
APPROVED Minutes
Advanced Television Systems Committee, Inc.
Board of Directors Meeting
NBC, 30 Rockefeller Center, New York, NY
March 7, 2002

1. Call to Order; Determination of Quorum; Approval of Agenda

Chairman Phil Livingston called the meeting to order at 10:07 AM at NBC in New York City.

It was determined that a quorum was present, and the agenda (**Attachment 1**) was approved without modifications.

2. Chairman's Comments

Mr. Livingston apologized for his tardy arrival due to traffic.

3. Consideration of Draft Minutes of January 30, 2002 Meeting

The minutes of the January 30, 2002 (**Attachment 2**) meeting were approved without modification upon a motion by Wendell Bailey.

4. Report of the President

a) Membership Report

Mr. Richer presented the membership report (**Attachment 3**). Some discussion ensued regarding the treatment of the unusual case of ARTEAR. It was concluded that it would behoove the ATSC to try to work out an arrangement by which ARTEAR could participate and maintain its 'member' status although the current financial situation in Argentina makes it impossible for them to pay their membership dues at present.

b) Status of Letter Ballots

Mr. Richer reported the status of letter ballots (**Attachment 4**).

c) Financial Report

Mr. Richer gave the financial reports for 2001 (**Attachment 5**), and for January 1 – February 28, 2002. (**Attachment 6**)

d) MOU with the ATSC Forum

Mr. Richer reported that the Memorandum of Understanding with the ATSC Forum has been signed by both parties. Mr. Livingston reported that he has received a letter from ATSC Forum Chairman Robert Graves thanking the Board for the additional \$8,000 granted to the Forum.

e) DTV Store at NAB2002

Mr. Richer reported on the DTV Store exhibit sponsored by ATSC, CEA, and NAB at the NAB convention in April 2002. Mr. Richer said that plans for the exhibit are moving forward. He said that CEA and ATSC members had been invited to become sponsors of the DTV Store for a financial contribution of \$3,000. ATSC Forum, Digital Stream Technologies, Dolby, LG, Mitsubishi, Panasonic, Philips, Samsung, Sharp, Sony, Thomson, and Zenith have committed to sponsor the exhibit. More sponsors would be welcome, and they need not be manufacturers.

f) Other

Mr. Richer reported that the ATSC standards seminar held in St. Louis, MO in February was very successful in spite of the initial low registration. There were approximately 60 attendees, 40 of which were paying registrants. Mr. Richer thanked the sponsors Decisionmark, Tandberg, Thales, and Thomcast, and mentioned that the seminars indeed offered valuable sponsorship opportunities. He further

mentioned that the seminar had shown a profit, and that he is considering future events, possibly in Toronto, Mexico, or on the west coast.

Mr. Richer commented that the NABA Annual Meeting in Mexico City February 24-26, had proved to be a worthwhile and enjoyable event that facilitated extensive networking and at which he heard many positive things regarding the ATSC standard. In particular he mentioned Peter Smith of NBC's impassioned speech about their experience with the Olympics in HDTV.

Mr. Richer requested that anyone interested in attending an ATSC/ARIB liaison meeting during NAB2002 contact him so arrangements could be made.

In response to a question regarding the ATSC Forum giving the ATSC Board a status report of Forum activities, Mr. Richer reported that the Forum is scheduled to provide a written status report in April, but that in the future such a report will be a regular agenda item.

5. Report of Budget and Finance Committee

Lynn Claudy announced that there was no Budget and Finance Committee report, as they had not been active since the last Board meeting.

6. Nominating Committee

Jay Adrick reported that the Nominating Committee planned to meet soon, and that he and Mark Richer have discussed the issues that the Committee would need to address.

7. Formation of Membership Committee

Mark Richer led a brief discussion regarding the formation of a Membership Committee, which had been a goal from the previous Board meeting. Jay Adrick agreed to chair the group, which will focus on ways in which the ATSC can better serve its members. Wendell Bailey, Joe Flaherty and Bob Plummer expressed interest in participating in the group. Bill Check indicated that he would consider participation.

8. Interoperability Ad Hoc Report

Bernie Lechner, reporting for Craig Tanner, said the latest report (**Attachment 7**) now lies in the Board's hands and the ad hoc group considers its task completed. NCTA pointed out that the initial comments provided to the Board by the Ad Hoc Group on Interoperability did not reflect the comments of NCTA, which are provided here today (**Attachment 8**). Mr. Check gave the background of NCTA's position on the ad hoc's report and said NCTA members had agreed to consider and comment on the report and that these comments were given much serious thought in the interest of providing a substantial response. Mr. Check indicated that the comments provided by NCTA have the total support of the entire cable industry and NCTA believes they are necessary to the final document as without them the document lacks balance. Mr. Check suggested attaching cable's comments to the report and using the report as an informational document within the board, but take no further action. The remainder of the Board generally agreed that it is better to have one cohesive document instead of an attached minority report. It was suggested that the ad hoc work to integrate the comments. Mr. Phil Livingston summed up the discussion in three points: that a common document with technical errors, pejorative statements, and any misinformation corrected is preferable; that the combining of the two documents needs to be done; that cable participation is required. Mr. Check expressed concern that such document will become an advocacy piece for divergent groups within ATSC but agreed to poll NCTA members to gauge interest in participating in this work. Mr. Bailey moved that before the document is disseminated outside of the ATSC it require unanimous consensus approval of the Board. This motion is seconded and approved. Mr. Hankinson was given the action item of relaying the outcome of this discussion to ad hoc chair Craig Tanner.

9. Promoting the Proper Use of ATSC Standards

Mark Richer offered his thought that a lamentable job has been done promoting the implementation and proper use of PSIP. He pointed out that the T3's approval of the DASE standard is expected within a few months and it will then progress to ATSC for ballot, but that approval alone is not enough. A standard needs promotion, encouragement, support and marketing. Mr. Richer appealed to the Board to discover

ways by which this can be done effectively. It was agreed that a stronger show of support for the standards by Board and members reflecting all industry parts would be most helpful in all arenas, including international circles. Mr. Richer encouraged the Board to make supportive official statements regarding the ATSC standards to ensure that the standards receive proper recognition.

10. FCC Home Land Security Activities

There was brief discussion regarding the use of DTV channels in the event of an emergency. It was generally agreed that the industry should propose a solution before one is imposed by legislation, and that ATSC should meet with the FCC to discuss this. To this end, Mr. Bailey moved that ATSC President Mark Richer meet with the appropriate FCC personnel and find out what the ATSC should be doing. Motion was seconded and approved.

11. Annual Meeting

Mr. Richer presented a draft agenda for the Annual Meeting stating that it is open for comment, and that none of the speakers had yet been confirmed. Discussion ensued regarding the theme and focus of this event, and the balance the ATSC wished to strike between ATSC concerns and general industry interests. It was suggested that cable and software representatives be added to some of the panels, and that a DASE demo would be very worthwhile. It was agreed that a positive event is to be desired, and therefore some focus should be directed to what is going right in the transition. To this end it was thought that a mid to small market broadcaster who has made the transition may be able to come and talk about the experience. Mr. Richer also described the sponsorship opportunities for the Annual Meeting and said he hoped several members of the Board would be among the sponsors. Two action items for the Board resulted from this discussion, for the appropriate Board members to recruit those speakers listed on the agenda and for all Board members to consider sponsoring the meeting.

12. T3 Report

Ralph Justus gave a report on the activities of T3 (**Attachment 9**).

Mr. Richer reported that Regis Crinon (Intel) has had to resign as chairman of T3/S13, and he commended T3 on the Resolution it had made on Regis' behalf at the February 13, 2002 T3 meeting. Warm regards and grateful thanks were voiced for Regis and his considerable contributions to the work of ATSC. Mark Richer briefly described the process by which the Final Report of the ATSC T3/S8 Ad Hoc Group on Code Point Issues would become a Technology Group Report or an Engineering Guide. T3 recommends this document become a Technology Group Report; upon the Board's approval of this recommendation no further action will be necessary. Ralph Justus moved that the Board accept T3's recommendation. The motion is unanimously approved. Bernie Lechner said that the next step is to establish a code point registry, and that he and Jerry Whitaker are already at work on a less ATSC-centric assignment of code points. Mr. Lechner also informed the Board that it has been agreed that ATSC will be the voluntary repository of the database of code point numbers. Mr. Richer indicated that he has been in communication regarding this issue with Steven Oksala of SCTE.

13. IS Report

Art Allison gave a report on the activities of IS (**Attachment 10**). He reported that the IS-PSIP Working Group is experiencing involvement by segments of the industry that are not usual to the IS, such as traffic, automation and control system people, and that while this is overall a positive thing, it tends to lessen the pace of the work as the newcomers get up to speed.

14. AS Report

Mark Richer pointed out that the Applications Subcommittee would benefit from more participants and more enthusiasm, and that it is important to the ATSC and to the industry.

15. Other Business

Mark Richer announced that the ATSC, CEA and NCAM would sponsor another Caption Summit the following week in response to manufacturers desire to learn more about captioning. Mr. Richer espoused his belief that these summits are an excellent way to familiarize oneself with captioning issues. He

pointed out that all products manufactured after July 1, 2002 must be caption capable. He also mentioned that captioning demos are being planned for the DTV Store at NAB02 and at the Annual Meeting.

The issue of renaming the technical groups to make their names more descriptive was raised. It was generally agreed that this is a good idea. Mr. Richer said that at present it is not necessary to change the bylaws to effect this change, but it will be included when more substantial revisions need to be made to the bylaws.

Lynn Claudy announced that Bernie Lechner would receive the NAB Engineering Achievement Award at the NAB2002Technology Luncheon. Mr. Richer mentioned that the nominee for the Annual ATSC Bernard Lechner Award for Outstanding Contributions would soon be forwarded to the Board for consideration.

Bernie Lechner mentioned the completion of EIA/CEA standard 909 that is concerned with the R4 interface between DTV and antenna to pick up the best conditions for the antenna on a particular channel and store them in a memory. He also reported on a new standard on loudness matching changes between digital and analog channels (CEB 11).

For the next agenda it was suggested that the ATSC's organizational goals be reviewed, and that the changing of the name of T3 be addressed.

16. Schedule of Future Board of Director Meetings

Following is the schedule for ATSC Board of Directors meetings in 2002:

May 14 (PM only) in DC; June 27 in Chicago; Aug. 15 in DC; Oct. 22 (PM only) in LA; Dec. 18 in DC.

17. Adjournment

The meeting was adjourned at 2:00 PM upon a motion by Victor Tawil.

Attachments

Attachment 1: Attendance list
Attachment 2: Draft agenda
Attachment 3: Membership report
Attachment 4: Ballot status
Attachment 5: 2001 Financial report
Attachment 6: 2002 Financial report
Attachment 7: Interoperability ad hoc report
Attachment 8: NCTA comments re: Interoperability ad hoc report
Attachment 9: T3 report
Attachment 10: IS report

**ATSC Board of Directors Meeting
Attendance List
March 7, 2002**

Board Members Present

Jay Adrick, Harris*
Wendell Bailey, NBC
Ed Caleca, PBS*
Bill Check, NCTA
Lynn Claudy, NAB
Joseph Flaherty, CBS
Tom Hankinson, ABC
Ralph Justus, CEA
Wayne Luplow, Zenith
Michael McEwen, CDTV*
Sam Narasimhan, Motorola
Robert Plummer, DirecTV
Glenn Reitmeier, IEEE
Brian Smith, Philips
Victor Tawil, MSTV

Board Members Absent

Ira Goldstone, Tribune
Peter Symes, SMPTE

ATSC Members and Guests

ATSC Chairman	Phil Livingston (Panasonic)
ATSC President	Mark Richer
ATSC Treasurer	Tara Healy
ATSC Secretary	Christy Kehlbeck*
ATSC IS Chairman	Art Allison*
ATSC T3/S8 Chair	Bernard Lechner
Microsoft	Pat Griffis
Motorola	Ray Bontempi
NCTA	Andy Scott
Samsung	C.B. Patel
Sony	Ed Barret
Tribune	Andy Bater
Triveni Digital	Gomer Thomas

Draft Agenda
Advanced Television Systems Committee, Inc.
Board of Directors
NBC, 30 Rockefeller Plaza, New York, NY
March 7, 2002 from 10:00 AM to 3:30 PM

1. Call to Order; Determination of Quorum; Approval of Agenda
2. Opening Comments (P. Livingston)
3. Consideration of Draft Minutes of January 30, 2002 Meeting
4. Report of the President (M. Richer)
 - a. Membership Report
 - b. Status of Letter Ballots
 - c. Financial Report
 - d. MOU with the ATSC Forum
 - e. DTV Store
 - f. Other
5. Budget & Finance Committee (L. Claudy)
6. Nominating Committee (J. Adrick)
7. Formation of Membership Committee
8. Interoperability Ad-Hoc Report
9. Promoting the Proper Use of ATSC Standards
10. FCC Home Land Security Activities (M. Richer)
11. Annual Meeting (M. Richer)
12. T3 Report (R. Justus)
13. IS Report (A. Allison)
14. AS Report (E. Caleca / I. Goldstone)
15. Other Business
16. Schedule of Future Board Meetings
May 14 (PM); June 27 in Chicago; Aug. 15; Oct. 22 (PM); Dec. 18.
17. Adjournment

ATSC Membership Report
March 7, 2002

New Member:

WOW DTV utilizes the broadcast 8VSB signal to transmit interactive information to the home.

Resignations:

Aastra

Acterna

Adherent became Tektronix Cambridge, division of Tektronix

BarcoNet acquired Scientific Atlanta

Continental absorbed by Axcera

Hubbard

MetaTV

Mindport

NTVIC

Total Members:

January 31, 2002 162

March 7, 2002 154

Letter Ballot Status

Letter Ballot Description	Vote	Comments
ATSC Ballots:		
IP Multicast Sessions over A/90	12 yes, 0 no, 1 abs, 144 nv	closed January 31, 2002
Editorial Privilege	11 yes, 1 no, 1 abs, 144 nv	
Data Broadcast A/90 Amendment 1		Closes April 1, 2002
Data Broadcast A/90 Corrigendum 1		Closes April 1, 2002
Data Broadcast A/90 Corrigendum 2		Closes April 1, 2002
Synchronized/Asynchronous Trigger Standard		Closes April 1, 2002
T3 Ballots:		
PSIP Guidelines - Recommended Practice	19 yes, 0 no, 1 abs, 19 nv	closed January 31, 2002
Editorial Privilege	18 yes, 1 no, 1 abs, 19 nv	
(Informational Doc) Code Point Issues Report	16 yes, 0 no, 1 abs, 21 nv	closed February 7, 2002
Editorial Privilege	16 yes, 0 no, 1 abs, 21 nv	
DTV Standard A/53B Amendment 1	18 yes, 0 no, 1 abs, 20 nv	closed February 7, 2002
Editorial Privilege	17 yes, 1 no, 1 abs, 20 nv	
ARM (reballot)		balloting soon
PSIP A/65A Amendment 2		balloting soon

Advanced Television Systems Committee
2001 Financial Report
3/7/2002

	Approved 2001 Budget	Jan 1 - Dec 31 Actual
Dues	\$1,150,040	\$1,150,991
Interest	26,400	22,855
Seminar income		5,438
Sales of ATSC Standard	0.00	400
TOTAL INCOME	\$1,176,440	\$1,179,684
Salaries	\$681,920	\$681,842
Taxes & Benefits	173,920	172,008
Travel & In-Town Expenses	59,500	49,521
TOTAL PERSONNEL & TRAVEL	\$915,340	\$903,371
Professional Fees	\$38,180	\$94,245
Leasing Expenses	50,150	45,746
Office Expenses	50,540	33,067
Business Taxes & Insurance	11,850	7,318
Meeting Expenses	15,000	29,046
Fixed & Non-Fixed Assets	8,500	1,168
Miscellaneous (includes ATTC)	76,550	81,433
TOTAL OTHER EXPENSE	\$250,770	\$292,023
CONTINGENCY	\$6,000	
GRAND TOTAL EXPENSES	\$1,172,110	\$1,195,394
ESTIMATED NET INCOME	\$4,330	(\$15,710)
Cash Balance on December 31, 2001	\$602,722	

ATSC, Inc.
2002 Financial Report as of 2-28-02

	2002 Budget	Jan 1 - Feb 28 Actual
REVENUE		
Membership Dues	\$ 925,000	\$ 705,289
Seminar Revenue	\$ 64,800	\$ 33,000
Interest Income	\$ 22,000	\$ 754
Meeting Sponsorships	\$ 3,000	\$ -
TOTAL REVENUE	<u>\$ 1,014,800</u>	<u>\$ 739,043</u>
EXPENSE		
Program Services:		
Seminars	\$ 60,420	\$ 237
ATTC Dues	\$ 50,000	\$ 50,000
Seed Funding for "ATSC Forum"	\$ 100,000	\$ 50,000
Total Program Services:	<u>\$ 210,420</u>	<u>\$ 100,237</u>
Management & General:		
Salaries & Benefits	\$ 622,766	\$ 105,806
Professional Fees	\$ 36,960	\$ 150
Travel & Business	\$ 48,950	\$ 4,739
Rent	\$ 47,765	\$ 7,556
Telephone & Internet	\$ 27,502	\$ 2,880
Duplication & Printing	\$ 14,200	\$ 2,032
Office Supplies & Equipment	\$ 12,600	\$ 262
Insurance	\$ 13,125	\$ -
Postage & Shipping	\$ 3,600	\$ 169
Newsletter	\$ 26,800	\$ -
Meetings	\$ 19,100	\$ -
Other	\$ 5,400	\$ 2,112
Total Management & General:	<u>\$ 878,768</u>	<u>\$ 125,706</u>
GRAND TOTAL EXPENSES	<u><u>\$ 1,089,188</u></u>	<u>\$ 225,943</u>
ESTIMATED NET INCOME	<u><u>(\$74,388)</u></u>	

DRAFT

DIGITAL CABLE INTEROPERABILITY

I. Introduction

Digital cable interoperability means that content providers, including terrestrial broadcasters, can deliver digital television programming to consumer-owned digital television receivers over cable television distribution plants. The availability of retail-market cable-ready digital television receivers is an important element in achieving digital cable interoperability that has been and still is highly desired by most of the major stake holders – including consumers, cable television operators, broadcasters, content providers and consumer electronics manufacturers. The consumer expects the same convenience that exists today with analog cable-ready television receivers, where a cable-ready television receiver can be purchased off-the-shelf at retail and be connected directly to the cable television system to receive a basic service package, and perhaps some premium services, without requiring a separate set-top box supplied by the cable operator. The cable operator seeks to minimize capital expenses and operational burdens required by having to stock, deliver and manage digital set-top boxes. The cable operator would like to be able to establish, at the lowest possible cost, a subscriber relationship with a basic tier of services, which can be easily upgraded to premium services. Broadcasters and content providers want assurance that their digital program offerings are universally available in cable television homes and consumer electronics manufacturers want to be able to offer a wide variety of cable-ready digital television products having features that are differentiable in the marketplace.

Cable operators and the consumer electronics industry have indeed taken an important step towards achieving these objectives by establishing the CEA/NCTA Technical and PSIP Agreements of February 21, 2000 that recommended a technical solution for cable operators and consumer electronics manufacturers. The Agreements¹ specified that cable operators carry basic programming services in-the-clear, that cable-ready digital television receivers be able to receive, navigate and tune to such basic services, and that cable-ready digital television receivers also be equipped with a standardized POD (Point-Of-Deployment) module interface that can accept a POD module supplied by the cable operator to allow descrambling of premium subscription services. In December 1999, prior to the CEA/NCTA Agreements, CEA adopted EIA/CEA-818, Part II of which is a standard for a cable-ready digital television receiver that will support the services defined in the CEA/NCTA Agreements. Subsequent to the filing of the Agreements with the FCC on February 21, 2000, the FCC adopted a Report and Order that defines three types of cable-ready digital television receivers. The Type 1 cable-ready digital receiver supports the basic and premium services defined in the CEA/NCTA Agreements.

The ATSC strongly supports the spirit and approach of the CEA/NCTA Agreements and the related ATSC, CEA and SCTE standards and urges that all industry

¹ These Agreements, filed with the FCC on February 21, 2000, were the result of intense negotiations between CEA and NCTA.

segments work together to implement both the spirit and the detail of the Agreements as rapidly as possible.

This document provides an overview of the standards, agreements and rules that relate to digital cable interoperability. The need to update the February 2000 Agreements is addressed. A number of implementation issues are enumerated, and because of their importance in enabling consumer electronics manufacturers to design, build and successfully market a Type 1 cable-ready digital television receiver, this document also lists several non-technical issues that must be resolved. This document does not address the important problem of ensuring interoperability between terrestrial broadcast digital television signals and the existing proprietary digital set-top boxes currently deployed in cable systems, nor does it address issues relating to must-carry or retransmission consent.

II. Standards, Agreements, Specifications and Rules

There are a large number of standards, agreements, specifications, and FCC rules that relate to the interoperability of consumer electronics products with cable television systems. The relevant documents are listed in the attached tables I through VI as follows:

- Table I ATSC Standards
- Table II CEA Standards
- Table III SCTE Standards
- Table IV CEA/NCTA Agreements
- Table V OpenCable Specifications
- Table VI FCC Rules

By and large, the published ATSC, CEA and SCTE standards listed in Tables I, II and III and referenced in the CEA/NCTA Agreements provide a consistent set of standards that will enable a Type 1 cable-ready digital television receiver to be connected directly to a receiver-ready digital cable television system to provide basic analog programming and both basic and premium digital programming to the viewer.

The key standards in the ensemble are the Network Interface Standard, SCTE DVS/313r5² and the Host-POD Interface Standard, SCTE DVS/295r5. These standards reference many other ATSC, CEA and SCTE standards, some of which also reference these standards. The CEA/NCTA Agreements also reference many ATSC, CEA and SCTE standards, but they do not reference DVS/313r5 and DVS/295r5 since neither standard existed in February 2000. As a consequence there are some inconsistencies between the Agreements and the standards. An update to the Technical Agreement is required to make it consistent with DVS/313r5 and DVS/295r5; the PSIP Agreement should also be revised to clarify its meaning in certain respects. These needs are discussed further in Section IV below.

²Many of the standards developed by the SCTE Digital Video Subcommittee have recently been given new numbers by SCTE. Thus what was DVS/313r5 is now SCTE 40, etc. The old numbers are used in this document. Table III includes a cross-reference between the old numbers and the new numbers.

III. Brief History of the Development of the Network Interface and Host-POD Interface Standards

A. Network Interface Standard

1. EIA/CEA-818 Part I, approved in December 1999 was the initial document.
2. The CEA/NCTA Technical Agreement filed in February 2000 was the second document.
3. DVS/313r5 approved in April 2001 is the final document.

B. Host-POD Interface Standard

1. DVS/131r7 approved in January 1999 was the initial document.
2. DVS/295 introduced in January 2000 was the second document.
3. DVS/295r5 approved in November 2001 is the final document.

IV. Need to Update the Technical and PSIP Agreements

The Technical Agreement predates the adoption by SCTE of the Network Interface Standard, DVS/313r5, by over one year and, as a result, there are a number of differences between the documents. No industry participant has asserted that DVS/313r5 fails to provide a technical structure that will enable digital terrestrial broadcast signals to be delivered over cable. Therefore the Technical Agreement should be updated to match it.

The PSIP Agreement, "Carriage of PSIP over Cable Plants", describes requirements, implementation scenarios and an implementation plan for the carriage of PSIP data over cable television plants. Certain aspects of the Agreement require clarification, either by modification or replacement of the document. Two specific issues are:

- The Agreement does not explicitly address Virtual Channel data and EPG data as separate entities. The Agreement clearly states that "(t)hese requirements are aimed at the *carriage* of PSIP through the distribution chain and not its creation." The intent of this qualification, as understood by those participating in the drafting of the Agreement, was that it applied only to EPG data, and that, obviously, in-band Virtual Channel data would, in some instances, have to be created by the cable operator. In fact, the PSIP Agreement states elsewhere that "if a digital Transport Stream (TS) includes one or more services carried in-the-clear, that TS shall include virtual channel data in-band in the form of ATSC A/65". Otherwise, it would not be possible to navigate in-the-clear programs without a POD module in place. Nevertheless, some in the cable community have said that they believe that it is not necessary to provide in-band Virtual Channel data unless the content provider supplies it. The PSIP Agreement should make it absolutely clear that Virtual Channel data must always be present in-band on all

Transport Streams that carry programs in-the-clear, whether or not any EPG data is available from the content provider.

- The second need for clarification in the PSIP Agreement relates to carriage of event information (EPG) data. The Agreement states that "(w)hen sent out-of-band, event information data shall conform to SCTE DVS/234r1 (profiles 4 or higher)." It is not clear whether this requirement is intended to apply to all event information data, regardless of its source, or only to event information data that is supplied by the content provider. Again the PSIP Agreement needs to make it clear that this requirement applies to all event information data, regardless of its source.

V. Implementation Issues

This Section discusses a number of technical and operational issues that relate to the implementation of the CEA/NCTA Agreements to enable support of Type 1 cable-ready digital television receivers. None of these issues is a show-stopper; the necessary standards are in place. Cable operators will, in some cases however, need to obtain the necessary hardware and software to implement the Agreements.

A. Interoperability Testing (Plugfests)

Although the Network Interface and Host-POD Interface Standards, DVS/313r5 and DVS/295r5, are completed, they have not been fully tested. There is a strong need to conduct interoperability tests (frequently called plugfests) that will fully exercise these important interface standards. CableLabs has conducted limited tests of these standards as part of the OpenCable program, but full testing of all supported functions has not been done.

B. Need to Simulcast System Information

Current digital set-top boxes do not support the POD-Host Interface and many aspects of the operation of the current digital set-top boxes, particularly the navigation functions, require proprietary System Information that is different from, and incompatible with, that specified in the CEA/NCTA Agreements and defined in the appropriate ATSC, CEA and SCTE standards. Consequently there is a severe chicken-and-egg problem. There are no cable television systems that will currently support a Type 1 cable-ready digital television receiver built to the EIA/CEA-818-C Part II standard, and until there is certainty that there will be such cable television systems, there will be no Type 1 cable-ready digital television receivers. Compliance with the ATSC, CEA and SCTE standards that will support Type 1 cable-ready digital television receivers while continuing to support the millions of proprietary set-top boxes that are in place will require that certain System Information be simulcast for as long as the proprietary set-top boxes are in use. The required extra bandwidth is small and should not be a burden to cable operators.

C. Re-Multiplexing

Since the modulation method and data rate on cable differ from the ATSC 8-VSB standard, cable headends will, in general, have to demodulate and re-modulate terrestrial broadcast signals picked up off-air. It may also be necessary to re-multiplex the broadcast signal. Different scenarios may apply if the broadcaster delivers the signal directly to the cable headend. In any event, it is likely that two broadcast signals will be combined into a single 38-Mbs Transport Stream for delivery using 256-QAM. The re-multiplexing will require rebuilding the PSIP information, MGT, VCT, EIT's etc. Also, the out-of-band Service Information required to construct the System Information defined in DVS/234r1 as well as the System Information required to support existing legacy set-top boxes must be provided to the out-of-band data transmission system. In most cases it will be necessary to derive some of this information from the terrestrial broadcast PSIP.

D. In-Band PSIP

The CEA/NCTA Agreements require that PSIP in accordance with ATSC A/65A be present on all Transport Streams that carry programs in-the-clear. Depending on the source of the programs to be carried on a Transport Stream, the PSIP information, both the Virtual Channel Table and the EIT's, is likely to have to be rebuilt at the cable system headend.

E. In-Band PSI

The CEA/NCTA Technical Agreement, EIA/CEA-818-C and DVS/313r5 all require that the caption service and content advisory descriptors be present in the PMT. ATSC A/65A requires them to be present in the PMT for cable transmission, but their presence in the PMT is optional for terrestrial broadcast. If broadcasters do not include the descriptors in the PMT, it will be necessary to insert them at the cable headend. There is a need to ensure that packet replacement and timing are done correctly.

F. Out-of-Band System Information.

The CEA/NCTA Technical Agreement, EIA/CEA-818-C Part I, DVS/313r5 and the PSIP Agreement all require out-of-band System Information as defined in DVS/234r1. The CEA/NCTA PSIP Agreement explicitly requires profile 4 or above for event information data. Profiles 4-6 require AEIT data. In the case where the data for the AEIT's is derived from the PSIP information contained in a terrestrial broadcast signal, it will be necessary to convert the EIT data to AEIT format.

G. Channel Numbering

Terrestrial broadcast uses a two-part channel number, whereas cable systems use a single-part number. The SCTE standards provide the ability for cable to label a

channel with either a single-part or a two-part number either with in-band PSIP or with out-of-band System Information. Terrestrial broadcasters believe that they have the right to maintain the two-part number both in-band and out-of-band and cable system operators believe that they have the right to relabel a broadcast program with a single-part number both in-band and out-of-band. Receiver manufacturers believe that the in-band and out-of-band labels, whether two-part or single-part, should be the same to avoid consumer confusion. This is not a technical issue since the standards will support all possibilities.

H. Use of 8-VSB Modulation

EIA/CEA-818-C Part I explicitly specifies parameters for 8-VSB and 16-VSB. DVS/313r5 and the Technical Agreement do not specify parameters for 8-VSB and 16-VSB. The FCC has acknowledged the use of 8-VSB on cable. Although the documents are not consistent, this is not a technical issue. The cable television industry has said that it does not intend to use 8-VSB or 16-VSB beyond some current temporary situations that are being phased out. The broadcasters and some television receiver manufacturers feel strongly that 8-VSB and/or 16-VSB should not only be allowed on cable, but also encouraged. Since EIA/CEA-818-C Part II requires Type 1 cable-ready receivers to accept 8-VSB signals, there is no operational problem.

VI. Non-Technical Issues

Non-technical issues are a larger obstacle to achieving digital cable interoperability than the need to update the CEA/NCTA Agreements and the Implementation Issues discussed in Sections IV and V above. The non-technical issues listed in this Section are issues that are of great concern to terrestrial broadcasters and consumer electronics manufacturers and are presented from the perspective of those industries. Since the cable television industry declined to participate in the drafting of this white paper, we have been unable to include the non-technical issues that may be of great concern to the cable industry.

A. Receiver Requirements

The EIA/CEA-818-C Standard and the OpenCable OC-SP-HOST-CFR-107-011228 Specification both define requirements for cable-ready television receivers. EIA/CEA-818-C Part II addresses an FCC Type 1 receiver, whereas the OpenCable specification addresses an FCC Type 2 receiver by including the 1394 interface as a mandatory requirement. Also, the OpenCable specification treats the support of the navigation function in the receiver differently. There are many other differences.

B. Compliance by Cable Systems with SCTE Interface Standards

Since the SCTE Interface Standards are voluntary standards, there is no assurance that cable system operators will comply with them. In fact, although many current systems largely comply with the Network Interface standard, there are no digital set-top boxes in use that support the POD-Host Interface. Also the current set-top boxes use proprietary System Information.

C. Availability of In-Band EPG Data

Cable system operators have said that they will not generate in-band EPG data in the form of PSIP EIT's, but that they will carry it if the content provider supplies it. There is significant interest on the part of terrestrial broadcasters and a number of cable network programmers to supply in-band PSIP EIT's, but there are no firm commitments to do so. Although work is underway in the cable industry to put the infrastructure in place to carry PSIP EIT's, there is no firm commitment to an established timetable.

D. POD-Host Interface Copy Protection

The CEA/NCTA Agreements are silent on the issue of copy protecting the POD-Host Interface, but the SCTE Standards are not. DVS/295r5 specifically references DVS/301r3, which, in turn, references the POD-Host Interface Licensing Agreement (PHILA). PHILA, in turn, requires that cable-ready television receivers be certified to comply with OpenCable Specifications that include requirements in addition to the copy protection function, e.g., diagnostics.

E. Receiver Certification

CableLabs believes that it has the authority to require that all cable-ready digital television receivers must be certified by CableLabs to comply with OpenCable Specifications. In fact the requirement is included in PHILA as noted above. Receiver manufacturers disagree and believe that self-certification of compliance with EIA/CEA-818-C should be sufficient.

F. POD Rental Cost

Since POD modules will be required to obtain premium services, the rental cost to consumers of the POD module compared to the rental cost of a proprietary set-top box is a concern.

G. OCAP

The cable industry has announced that OCAP is the solution to digital cable interoperability. Although OCAP, like DASE, may eventually play an important role in enabling advanced cable services, it is not necessary to have OCAP to implement the basic and premium services contemplated by and agreed to by CEA and NCTA as expressed in the February 2000 CEA/NCTA Agreements. It

is now nearly two full years since the Agreements were filed with the FCC; shifting to OCAP is certain to cause a significant further delay in the availability of cable-ready consumer digital television receivers.

B.J. Lechner
November 18, 2001

Revised
December 11, 2001

Revised
January 29, 2002

Revised
February 17, 2002

TABLE I
ATSC Standards Documents
Relating to Cable Interoperability

Document Number	Title	Topic	Status
A/52A	Digital Audio Compression (AC-3) Standard	Audio	Approved. Stable.
A/53B	ATSC Digital Television Standard	Video, Audio, Transport and Transmission	Approved. Stable.
A/65A with Amendment 2	Program and System Information Protocol for Terrestrial Broadcast and Cable	PSIP	Approved. Stable. Being Revised.
A/90	ATSC Data Broadcast Standard	Data Transport	Approved. Stable.

B.J. Lechner
November 18, 2001

Revised
December 11, 2001

TABLE II
EIA/CEA Standards Documents
Relating to Cable Interoperability

Document Number	Title	Topic	Status
EIA-23	RF Interface Specification for Television Receiving Devices and Cable Television Systems	RF Interface Performance Requirements	Approved. Has placeholder for yet-to-be agreed values
EIA/CEA-542-A	Cable Television Channel Identification Plan.	Cable Frequency Plan	Approved. Stable.
EIA/CEA-544-A	Low-Frequency Immunity of Tuners in a Cable System	RF Interface Performance Requirements	Approved. Stable.
EIA/CEA-679-B Part B	National Renewable Security Standard (NRSS)	POD Module Interface	Approved. Needs to be updated.
EIA/CEA-818-C Part I	Minimum Requirements for Receiver Compatible Digital Cable TV Systems	Digital Cable Network Interface Requirements	Approved. Stable. Being Revised.
EIA/CEA-818-C Part II	Minimum Requirements for Cable-Compatible Digital TV Receivers	Digital Cable-Ready Receiver Requirements	Approved. Stable. Being Revised.
EIA/CEA-814	Emergency Alert Message for Cable	Emergency Message Standard. Identical to DVS/208r8	Minor problem identified. May need to be revised.
EIA/CEA-608-B	Line 21 Data Services	NTSC Captioning and Other Data	Approved. Stable.
EIA/CEA-708-B	Advanced Television Closed Captioning	Content Advisory Standard.	Approved. Stable.
EIA/CEA-766-A	U.S. and Canadian Rating Region Tables (RRT) and Content Advisory Descriptors for Transport of Content Advisory Information Using ATSC A/65A Program and System Information Protocol (PSIP)	Content Advisory Standard.	Approved. Stable.

EIA/CEA-819	Cable Compatibility Requirements for Two-Way Digital Cable TV Systems	Two-Way Digital Cable Network Interface and Cable-Ready Receiver Requirements	Approved. Being Revised.
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B.J. Lechner
November 18, 2001

Revised
December 11, 2001

Revised
January 29, 2002

Revised
February 17, 2002

TABLE III
SCTE Standard Documents
Relating to Cable Interoperability

Old Document Number	New Document Number	Title	Topic	Status
DVS/031r5	ANSI/SCTE 07	Digital Video Transmission Standard for Cable Television	QAM Specifications	Approved. Stable. ITU Standard.
DVS/053r7	SCTE 21	Standard for Carriage of NTSC VBI Data in Cable Digital Transport Streams	608-B Captions, etc.	Approved. Stable.
DVS/157r1	ANSI/SCTE 20	SCTE Standard Methods for Carriage of Closed Captions and Non-Real Time Sampled Video	608-B Captions, etc.	Approved. Stable.
DVS/167r2		Digital Broadband Delivery System: Out-Of-Band Transport - Mode B	Scientific Atlanta OOB System	Approved. Stable.
DVS/178r3		Digital Broadband Delivery System: Out-Of-Band Transport - Mode A	Motorola OOB System	Approved. Stable.
DVS/194r3	SCTE 26	Home Digital Network Interface Specification Proposal with Copy Protection	1394 with 5C	Approved. Stable.
DVS/208r8	SCTE 18	Standard: Emergency Alert Message for Cable	Emergency Message Standard	Minor problem identified. May need to be revised.
DVS/234r2		Service Information Delivered Out-Of-Band for Digital Cable Television	Defines Cable OOB SI Profiles.	Approved. Stable.
DVS/241r1		Digital Video Service Multiplex and Transport System for Cable Television	Transport Standard. Defines In-Band SI.	Being revised. May be controversial.

DVS/258r4	SCTE 43	Digital Video Systems Characteristics for Cable Television	Defines Cable Video Formats.	Approved. Stable.
DVS/295r5	SCTE 28	Host POD Interface	Defines Physical Interface and Signaling Protocols.	Approved. Stable. Does not support VOD, etc.
DVS/301r3	SCTE 41	POD Copy Protection System	Defines Copy Protection System Protocols. References PHILA.	Approved. Controversial due to PHILA license terms. Also may be easy to defeat.
DVS/313r5	SCTE 40	Digital Cable Network Interface Standard	Defines the Network Interface. References Many Other Standards.	Approved. Stable.
DVS/051r2		Methods for Asynchronous Data Services Transport	Asynchronous Data Transport	Approved. Stable.
DVS/132	ANSI/SCTE 19	Methods for Isochronous Data Services Transport	Isochronous Data Transport	Approved. Stable.
DVS/311r5		IP Multicast for Digital MPEG Networks	IP Multicast	Approved. Stable.

B.J. Lechner
November 18, 2001

Revised
December 11, 2001

Revised
January 29, 2002

Revised
February 17, 2002

TABLE IV
Open-Cable Specifications Relating to Cable Interoperability

Document Number	Title	Topic	Comment
OC-SP-HOST-CFR-107-011228	Host Device Core Functional Requirements	Set-Top Box and Cable-Ready Digital TV Receiver Specification	Revised in December, 2001.
DVS/313r5	Digital Cable Network Interface	Specifies the Network Interface	Identical to DVS/313r5
IS-POD-131-INT07-010803	Host POD Interface	Specifies Physical Interface and Signaling Protocols	Similar to DVS/295
IS-POD-CP-INT05-010515	POD Copy Protection System	Defines Copy Protection System Protocols	Similar to DVS/301

B.J. Lechner
November 18, 2001

Revised
December 11, 2001

Revised
January 29, 2002

Revised
February 17, 2002

TABLE V
February, 2000 CEA/NCTA Agreements

Table	Topic	Comment
Technical Agreement	Defines the Network Interface.	Needs to be updated to reflect DVS/313r5.
Carriage of PSIP over Cable Plants	Defines Requirements for Carriage of PSIP over Cable Plants.	Needs revision or replacement to clarify certain issues.

B.J. Lechner
November 18, 2001

Revised
December 11, 2001

Revised
January 29, 2002

Revised
February 17, 2002

TABLE VI
FCC Requirements
Relating to Cable Interoperability

Document	Topic	Citation
Jan 18 2001 R&O in CS 98-120+ (FCC 01-22)	Carriage of 8-VSB	Para 76. Will permit cable systems to remodulate to QAM. Option for first purchasers and certain cable systems.
Jan 18 2001 R&O in CS 98-120+ (FCC 01-22) 47 U.S.C. §534(b)(6) and 47 CFR§ 76.57(a)	Channel Number Requirements	Para 83 in Jan R&O: Channel mapping protocols in PSIP...address... nondiscriminatory treatment of TV stations...
Sept 14, 2000 R&O in PP 00-67 (FCC 00-342)	Definition of Cable-Ready Digital TV Receivers	Para 24: Digital cable ready 1; Para 25: Digital cable ready 2; Para 26: Digital cable ready 3
June 1998 Report & Order in CS 97-80	Separable Security and Retail Availability of Navigation Devices	Para 49: Separable Security Para 13 and throughout: Retail availability

B.J. Lechner
November 18, 2001

Revised
December 11, 2001

Revised
January 29, 2002

**NCTA Comments on the
ATSC Report on Digital Cable Interoperability
March 5, 2002**

Introduction

The ATSC Ad Hoc group on Digital Cable Interoperability submitted its report on cable interoperability issues to the ATSC Board of Directors on January 31, 2002. NCTA submits the following comments categorized by section and paragraph.

Comments

Section I, Introduction

¶2 *“The [PSIP & Technical] Agreements specified that cable operators carry basic programming services in-the-clear....”*

There is no reference in the Agreements specifying that cable operators would place any services in-the-clear, rather the Agreement simply states how such signals would be treated if they existed.

¶4 *“This document does not address the important problem of ensuring interoperability between terrestrial broadcast digital television signals and the existing proprietary digital set-top boxes currently deployed in cable systems, nor does it address issues relating to must-carry or retransmission consent.”*

No “important problem” exists with respect to the technical interoperability between terrestrial broadcast digital television signals and an existing set-top supplied by the cable operator. Cable operators are currently carrying broadcast HD signals, and providing HD-capable set-top boxes to customers with HDTV receivers to receive those signals. However, the cable industry is concerned about the current generation of display devices (a television receiver or monitor) which generally do not have copy-protected digital interfaces, but rather use component analog interfaces which lack copy-protection technology. Therefore, in order for these display devices to receive HDTV programming delivered over the cable plant, the HD-capable set-top boxes, made available by the cable operator, have component analog interfaces, raising concerns among content providers about the transmission of unprotected signals. Once manufacturers include copy-protected digital interfaces in display devices, digital set-top boxes with compatible interfaces can be used to provide high value digital programming to cable customers.

As for must-carry and retransmission consent issues, these are being dealt with at the FCC and in individual operator-broadcaster negotiations and were never intended - by either party - to be the subject of the February 2000 NCTA/CEA Technical Agreements.

Section II, Standards, Agreements, Specifications and Rules

¶2 *“By and large, the published ATSC, CEA and SCTE standards listed in Tables I, II and III and referenced in the CEA/NCTA Agreements provide a consistent set of standards that will enable a Type 1 cable-ready digital television receiver to be connected directly to a receiver-ready digital cable television system to provide basic analog programming and both basic and premium digital programming to the viewer.”*

Apart from the fact that some of standards and specifications in Tables I, II, III, and IV are incorrectly referenced, this is a correct statement. In particular, the features agreed to by CEA and NCTA that will be provided by these types of DTV models, and which are spelled out in the agreements, are:

- Analog television signals that are transmitted in the clear.
- Digital television programs that are transmitted in the clear.
- Using a Point of Deployment (“POD”) replaceable security module supplied by a cable TV system operator, those scrambled digital television programs that can be authorized by one-way downstream data transmission to the POD module. These include subscription television programs and pay-per-view programs that are separately ordered by telephone.
- The carriage of data, when available, to support the navigation function in the receiver as defined in a separate “PSIP” agreement.

¶3 *“An update to the Technical Agreement is required to make it consistent with DVS-313r5 and DVS-295r5; the PSIP Agreement should also be revised to clarify its meaning in certain respects.”*

No updates to the Technical Agreement are required. The Technical Agreement predates the adoption by SCTE of SCTE 40 2001 (formerly DVS/313) and SCTE 28 2001 (formerly DVS/295), and served as the foundation on which these standards were developed. Naturally, there are some differences between the Technical Agreement and these standards. However, no one disagrees that SCTE 40 2001 and SCTE 28 2001 supercede the Technical Agreement; therefore there is no reason why the Technical Agreement should be updated.

In addition, there is no need for the PSIP Agreement to be revised to clarify its meaning. This document was agreed to by the consumer electronics industry. The meaning of the document is clearly stated - that the requirements are based on the availability of PSIP data from the content provider. These requirements discuss the carriage of PSIP through the distribution chain and not its creation.

Finally, none of the requirements or implementation scenarios stated in the Agreement requires the development of additional technical specifications or standards; however, they may require upgrade or replacement of existing equipment by individual cable operators or additional product development by product vendors. Cable operators are working closely with CableLabs and leading manufacturers of PSIP-related products to conduct tests to ensure the cable industry is prepared to support the carriage of PSIP information in accordance with the Agreement.

Section III -- Brief History of the Development of the Network Interface and Host-POD Interface Standards.

SCTE 41 2001 (formerly DVS/301), *POD Copy Protection System*, is another important standard pertaining to the Host-POD interface. Its chronology should also be addressed by adding a new subsection C containing the following:

- C. Pod Copy Protection System**
 - 1. DVS/213 approved in June 1999 was the initial document.
 - 2. DVS/301 approved in January 2000 was the second document.
 - 3. SCTE 41 2001 adopted in November 2001 is the final document.

Subsection A – Network Interface Standard

The 818 document was based on an existing CableLabs specification, and later on the SCTE DVS/313 standard. Therefore, bullet one should be revised as follows:

- 1. **The OpenCable Network Interface Specification (OCI-N), approved in October 1999 was the initial document.**

The Technical Agreement was never meant to be a stand-alone document and was not meant as a replacement for, but rather a clarification and update to, OCI-N. Therefore, bullet two should be revised as follows:

- 2. **The CEA/NCTA Technical Agreement filed in February 2000 was the negotiated document to clarify some aspects of OCI-N.**

SCTE DVS/313r5 was adopted as a standard by SCTE in November 2001. Therefore, bullet three should be revised as follows:

- 3. **SCTE 40 2001 (formerly DVS/313) adopted in November 2001 is the final document.**

Subsection B -- Host-POD Interface Standard

SCTE DVS/295r5 was adopted as a standard by SCTE in November 2001. Therefore, bullet three should be revised as follows:

- 3. **SCTE 28 2001 (formerly DVS/295) adopted in November 2001 is the final document.**

Section IV, Need to Update the Technical and PSIP Agreement

¶1 *“Therefore the Technical Agreement should be updated to match [DVS/313r5]”.*

There is no need to update the Technical Agreement which served as the basis for SCTE 40 2001 (formerly DVS/313). Indeed, to our knowledge, no one has asserted that SCTE 40 2001 does not accurately reflect the principles defined in the Technical Agreement.

¶2 *“Certain aspects of the [PSIP] Agreement require clarification, either by modification or replacement of the document.”*

“The [PSIP] Agreement does not explicitly address Virtual Channel data and EPG data as separate entities. The Agreement clearly states that “(t)hese requirements are aimed at the carriage of PSIP through the distribution chain and not its creation.” The intent of this qualification, as understood by those participating in the drafting of the Agreement, was that it applied only to EPG data, and that, obviously, in-band Virtual Channel data would, in some instances, have to be created by the cable operator.”

“The PSIP Agreement should make it absolutely clear that Virtual Channel data must always be present in-band on all Transport Streams that carry programs in-the-clear, whether or not any EPG data is available from the content provider.”

The meaning of the PSIP Agreement is clear and no revisions are needed. This Agreement was the result of lengthy negotiations between NCTA and CEA. During these negotiations, the cable industry made clear that these carriage requirements assume the availability of PSIP data from the content provider, and that it would be prepared to support the carriage of PSIP information when made available from the content provider in accordance with the Agreement. CEA agreed with the document.

In addition, these statements overstate the concern that navigation cannot occur without PSIP data. It is our understanding that most, if not all, DTV receivers today have no navigation problems even though the terrestrial broadcaster does not consistently support PSIP. Moreover, the cable industry does not expect receivers to support navigation to an unscrambled service that is not referenced in a Virtual Channel Table included in the same transport stream. In any event, when broadcasters include a Virtual Channel Table in their broadcast signal, an in-band Virtual Channel Table will be delivered to cable customers.

Finally, these statements proceed from the incorrect assumption that there will be no other method for providing the VCT. This is incorrect. Most cable customers will be in possession of a POD security module to receive cable programming, the overwhelming majority of which will be scrambled on the cable system. As such, the VCT will be available out-of-band.

¶3 *“The Agreement states that “(w)hen sent out-of-band, event information data shall conform to SCTE DVS-234r1 (profiles 4 or higher).” It is not clear whether this requirement is intended to apply to all event information data, regardless of its source, or only to event information data that is supplied by the content provider. Again the PSIP Agreement needs to make it clear that this requirement applies to all event information data, regardless of its source.”*

The meaning of the Agreement is clear in this area. The “when” statement reflects the fact that the cable operator has the choice whether or not to send this data. The requirement states that when an operator chooses to send data, the operator will follow one of these profiles.

Section V -- Implementation Issues

¶1 *“This Section discusses a number of technical and operational issues that relate to the implementation of the CEA/NCTA Agreements to enable support of Type 1 cable-ready digital television receivers. None of these issues is a show-stopper; the necessary standards are in place. Cable operators will, in some cases however, need to obtain the necessary hardware and software to implement the Agreements.”*

NCTA agrees that “the necessary standards are in place,” and has stated on numerous occasions that the cable industry is prepared to support these standards. However, we note that, to our knowledge, no Type 1 Cable-Ready receivers have been built.

Subsection A -- Interoperability Testing

“There is a strong need to conduct interoperability tests (frequently called plugfests) that will fully exercise these important interface standards. CableLabs has conducted limited tests of these standards as part of the OpenCable program, but full testing of all supported functions has not been done.”

We agree there is a strong need to conduct interoperability tests that will fully exercise these important interface standards. We believe this need has been met: CableLabs, through the OpenCable process, is now conducting its eleventh certification wave aimed at testing and verifying these very interfaces. These certification waves include hundreds of tests that fully exercise all supported functions, and more than a dozen companies have participated. We encourage any manufacturer that has built an integrated DTV to contact CableLabs to arrange for interoperability testing.

Subsection B -- Need to Simulcast System Information

“Current digital set-top boxes do not support the POD-Host Interface and many aspects of the operation of the current digital set-top boxes, particularly the navigation functions, require proprietary System Information that is different from, and incompatible with, that specified in the CEA/NCTA Agreements and defined in the appropriate ATSC, CEA and SCTE standards. Consequently there is a severe chicken-and-egg problem. There are no cable television systems that will currently support a Type 1 cable-ready digital television receiver built to the EIA/CEA-818C Part II standard, and until there is certainty that there will be such cable television systems, there will be no Type 1 cable-ready digital television receivers.”

This statement is misleading. Profiles 1-3 in DVS/234r2, specified in the NCTA/CEA Agreements and defined in the appropriate standards, reflect current practice used for channel navigation information sent out-of-band to cable-owned set-top boxes.

The cable industry will support the February 2000 Agreements as well as the standards based on those Agreements, so that devices built for sale at retail can be directly connected to, and work with, a cable system. Operator-leased set-top boxes, which use proprietary protocols, were not part of the Agreement.

Subsection D – In-band PSIP

“The CEA/NCTA Agreements require that PSIP in accordance with ATSC A/65A be present on all Transport Streams that carry programs in-the-clear.”

This statement is incorrect. The PSIP Agreement addresses carriage; when provided by the content supplier, PSIP will be carried in a form consistent with the Agreement.

Subsection F – Out-of-Band System Information.

“The CEA/NCTA PSIP Agreement explicitly requires profile 4 or above for event information data.”

This statement is inconsistent with the PSIP Agreement. It should state that profile 4 or above will be used for event information data when it is provided.

Section VI, Non-Technical Issues

A discussion of non-technical issues is beyond the standards development role of the ATSC and should not be included in the document.

TABLE III, SCTE Standard Documents Relating to Cable Interoperability

DVS/208r8. This standard was approved in April 2001 and is now SCTE 18 2001. NCTA is not aware of any “minor problems” or the reported need to revise this standard. However, as ATSC is fully aware, standards are always undergoing correction and modification.

DVS/241. The conclusory statement “[M]ay be controversial” should be deleted. Subjective statements such as this should not be included.

DVS/258r4. This standard was approved in December 2001 and is now SCTE 43 2001.

DVS/295r5. This standard was approved in November 2001 and is now SCTE 28 2001.

DVS/301r3. This standard was approved in November 2001 and is now SCTE 41 2001. In addition, the statement “[C]ontroversial due to PHILA license terms. Also may be easy to defeat” should be deleted.

DVS/311r5. This standard was approved in December 2001 and is now SCTE 42 2001.

DVS/313r5. This standard was approved in November 2001 and is now SCTE 40 2001.

TABLE IV, Open-Cable Specifications Relating to Cable Interoperability

CFR-OCS-UDC-INT02-000419. This specification should be replaced with OC-SP-HOST-CFR-I07-011228.

CFR-OCT-UDC-INT03-010515. This specification should be replaced with OC-SP-HOST-CFR-I07-011228.

DVS-313r5. SCTE 40 2001 (formerly DVS/313) is an SCTE standard and referenced in Table III. It should be removed from this table.

IS-POD-131-INT07-010803. This specification should be replaced with OC-SP-HOSTPOD-IF-I08-011221.

IS-POD-CP-INT05-010515. This specification should be replaced with OC-SP-PODCP-IF-I06-011221.

The following references should be added to the table:

OC-SP-OCAP1_0-I01-011221.pdf	OCAP 1.0	Defined common APIs to permit application portability	
OC-SP-CDS-IF-I01-011221.pdf	Common Download Specification	Defines secure download protocols for updating firmware and applications in the Host.	

TABLE V, February, 2000 CEA/NCTA Agreements

The statements made in the “Comment” column, all of which are conclusory and subjective judgments, should be deleted.

TABLE VI, FCC Requirements Relating to Cable Interoperability

The statements made in the “Topic” and “Citation” columns, all of which are subjective in nature should be deleted. Instead, the relevant FCC documents, along with their titles, should simply be listed.

Additional Comment

These comments should accompany the report and ATSC should take no further action with respect to the distribution of the report.

Technology Group on Distribution Status Report

1. INTRODUCTION

The most recent meeting of the Technology Group on Distribution was held on February 13 at the headquarters of the Consumer Electronics Alliance in Arlington, VA. This report will detail actions taken at that meeting.

2. ASSIGNMENT FROM BOARD OF DIRECTORS

It was reported that, based upon input from the Applications Subcommittee, the Board of Directors recommended at its January 31, 2002, meeting that T3 undertake new activities to consider standards and revisions to existing standards necessary to implement the "robust mode" under development in specialist group T3/S9. The plan for moving forward is as follows:

Regarding the video and audio coding issues outlined in Item #1, this work will be examined by T3/S6 (Video Coding, Mark Eyer chair) and T3/S7 (Audio Coding, no current chair).

Regarding Items 2, 3, and 4, these issues will be examined by T3/S8.

Regarding Item 5, this issue will be examined by T3/S13.

The specialist groups were directed to bring back to the next T3 meeting their comments and recommendations on ways to proceed, including work plans as appropriate.

3. SPECIALIST GROUP ACTIVITIES

3.1 T3/S8, Data Multiplex/Transport

T3/S8 chair Bernie Lechner briefed the committee on specific activities in his specialist group. Actions and decisions included the following:

A process for moving forward on the draft revision to Amendment 1 to A/65A was approved, with the goal of sending the document to a vote of T3 later this month.

Amendment 2 to A/65A was approved for re-ballot by T3, following resolution of comments received during the first ballot of the document.

Amendment 3 to A/65A dealing with the Retransmission Control Descriptor was approved for a ballot of the full membership.

The final report of the Ad Hoc Group on Code-Point Issues was sent to the Board of Directors with a recommendation that it be designated a Technology Group Report.

A comment resolution process was agreed to for the draft Recommended Practice, "PSIP Implementation Guidelines for Broadcasters."

3.2 T3/S9, RF Transmission

John Tollefson (PBS) reported on activities within the T3/S9. Specific items covered included:

The VSB Enhancement Testing Consortium (VETC) has completed reference receiver testing.

VETC has developed a laboratory test plan and has begun laboratory testing at ATTC.

VETC is developing a field test plan and will begin field testing this month, dependent on the receipt of a 2nd equipment packages from respondents.

Broadcom and Oren have declined to supply hardware for testing.

An on-channel repeater draft standard is expected to be ready in time for consideration at the next meeting of T3/S9.

3.3 T3/S13, Data Broadcast

Regis Crinon (Intel) reported on current activities within T3/S13. Specific actions and decisions included:

Amendment 1 to ATSC Standard A/90 was approved for a vote of the full membership.

A/90 Corrigendum 1 and Corrigendum 2 were approved for a vote of the full membership.

The draft Synchronized/Asynchronous Trigger Standard was approved for a vote of the full membership

A comment resolution process was outlined and agreed upon for the recently approved ATSC Standard, IP Multicast with Sessions.

Mr. Crinon also stated that, upon completion of the current T3/S13 projects, he will need to step back from his work on ATSC activities after this meeting because of changes at Intel. He thanked the members of T3 in general, and T3/S13 in particular, for their help and support.

T3 subsequently approved (unanimously) the following Resolution:

“Whereas Regis Crinon, PhD, has served as the chair of ATSC Specialist Group T3/S13 for the past 3 years;

And whereas he has given freely of his time in pursuit of technical standards, contributing a total of more than 5 years to the work of the ATSC;

And whereas he has given dedicated service and made valuable contributions to the work of the ATSC;

And whereas his contributions have led to important enabling technologies relating to digital television;

Now therefore be it Resolved that Dr. Crinon is hereby recognized for his work on behalf of the Advanced Television Systems Committee, and that the Technology Group on Distribution formally takes note of his efforts with thanks and appreciation.”

Mr. Justus praised Dr. Crinon’s work and said ATSC will miss his contributions.

3.4 T3/S17, DASE

Glenn Adams (XFSI) reported on work currently under within specialist group T3/S17 relating to the DASE-2 Requirements Document. This document describes the specialist group’s requirements for the design of DASE-2 (DASE Level Two); it is a chartered deliverable of T3/S17. Following some discussion, an ad hoc group was formed to examine the document,

solicit comment from T3 members, and report back at the next meeting—or earlier if possible. The AHG is being chaired by Richard Chernock (IBM).

3.5 T3/S18, Application Reference Model

Mike Dolan, T3/S18 chair, reported on the comment resolution work completed in the specialist group on the draft ARM standard. Following discussion, a process was agreed to whereby the document will be sent to a re-ballot of T3.

3.6 A/49 Update and Review

A small group was formed to examine A/49, the Ghost Cancellation Reference Signal Standard, which has been on the books for many years and needs to be reaffirmed. David Koo (KooLabs) will lead the work.

4. SCHEDULE OF NEXT T3 MEETINGS

The next meeting of the Technology Group on Distribution will be held on April 17, 2002. The current 2002 T3 meeting schedule is as follows:

June 25, 2002

August 14, 2002

October 8, 2002

December 2, 2002

Attachment 1: Summary of Action Items

The following Action Items were developed at the T3 meeting of February 13, 2002.

- 1) Richer to pursue obtaining an OUI from IEEE (carried forward from the December 5, 2001 meeting).
- 2) Specialist group chairs Eyer, Lechner, and Crinon to consider the direction given by the Board regarding possible new standards and revisions to existing standards necessary to implement the “robust mode” of transmission currently under development in specialist group T3/S9. Specific assignments include the following:
 - Eyer, as T3/S6 chair, to consider the video/audio coding issues encompassed by Item #1 of the Board recommendations, and to report back to T3 at the April 17 meeting with a plan for moving forward. A work plan should be provided to T3 as appropriate.
 - Lechner, as T3/S8 chair, to consider the transport stream issues encompassed by Items #2, 3, and 4 of the Board recommendations, and to report back to T3 at the April 17 meeting with a plan for moving forward. A work plan should be provided to T3 as appropriate.
 - Crinon, as T3/S13 chair, to consider the data broadcasting issues encompassed by Item #5 of the Board recommendations, and to report back to T3 at the April 17 meeting with a plan for moving forward. A work plan should be provided to T3 as appropriate.
- 3) Tollefson and Allison to prepare an “issue brief” document for consideration by the Board of Directors that addresses certain high-level issues related to the work of the VSB Enhancement Specialist Group. Specifically: the work of T3/S9 is focused on making a technology decision relating to VSB enhancements, but that it cannot draw conclusions over whether the improvements that it ultimately recommends make good business sense to implement by broadcasters and receiver manufacturers. This document shall be posted to the T3 reflector for comment and revision (as necessary) before being delivered to the Board.
- 4) Crinon to forward to ATSC staff Amendment 1 to ATSC Standard A/90 (T3-565) for a four week vote of the full membership.
- 5) Crinon to forward to ATSC staff Corrigendum 1 to ATSC Standard A/90 (T3-563), as amended following disposition of comments received during the T3 ballot, for a four week vote of the full membership.
- 6) Crinon to forward to ATSC staff Corrigendum 2 to ATSC Standard A/90 (T3-564), as amended following disposition of comments received during the T3 ballot, for a four week vote of the full membership.
- 7) Crinon to forward to ATSC staff the draft Synchronized/Asynchronous Trigger Standard (T3-561), as amended following disposition of comments received during the most recent T3 ballot, for a four week vote of the full membership.
- 8) Crinon to work with Whitaker to address editorial comments received during the membership ballot of the IP Multicast with Sessions Standard. Upon completion, ATSC staff shall post the finished document on the ATSC Web site.
- 9) Weiss and Lechner to complete the review process for the revision to Amendment 1 to A/65A relating to Directed Channel Change with the goal of moving the document to a ballot of T3. The specific procedure is as follows: The document shall be distributed to T3/S8 for a two week comment period, and if no new substantive comments are received as determined

by the AHG (chaired by Mr. Weiss), the document shall be forwarded to a two week comment period of T3, and finally if no new substantive comments are received as determined by the AHG, the document shall—upon the approval of the Chairman of T3—go to a four week ballot of T3.

- 10) Eyer to integrate certain clarifying language into the draft Amendment 2 to A/65A, as revised to address comments received during the T3 ballot of the document, and to then forward the finished Amendment to ATSC staff for a four week re-ballot by T3.
- 11) Hamilton to forward to ATSC staff Amendment 3 to A/65A, as revised to address comments received during T3 balloting, for the issuance of a four week ballot of the full membership.
- 12) Allison and Henderson to review the Board resolution relating to robust mode transmission and to report back to T3 on whether any clarification of terminology relating to such work is necessary or appropriate.
- 13) Richer and Chairman Justus to report to the Board of Directors that T3 recommends the final report of the Ad Hoc Group on Code Point Issues be designated as a Technology Group Report.
- 14) Whitaker and Richer to develop a plan for moving forward with a Code Points Registry and to report back to T3 at the April 17 meeting.
- 15) Whitaker and Lechner to review comments received during the T3 ballot of the draft Recommended Practice, “Program and System Information Protocol Implementation Guidelines for Broadcasters,” and to take steps necessary to resolve those comments, with the goal of moving the document to a ballot by the full membership.
- 16) Chernock to chair the DASE-2 Scope and Requirements Ad Hoc Group and to report back at the next T3 meeting—or earlier if possible—with a set of recommendations for moving forward on DASE-2. Also serving on the AHG are Allison, Goldberg, Weiss, Pizzi, Adams, and Huang.
- 17) Chairman Justus to contact the co-chairs of the Applications Subcommittee and inform them of the work of the DASE-2 Scope and Requirements Ad Hoc Group, and invite their involvement as appropriate.
- 18) Dolan to post T3-558e (draft ARM Standard) to the T3 reflector for a two week review period, after which the comment resolution group chaired by Mr. Dolan shall deliver to ATSC staff a document for ballot by T3 for a period of four weeks.
- 19) Eyer to form a comment resolution ad hoc group within T3/S6 to address comments received during the T3 ballot of Amendment 1 to A/53B, and to report back to T3 regarding the disposition of those comments.
- 20) Koo and Patel to begin work on a draft revision of A/49 and to report back at the next T3 meeting with recommendations on how to proceed.

ATSC ATV Implementation Subcommittee [IS]
Report of Status, March 7, 2002

The ATSC Implementation Subcommittee last met on Tuesday, 15 January 2002, at the offices of Wiley, Rein and Fielding, in Washington, D.C.

PSIP Implementation Working Group (PSIPWG)

The IS PSIP WG has held two telephone meetings since the last report and is making progress defining the information flows needed to manage a station and insure the DTV signal has all needed elements. A permanent chair is still being sought.

RF Issues Working Group (RFGW)

The group has met once since the last report and is continuing to refine reception variables.

Systems Evaluation Working Group (SEWG)

There have been two meetings since the last report and the central focus continues to be Directed Channel Change and broadcast distribution system latency.

Closed Captioning Working Group (CCWG)

Chairman Gerry Field has revitalized the group, and has solicited participation from interested ATSC members. Another caption Summit has been scheduled for March 15th at WETA.

Field Interoperability Evaluation Working Group (FIEWG)

No activity since the last report.

Standards Indexing and Access Ad Hoc Group

The ATSC Standards Inventory is in trial publication for IS member review prior to being transferred to the ATSC web site.

ARIB Communications: Assessment and Response

The IS discussed what should be in the response to a liaison communication from ARIB about content identification and metadata and a response was sent from the IS Chair.

The next IS meeting will be Thursday, March 14, 2002 at NAB.

The following meeting will be Thursday, May 16, 2002 at NAB.