC EC Task Group. Mr. Griffis noted that openness should be encouraged in all instances, but there is some remaining ambiguity. Mr. Richer indicated that, as ATSC Executive Director, he can provide interpretations of ATSC operating procedures; however, it is also possible to refer the question to ATSC Counsel.

10) Report of the Specialist Group on RF Measurements (T3/S10)

Those present reviewed the summary of T3/S10 (Receivers) provided by John Henderson. A question arose whether the item titled "Use of captured signals in addition to the defined ATTC test" is intended to refer to ACATS or ATSC. Mr. Richer clarified that the T3/S10 report refers to: 1) ACATS test, 2) RF capture measurements that are currently in progress; and 3) reference to ATSC RF Task Force that has to do with common methodology. Mr. Justus encouraged T3/S10 to include a clarification of its scope/purpose to indicate appropriate application. Mr. Allison encouraged T3 to ensure that it is not impeding the T3/S10 work by not adopting the T3/S10 scope and suggested that T3 adopt the existing T3/S10 scope, with a recommendation for clarification. Mr. Adams recommended that T3/S10 prepare a requirements document that would assist in T3/S10 work, but Mr. Allison recommended separating the requirements from the scope work.

Mr. Dare suggested that receiver testing efforts may be duplicated in various venues. Mr. Krauss clarified that he did not wish to slow the T3/S10 effort, but wished to clarify how important testing procedures are for testing in two different labs (either repeatability or replication). Mr. Richer clarified that this laboratory test methodology predates the ATSC RF System Performance Task Force, and was assigned by ATSC EC via T3. He noted that the purpose of the test methodology is to permit receiver manufacturers to test receivers and noted that T3/S10 is attempting to expedite its work, drawing where possible from existing work, and that the T3/S10 work does not conflict with ATSC RF System Performance Task Force work. Mr. Justus noted that the T3/S10 scope was approved by T3 without objection.

17) Report of the Specialist Group on Point-to-Multipoint (T3/S15)

(This item was taken out of order.) Andy Butler (PBS) reported that T3/S15 work is paralleling work by the Wireless Communications Association Engineering Committee. On behalf of T3/S15, he recommended that the Specialist Group go inactive, since WCA work is proceeding well and expects to complete its standard 3Q 2000. On completion, he noted, T3/S15 would review this standard and, if appropriate, recommend the WCA standard as a document to be referenced by ATSC.

Mr. Allison asked about the status of WCA, and it was noted that WCA is not an ANSI-accredited standards developing organization. Mr. Butler reported that its purpose is to develop payload-agnostic standards. Mr. Richer recommended that T3/S15 be put on hold for the time being, delegating Mr. Butler as the T3/S15 liaison to fully evaluate WCA's effort and notify WCA of ATSC T3 interest, and to coordinate with WCA and IEEE to ensure that there is a method for carriage of ATSC streams. This was agreed to by Mr. Butler.

Mr. Krauss reported that IEEE 802.15 is doing work in this area as well and Mr. Weiss recommended coordinating with the WCA and IEEE.

11) **Report of the Specialist Group on Data Multiplex/Transport (S8)**

The ballot status of T3-508, "Amendment to PSIP to add Directed Channel Change," was discussed previously.

Report on Ad Hoc Group on Extensions to Accommodate Non-Alphabetic Languages

Mr. Lechner reported that there is a draft proposed Recommended Practice, which is not yet complete, written as a draft RP, but containing "shall" statements. He recommended revising this document to become a proposed standard.

Secondly, he reported, that the issue of downloading characters has surfaced. The RP contains a scheme for doing so that is appropriate for Taiwan use; however, there was a sense that broader work should be undertaken to accommodate other ATSC needs, e.g., T3/S17 work. Mr. Lechner stated that T3/S8 recommends to T3 initiating work on a more general approach to downloading characters. Mr. Miller also recommended doing so.

Mr. Krauss asked if this would include subtitles. It was reported that this effort is intended to provide PSIP A/65 with the resources necessary to download and display unusual characters, for example, Russian text to target a minority audience in the U.S. In addition, there is the possibility of providing user private characters that have no standardized representation within a font. Other issues to consider include evaluating icons that have multiple purposes.

Mr. Dare suggested full definition of what is to be undertaken before the work begins, for example, drafting a requirements document. Mr. Miller recommended that T3/S8 draft a rough requirements document before transferring the work elsewhere. Mr. Lechner agreed to identify a T3/S8 volunteer to do a first draft of a requirements document for T3 consideration.

It was the sense of T3 that a general purpose solution (one that is not necessarily specific to Taiwan) and a requirements document are in order. Chairman Justus suggested that the proposed work item, and draft requirements document should be distributed to T3, and subsequently to the ATSC EC. Mr. Dare asked about a prospective Implementation Subcommittee role. Mr. Lechner offered that, following development of the requirements document, the IS group may wish to evaluate specific applications. Mr. Adams agreed to prepare a requirements document for T3/S8 consideration.

Nevertheless, Mr. Lechner stated that the Taiwan document should proceed. Mr. Richer noted that T3 authorizes recreating the Taiwan recommended practice as a standard. Mr. Adams expressed a minority opinion concerning the development of the Taiwan RP as a standard, suggesting that Taiwan could adopt an RP as a normative standard. But, Mr. Richer noted that Taiwan officials had requested inclusion of the word "shall" in the ATSC document, and he offered a plan to adopt a supplement to an ATSC standard. Mr. Allison offered that there is a standard for "50-Hz" countries, establishing a precedent for country-specific standards in the ATSC suite.

Mr. Miller suggested calling this document a standard, noting an SMPTE philosophy. Wendy Aylsworth (Warner Bros.) suggested that creating a single standard for each country offers the opportunity for conflict. Mr. Adams noted that the RP is currently tied specifically to Taiwan, and that generalizing from the current document is difficult. He offered that Taiwan has offered no representation that it wishes this be published as a standard.

Mr. Richer reported that ATSC has been asked by Taiwan to develop this document. The test should be with respect to normative requirements necessary for interoperability. He urged completion of the document as an ATSC Standard. Mr. Miller noted that if the document is drafted in such a way then it can only be used by Taiwan, there will be no possibility of confusion. Mr. Richer recommended that T3/S8 review the definitions of standard and recommended practice in ATSC.

It was agreed that T3/S8 would bring the document to T3 as a standard, permitting T3 to address the issue at an appropriate time. Furthermore, Chairman Justus suggested that this issue be reconsidered if and/or when other countries make such requests.

a) Report on Ad Hoc Group on Content Identification

This item was covered during the ISAN/UPID discussion. When the issue is resolved, T3/S8 will write the document on the container.

b) Report on Ad Hoc Group on PSIP

Mr. Lechner noted that all are working hard to identify and resolve the remaining issues related to PSIP implementation. Mr. Isnardi noted that his NAB Convention tutorial presentation on PSIP is now available on the Sarnoff web site. At www.Sarnoff.com/ click on technology groups / click on broadcast. Mr. Lechner noted that

FCC adoption of PSIP would also help.

Mr. Lechner reported that within a couple of months, another corrigendum/amendment to A/65 would be identified.

Mr. Lechner reported some issues concerning major channel number assignments. Standard A/65 Annex B states that US broadcasters shall use their assigned NTSC channel number as their major channel number. If no NTSC operation is present, he said, then the DTV RF channel assignment is used. Mr. Lechner reported that some broadcasters would prefer now to use their digital channel number. This will work since there will be no conflict within a market. It is also possible to use the same major channel number to identify programs on two different physical channels in a given market. He reported that T3/S8 will prepare a draft modification to Annex B of A/65 addressing such proposed practices for consideration by T3.

During discussion, it was determined that:

- Some receivers may ignore two stations with the same major channel numbers.
- PSIP cannot accommodate two stations using the same major/minor channel number combination.
- There is a triumvirate of PSIP data (including VCT, TSID, NTSC TSID).
- Two physical frequencies could be tied to the same major channel number.
- Spectrum is scheduled for return to FCC, and the T3/S8 proposal should accommodate such return.

Satish Thatte agreed to provide 200 copies of the Triveni PSIP transport diagram to ATSC for distribution to ATSC members.

12) Report of the Specialist Group on Data Broadcasting (T3/S13)

a) Ballot Results

Regis Crinon (Intel) reported that of the 46 eligible voters, 21 voted. Of those 21, 9 provided comments on the T3-504 and T3-512 (Implementation Guidelines) ballots. He also reported on the disposition of comments at the T3/S13 meeting held the previous week. Several typos and formatting issues were identified. In addition, six substantial editorial changes were identified, discussed, and resolved. These changes were reviewed.

- Change #1: Remove reference to adaptation type field values of the DSM-CC Download protocol that are not applicable to the specification.
- Change #2: Constrain values reexamined.
- Change #3: Restrict value of data_identifier field in PES header so it is consistent with associated protocol encapsulation values in DST (synchronized streaming).
- Change #4: Allow value of use field in DSM-CC Taps to be equal to UNKNOWN when protocol encapsulation is equal to zero.
- Change #5: Remove reference to DSM-CC DHCP Resource Descriptor.
- Change #6: Add non-underflow condition for synchronized data streams conveying access units spanning multiple PES packets.

It was **moved** by Mr. Crinon, on behalf of T3/S13, that T3 approve the aforementioned proposed changes. **Second** by Mr. Allison. On clarification, Mr. Allison proposed to amended the motion to recommend that T3 vote today. Mr. Justus clarified that T3 had already balloted these documents. If these revisions are accepted by T3, then the documents will be submitted to the full ATSC for ballot approval.

Mr. Crinon reported that all T3 members by one who have provided comments were present during the resolution of these comments and accepted same. Following a question from the Scientific Atlanta representative concerning change #5, removal of DHCP Resource Descriptor, it was noted that this is in use in the cable arena. Mr. Crinon clarified that T3/S13 is dealing solely with data broadcast services, and therefore, it is not included in this ATSC Standard; however, it is defined in the DSM-CC standard, and could be adopted as a cable practice. Mr. Allison noted that DHCP would not be identified in this standard, but its use would not be precluded.

T3 **voted without objection** to adopt these proposed changes and forward these documents as amended to ATSC for ballot approval. Mr. Crinon requested until June 2, 2000, to deliver a revised T3-504 to ATSC.

Mr. Adams noted that a process related comment was outstanding and would be addressed by another task group.

b) IP Multicast Activities

Mr. Crinon reported on meetings with SCTE representatives to harmonize the T3/S13 effort with DVS311. It was agreed that T3/S13 will integrate some of the DVS311 design in the T3/S13 Application Signaling framework. He further reported that IP address space and session management issues remain open. The objective is to produce a revised draft by June 30 for circulation to all T3/S13 members. Mr. Crinon reported that the document currently looks like a standard, and when the draft is a bit more final, T3/S13 will review the ATSC definitions of standard/RP to select a document designation.

Chairman Justus asked if T3/S13 consensus will be reached before August and Mr. Crinon agreed to pursue this objective.

Mr. Crinon reported that T3/S13 has not had an opportunity to review the list of future activities, but intends to do so during the June T3/S13 meeting.

Chairman Justus noted that Mr. Crinon, as the new T3/S13 chair, has expedited the development of this standard. T3 congratulated S13 members for handling comments in such an expedited fashion.

14) Discussion of Broadcast File System

Mr. Richer reported that, during the last T3 meeting, there was some confusion about where Broadcast File System work should be done. He reported that both T3/S16 and T3/S17 have identified the need for a Broadcast File Transfer System and that T3/S16 has requested a hierarchical system; an object carousel approach has also been identified. Many have noted that the expertise lies within T3/S13; however, Mr. Richer observed that this task may not be within their current scope of work. He suggested that T3 delegate this work to T3/S13, proposing T3/S13 scope modifications as needed; or to identify another existing specialist group; or to create a new specialist group. Discussion ensued.

Mr. Crinon offered that this is beyond the current T3/S13 scope; however, the technical expertise is within T3/S13. Chairman Justus clarified that T3/S13 is willing to accept this work item. Mr. Richer clarified that T3/S16 and T3/S17 should create appropriate requirements. Mr. Allison clarified that the carousel should be removed from T3/S16's work. Mr. Crinon clarified that the current T3/S13 role should be to list requirements, in conjunction with T3/S16 and T3/S17. Aninda DasGupta (Philips) clarified that while the need for a hierarchical file system exists, there is no requirement to use "object carousel." Mr. Richer reminded T3 that, when ATSC develops standards, other existing standards should be referenced or otherwise used.

Chairman Justus proposed that this issue be delegated to T3/S13, with the direction to propose scope modifications, as appropriate, for review by T3 before June 21, 2000. Furthermore, Chairman Justus suggested that T3/S13 solicit inputs on requirements from T3/S16 and T3/S17, and submit these requirements to T3/S13 for review, with submission to T3. Mr. Crinon, on behalf of T3/S13 agreed to accept this work item and that no other specialist group under T3 should undertake this work. In the event that T3 has not been authorized to develop such a standard, Chairman Justus and Mr. Richer agreed to secure ATSC EC approval.

Mr. Allison suggested that asking T3/S16 to provide requirements, as a group, would not clear the T3/S16 work plan, and suggested soliciting such requirements from the ATSC membership. Mr. Richer clarified that any interested party can submit requirements. It was agreed to send the existing T3/S16 pro and con papers (as they exist) to T3/S13 for consideration. Furthermore, Chairman Justus clarified that transmitting the existing papers to T3/S13 should not detract from the T3/S16 work.

16) Report of the Specialist Group on Satellite Broadcast (T3/S14-A)

Dipak Shah reported the T3/S14-A activities, including a review of previous work and development of a definition of satellite mux: "to combine, as a minimum, two or more ATSC compliant bitstreams to produce an extended ATSC bitstream at its output." Mr. Shah reported that the project description is completed, and a draft requirements and reference model are in progress. Furthermore, he reported that a fifth meeting is planned on June 13, 2000, to identify and then develop an evaluation approach for applicable standards. Mr. Shah indicated that T3 should not expect a draft in the near term; however, a call for contributions should be issued by August 2000, with a draft spec by March 2001. He encouraged participation by set top box, compression equipment, and head-end equipment manufacturers. He also reported that two semiconductor manufacturers are participating in the effort.

13) Report of the Specialist Group on DASE (T3/S17)

Aninda DasGupta reported that he has been on leave for two months, but that the API portion of the work is nearly completed. However, he noted, the presentation engine portion of the work has not progressed. He reported appointment of a new PE team chair, Glenn Adams, and noted that the completion of the standard is dependent on developing the PE and on the outcome of certain discussions concerning restructuring.

Mr. DasGupta indicated that he does not support T3/S17 restructuring, and suggested T3/S17 review these issues prior to presenting them to T3. Chairman Justus reported that there was a T3/S17 proposal in February to complete this work in June and asked if it would be possible to break this work into several elements within the same family of standards. Mr. DasGupta clarified that several W3C references remain to be finalized but that the work could be completed by June 30.

Mr. Richer offered a different view that the March 30 T3/S17 meeting minutes reported a consensus to develop separate documents, including a decision to separate the PE and API documents. Mr. DasGupta countered

that he had reserved the right to review the March 30 meeting minutes. Another member opined that T3/S17 had “punted” on the standards issue. Mr. Richer clarified that once meeting minutes are approved, that is the official meeting record. If T3/S17 wishes, at this time to revise its decision, that is another issue.

Mr. Diascorn clarified that Thomson favors separate documents. Petr Peterka recalled discussion of separating the documents, and there was discussion of “perhaps” issuing two separate standards, as he read a section of the minutes in question. Mr. DasGupta clarified that the goal is “separate” documents, and that the question of “separate” standards would be addressed at a later time.

Mr. Allison asked for clarification of the proposed output of T3/S17. Mr. DasGupta reported that requirements have been developed, and T3 has previously been invited to review the T3/S17 requirements documents.

Chairman Justus observed that it is unseemly for this issue to have escalated to the T3 level, without T3/S17 discussion, particularly in the T3/S17 Chair’s absence. Chairman Justus recommended that T3 not change direction at this time, since Mr. DasGupta has indicated that a document should be submitted for consideration in the near term. Chairman Justus recommended that T3/S17 hold its meeting on May 22, and encouraged T3/S17 to complete its work. Discussion ensued.

Scott Hamilton (News Corp.) observed that requirements documents were developed, and exist. The past weeks’ efforts to create new groups, indicated the structural difficulty in maintaining such a large resulting document, and splitting this document is supported for procedural purposes. Assignment to different Subgroups is not appropriate.

Mr. Griffis indicated that there is no consensus on the T3/S17 events/decisions, that restructuring T3/S17 may be considered further, and Mr. Richer’s effort to move T3/S17’s work forward is appropriate. Mr. Griffis noted he did not support the T3 Chair’s proposal to defer this discussion to after the next T3/S17 meeting.

Mr. Allison clarified that he is aware of the early set of requirements documents. He noted that he did not know whether the requirements map to the anticipated deliverables and that T3 has been offered the opportunity to review the requirements documents. Mr. Allison offered that dividing the problem into multiple releases may be appropriate, and he wished to clarify what T3 is to receive.

Ms. Aylsworth indicated that within the U.S., there does not appear to be a melding of standards, thoughts and ideas, as is perceived in Europe. She observed that T3/S17 issues may need input from T3; dividing the work into smaller chunks may be appropriate to move this work, and cooperation with European interests should also be considered.

Mr. Krauss indicated that T3/S17 should remain as a single group. Both PE and API are needed, and both should be in adopted at the same time.

Mr. Adams noted that a proposal has been made to split these documents and/or the group into separate activities. He noted one of the key architectural elements was the application reference model and that part of the T3/S13 effort is to define how DASE can be delivered with T3/S13 binding and other related efforts, and indicated that this work could be produced by late October. Secondly, he said, the PE work is likely to finish in early to late fall, noting parts of API could be delivered, but they are dependant on T3/S13 work. Concerning the submission of this T3/S17 item to T3, he said guidance was sought from the Chair concerning distribution of these materials to the T3 reflector, and objections were not received.

Mr. DasGupta stated that DASE is harmonizing with European initiatives, and DASE is at roughly the same level of development at this time. He reiterated that the PE work items can be completed in June, and that the T3/S13 work can be completed shortly.

Mr. Adams took exception to a number of statements made by Mr. DasGupta in his presentation of T3/S17 progress.

Mr. Adams made a presentation concerning DASE Specification Dependencies, and concerning T3 documents 515-519. He reiterated his goal of getting the DASE document produced quickly. Concurrently, he indicated his goal of having a DASE document that is implement-able. He stated that there was T3/S17 agreement to divide the document into parts—the four dependencies including: Reference Model, Procedural Apps, Declarative Apps, and Conformance.

Mr. Adams clarified that procedural Apps are being framed as Java based, and Declarative Apps are being framed as XHTML-based. The conformance document will specify profiles, levels, test models, and test bitstreams. Summary of his presentation slides included:

- DASE Application Reference model
- DASE The Problem
- Complex Problem Domain
- Insufficient/Moving Definition (Scope and Requirements)
- Monolithic Approach
- Variable Commitment

- Politically Charged Atmosphere

Several possible approach (“solutions”) were identified:

DASE: Solution #1 (Proposed)

- Declare Failure
- Adopt DVB MHP or
- Adopt ATVEF or
- Wait for de facto standard to appear

DASE: Solution #2: Decompose T3/S17 into three (or four)specialist groups:

- DASE Application Reference Model
- DASE Declarative Model
- DASE Procedural Applications Model
- Defer Conformance to future

DASE: Solution #3: Reinforce T3/S17 Structure

- Appoint two co-chairs and appoint two vice-chairs
- Ratify separation of T3/S17 technical work into multiple specifications
- Require T3/S17 to submit updated scope reinforcing decision to separate assigned work items

Mr. Adams offered that the Specialist Group Charter should include scope of work, deliverables, schedule, liaisons, and prospective termination date.

The OpenTV representative expressed dismay at the events in the T3/S17 Chair’s absence, during which a nearly completed work has returned to discussion of scope and requirements. He noted that OpenTV favors retaining API and PE under one umbrella and that this task should be returned to T3/S17.

Jon Courtney observed that the problem is complex, and that it is not dissimilar to DVB MHP. Breaking this work into separate documents makes sense, he said, but attempting to divide T3/S17 does not appear to address the issues at hand. Concerning changes in PE, it was observed that these have occurred in the last month.

Mr. Richer noted that concerning the March T3/S17 meeting, he requested that the applicable sections of those meeting minutes be appended to these T3 minutes. (Attachment 2.) Mr. Richer urged T3 to develop a clear program plan to complete the DASE work and that this plan should be established by the T3 Chair. He clarified that procedural issues should be raised to ATSC Executive Director, not attempting to address these issues via restructuring. The issue of separate standards is distinct from the issue of restructuring T3/S17, Mr. Richer noted, and he suggested that T3/S17 develop a work plan, and submit this work plan to the T3 Chair for approval, with an outstanding focus on completing this work. Mr. Richer offered that he does not support the idea of co-chairs for specialist groups.

Girish Chandra agreed with Mr. Richer’s statement, noting that the existence of a requirements document speaks well of T3/S17. A review of the requirements at this stage does not encourage speedy development of the standard, he noted.

Mr. DasGupta, speaking in his own behalf, made a presentation, observing that, in his absence there has been no progress, and the PE team has taken steps backwards. He said that T3/S17 gave the PE team specific work items, asked the PE team to work on those items, and not to redraft those items. Mr. DasGupta proposed returning to the status of the PE team of two months ago, and then, if the PE team requires T3/S17 guidance, then it should be sought. He proposed two five-day meetings of the PE team, noting that this worked for the API team.

Mr. Griffis noted sympathy for Mr. DasGupta’s situation and noted that a logjam was identified during the recent meeting in Briarcliff Manor. Mr. Griffis observed that this cannot be resolved in T3/S17, and therefore has been raised at the T3. He noted that Mike Dolan (DirecTV) has submitted documents to this effect to T3, and Mr. Griffis supported the Executive Director’s initiative in empowering the T3 Chair to act.

Mr. Dare noted that he is disturbed by the situation and observed that additional discussion is not likely to be particularly helpful. He recommended, if necessary, a special meeting of T3 where T3/S17 provides a roadmap for completion of T3/S17 work, including a review of where the DASE effort currently stands.

Mr. DasGupta asked Mr. Griffis to identify the logjam. As for T3 intervening, DasGupta recommended that T3/S17 complete its work without the distraction of submitting a roadmap. Ms. Aylsworth observed that the objective should be to move this work as quickly as possible noting that, with an emerging technology, it is necessary to have an iterative ability to accommodate the problems as they are identified. The documents are interdependent, and she challenged the group to break the work into manageable pieces where the interdependencies are not quite so monumental.

Mr. Allison observed that arguments for separate standards versus separate documents have been made, and noted that NAB favors a single document, identifying a single broadcast infrastructure. He asked whether enough work is intended to be delivered to meet the “barely sufficient” test, and whether there will be further revisions. He urged a clear threshold, and finally asked, if the work is close to completion, why are the new work items being raised now.

Chairman Justus recommended that the work be returned to T3/S17 for their Monday meeting, that T3/S17 is tasked with developing a program plan and schedule for deliverables and, further, that T3/S17 is tasked to report this to

the T3 Chair later that week.

Chairman Justus asked T3 to authorize the T3 chair to approve the plan, if deemed appropriate, or to implement other alternatives in consultation with the ATSC Executive Director. Mr. Krauss asked that the T3 Chair notify T3 of the T3 Chair's decision as quickly as possible. This was agreed.

Mr. Richer reported that, if the decision is to establish additional SG's, then T3 should grant the authority to the T3 Chair. Mr. Dare suggested that the T3 Chair should not assume this responsibility on behalf of T3. Mr. Richer suggested that the T3 Chair be authorized to call a special meeting of T3, should it be desired to form new specialist groups. This suggestion was accepted.

Mr. Richer reminded T3/S17 that its work should be conducted by consensus, and it was clarified that a minority opinion might be brought to T3. Tom Gurley noted that if this can be completed in 6-8 weeks, it should be done without splitting and creating separate standards.

Mr. DasGupta reported that harmonization with ATVEF is under consideration, and that there are minimal differences between DVB and DASE.

Mr. Richer re-iterated that only the Executive Director or T3 Chair can discuss the status of DASE. Those presenting DASE information at NIST have been authorized to provide information on work in progress.

Mr. Griffis asked about the status of the issue of reaching an agreement with Sun on IPR for the virtual machine. Mr. Richer reported that the delay has been on the ATSC side, which has been working with ATSC legal staff. He reported that ATSC is drafting a new MOU for Sun review, incorporating relevant input from ATSC members, and that this draft will be reviewed by ATSC members as well.

Mr. DasGupta reported that concerning a HAVI licensing agreement, there should not be major problems. HAVI wishes to await publication of the Sun IPR document.

15) Report of the Specialist Group on Interactive Services (T3/S16)

a) Status Report on Interactive Protocols Document

Mr. Chernock served as interim reporter for T3/S16 using the Michael Haley document distributed at the meeting. He noted that problems are reported, including editorial assistance, technical assistance, the file/directory structure, and reality check issues.

b) Anticipated Schedule for Completion

Mr. Chernock related that a draft standard is anticipated by September 2000. Mr. Allison reiterated the need for bitstream testing prior to publication of the standard, and warned of the risks associated with omissions in the standard, and observed parallel testing and standards development. Mr. Krauss asked if testing means use of prototype hardware and Mr. Allison clarified that it means proof-of-concept and verification that the standards work, and could involve either hardware or simulation. He also offered that ATSC does not have these procedures in general. Bill Wall echoed Mr. Allison's comments. Mr. Richer noted that a Task Group exists to address this issue as part of the ATSC process (in general); on this issue, if T3/S16 wants to include it in the program plan, and if T3 approves, then that is acceptable.

Mr. Justus agreed to take as an action item conveying the need for T3/S16 to consider testing at its earliest convenience.

18) Other Business

There was none (items 7 and 8 had already been discussed).

19) Schedule of Next T3 Meetings

Upcoming T3 meetings include August 16 and November 15, 2000.

During the August 16 meeting, Allison/Richer/Justus will develop a schedule for 2001 meetings; this group welcomes T3 input, particularly on planned 2001 meetings of other groups to avoid conflicts.

Concerning the current four meetings per year schedule of T3, Mr. Richer suggested that T3 may wish to assume a more active role managing SG work (either via meetings or reflector). Mr. Allison suggested 6 meetings per year. Mr. Lechner suggested that between T3 meetings, the T3 Chair teleconference with the SG chairs. Mr. Adams suggested that: 1) ATSC develop a T3 document repository; and 2) Review SG scopes at a specified interval. Mr. Richer offered a suggestion of possibly splitting T3 into various technology-centric groups. Mr. Justus agreed to take this input under advisement.

20) Adjournment

The meeting was adjourned at 4:30pm EDT.

Respectfully submitted,

Ralph Justus, Chair, T3

Attachment 1

Technology Group on Distribution (T3) Meeting

Attendance List May 17, 2000

ABC	Randy Hoffner
ATSC	Mark Richer
ATTC	Walter Husak
Canal+*	Philippe Perrot
CBS	Ren McMann
CDTV	Lou Montana
CEA	Ralph Justus, Jean Johnson
CRC	Yiyang Wu
DirecTV	Dipak Shah
Dolby*	Craig Todd
Eastman-Kodak	Art Cosgrove
Echostar	William Beals
Faroudja Labs	Carlos Kennedy
Gemstar	Glenn Adams
Harmonic	Adam Goldberg, Matt Goldman
Harris	Graham Jones
Hewlett-Packard	Lee Raguz
Hitachi*	Larry Pearlstein
Hubbard Broadcasting*	Joe Ducey
IBM	Rich Chernock
Intel	Regis Crinon
Microsoft	Pat Griffis
Mitsubishi	James Fang
Motorola	Sam Narasimhan, Petr Peterka, Jeff Krauss
MSTV	Tom Gurley
NAB	Art Allison
News Corp.	Scott Hamilton
Nippon TV Network	Joji Urano
OpenTV*	Taylor Kidd
Panasonic Broadcast	Fred Van Roessel
PAVCAL*	Joe Rodolico
Philips	Aninda DasGupta
Sanyo	David Elliot
Sarnoff*	Michael Isnardi
SBE	Andy Butler
Scientific Atlanta	Bill Wall
Sharp	Paul Martinez
Skystream	John Mick
SMPTE	William Miller
Sony	Peter Dare
Sun	John Courtney
T3/S8 Chair	Bernie Lechner
Texas Instruments	Adam Kunzman
Thomcast	Brett Jenkins, Jack McKain
Thomson	Jean-Louis Diascorn
Tieman	Girish Chandran
Toshiba	Marc Mueller
Tribune*	Merrill Weiss

Triveni Digital*
Warner Bros.
Wavetek, Wandel, Golterman
Zenith
Zenus

Satish Thatte, Gomer Thomas
Wendy Aylsworth
Ken Garber
Wayne Bretl
Jae-Soo Yoon

* Denotes participation via telephone

Attachment 2

Excerpts from T3/S17 Meeting Minutes of March 6, 2000

Glenn Adams suggested a different arrangement for the documents:

Normative set:

- 1. General application framework/environment (bindings, state model, behavior, architecture, etc.)
- 2. AEE
- 3. PE
- 4. Conformance statement
- 5. Conformance test specs

Informative set:

- 6. Implementation Guide(s)
- 7. Conformance Test Guidelines

Background for T3 only:

- 8. Requirements & Open Issues

Consensus was then reached on the logical breakdown of documents as Glenn suggested (listed immediately above).

Consensus was then reached on sending Parts #1, 2 and 3 of Glenn's list above to T3 as separate documents for separate ballots.

Break

Consensus was then reached on treating these Parts #1, 2, 3 as separate ATSC standards, but named in such a way (exact nomenclature TBD) that expresses their familial relationship (e.g. A/99 – DASE Architecture; A/100 – DASE AEE; A/101 – DASE PE).
