

**Minutes:**  
**ATSC Planning Committee**

8 February 2007, 11:00 a.m. until 4:30 p.m. EST  
NAB, 1771 N Street, N.W., Washington, D.C.

**1. WELCOME AND INTRODUCTIONS**

Chairman Graham Jones (NAB) called the meeting to order at 11:25 a.m. EST at the headquarters of the National Association of Broadcasters in Washington, D.C. He thanked NAB for hosting the event and welcomed those in attendance. He asked each member to identify him or herself. The attendance list is given in **ATTACHMENT 1**.

**2. APPROVAL OF DRAFT AGENDA**

Chair Jones asked for consideration of the draft agenda, which was posted to the PC reflector on January 24. He noted that a revised version of the agenda was posted to the reflector on February 7 and provided in printed form for this meeting (**ATTACHMENT 2**) that reflects the following changes: 1) elimination of item 12 "ATSC Strategic Plan" since the subject is already covered in agenda item 9, and 2) placing the PC-3 report prior to PC-2 under agenda item 10. These changes were accepted by the committee. No further changes were requested and the draft agenda was approved as amended.

**3. APPROVAL OF DRAFT MINUTES FROM THE LAST MEETING**

Chair Jones asked for consideration of the draft Minutes of the December 13 meeting, posted to the PC reflector on January 28 (**ATTACHMENT 3**). Jerry Whitaker noted one correction to the attendance list. No further changes were requested and the document was approved as amended.

**4. REVIEW OF ACTION ITEMS FROM THE LAST MEETING**

The following action items were developed at the last meeting of the Planning Committee). Items carried forward from a previous meeting are so noted.

- 1) Mark Aitken and PC-2 to come back to PC at the next meeting with an interim report setting out some of the business case analysis and requirements for an ATSC mobile and handheld standard.  
*Completed. On agenda.*
- 2) Jerry Whitaker to set up a reflector for use by PC-3.  
*Completed.*
- 3) Richard Chernock and PC-3 to produce an interim report on non-real-time services.  
*Completed. On agenda.*
- 4) Chairman Jones and Pat Waddell to discuss offline the PC request to TSG relating to low bit rate video.  
*Completed.*

**5. CHAIRMAN'S OPENING REMARKS**

Chairman Jones recognized Jim Kutzner (PBS), who has been named vice chair of the Planning Committee. Mr. Kutzner is Chief Engineer of PBS and, among other positions, was previously vice chair of the ATSC Implementation Subcommittee. Chair Jones said Mr. Kutzner will be a great asset to the PC as it moves forward with implementing the ATSC strategic plan as set out by the Board.

## 6. COMMENTS FROM THE ATSC PRESIDENT

Mark Richer (ATSC) noted the following:

- ATSC is organizing the “DTV Hotspot” for the 2007 NAB Convention. He encouraged organizations interested in participating in the event to contact ATSC headquarters.
- Monique Seguy has joined the ATSC as our new Office Manager. She is currently a graduate student at George Washington University, and planning to go to law school next year. Mr. Richer said he is hopeful she will attend law school here in Washington so she will be able stay with the organization for a few years.
- The ATSC Annual Meeting is set for May 17 in the Washington D.C. area. The program is expected to focus on the Strategic Plan.

## 7. GEOLOCATION TECHNOLOGY

Carl Burnett (GeoQwest International) briefed the committee on the GeoQwest technology (**ATTACHMENT 4**), which centers on a geospatial code that identifies the location and time of an entity. He explained that the precision of this geospatial code enables the representation of a pinpoint location down to within 3 cm horizontally and 1 meter vertically. The time attribute of the code includes both local and global time to within 1 second. He went on to outline how this technology might be applied and used within the ATSC DTV system.

Mr. Burnet provided some technical details of the system, which records the location of the object being captured, not the camera location. This is performed through an optical geospatial referencing system, which eliminates the use of radar or laser location referencing systems and therefore enables unobtrusive location determinations.

Mr. Burnet said that possible implementation scenarios within the media industry include:

- Targeted media content delivery to selected devices based on location and time.
- Targeted media content protection, down to the frame or field level, for selected service providers or consumers.
- Film media tracking, through geocode watermarking of theatrical releases, to prevent film media piracy.
- Digital audio geocode watermarking to prevent music piracy.

Additional discussion focused on potential applications that relate to digital television.

## 8. SYNCHRONIZATION / RETURN CHANNEL TECHNOLOGY

Mike Simon (Rohde & Schwarz) briefed the committee on the concept of “ATSC System Time,” which if implemented, could be used to facilitate new capabilities and services (**ATTACHMENT 5**). He outlined the technical foundations of the concept, and what applications it could enable for broadcasters.

Mr. Simon suggested the definition of a global epoch for ATSC System Time, similar to that used for GPS. By taking advantage of time and frequency diversity, he said it would be possible to create a virtual network spanning two or more DTV stations across a wide geographic area.

Scott Furman (Rosum) outlined how the concept of ATSC System Time could be used for robust position-location determination. He suggested possible commercial applications, such as targeted advertising, traffic and weather alerts, and digital rights management. He explained the benefits of this technology over GPS, which include on greater reliability (particularly indoors).

Mr. Simon next briefed the committee on the possibility of creating a broadcast return channel, made possible by ATSC System Time. He explained that by using existing

technologies, including time division multiplying and antenna beam forming, a shared back-channel using one or more digital channels would be practical.

## 9. ATSC STRATEGIC PLAN PC TASKS

Chair Jones outlined the current Planning Committee tasks relating to the Strategic Plan (**ATTACHMENT 6**). Current tasks include the following:

- Interactive TV intended to raise ACAP awareness and identify implementation issues through demonstrations and field trials
- Non-Real Time intended to expand upon service scenarios developed by the ATSC Board
- ATSC-M, ATSC-H intended to develop requirements and an NWIP for mobile and handheld applications

Chair Jones noted a pending task is to define requirements and develop an NWIP for a suite of “next generation” services for conventional fixed DTV receiver viewing environments, based on service levels concepts put forward by the Board (ATSC 2.0).

Chair Jones summarized PC tasks for the future, which include exploring opportunities and developing requirements for:

- Return path
- 1080/60P
- Improved metadata
- Sensory control

Discussion followed on what services might be included in “ATSC 2.0,” and how the committee should decide how to logically bundle standards and technologies, and to identify and develop complete system solutions. Chair Jones suggested that a subgroup could be formed to work on this going forward. He encouraged committee members to consider how this process might be structured.

Additional discussion focused on where work on 1080P might lead, and what timeframe for this work might be practical.

## 10. REPORTS FROM PC AD-HOC GROUPS

### 10.1 Industry Education and Training

Mr. Whitaker provided an update on current educational activities, specifically:

- The ACAP Interactive TV Seminar, held January 30 in conjunction with the 2007 Hollywood Post Alliance Technology Retreat, went very well. This was the sixth year that ATSC has contributed papers to the Tech Retreat event. The first public demonstration of the ACAP field trial project followed (January 31 through February 2).
- The ATSC will be participating in the SBE Ennes Workshops again this year. The first event is set for February 24 in Sacramento, CA.
- The “ATSC Update” columns in *Television Technology*, the IEEE BTS newsletter, and the SBE newsletter continue to be regular features in those publications.

Mr. Whitaker encouraged persons interested in participating in this work to contact him.

### 10.2 ACAP Demonstration Project

Dan Berkowitz (NBC Universal) reported that the group has held regular teleconferences over the past several months and is making good progress in developing a comprehensive field trial of the ATSC ACAP standard for interactive television (**ATTACHMENT 7**). He said the project

has moved into Phase 1, which is to prove the interoperability of ACAP and OCAP for interactive television in a standalone demonstration of ACAP applications “broadcast” to and run on ACAP and OCAP receivers. Phase 2 will be a trial in a select market(s) of ACAP applications broadcast over airwaves to and run on ACAP and OCAP receivers. The trial goals are to:

- Raise awareness for broadcasters of content and business opportunities
- Raise awareness for local stations of content and business opportunities
- Demonstrate the interoperability of ACAP and OCAP

The first demonstration venue was the HPA Technology Retreat (Palm Springs), January 30 through February 2. Other events planned include:

- CableLabs Winter Conference (Denver), March 4 through 6
- NAB 2007 (Las Vegas), April 14 through 19

Mr. Berkowitz said a lab has been set up at NBC in New York to facilitate testing and applications development. He added that the work so far has identified some items relating to ACAP/OCAP compatibility that ATSC may want to address going forward. Chair Jones asked Mr. Berkowitz to develop a list of issues for consideration by TSG/S2.

The possibility of doing an ACAP demonstration at the upcoming NCTA convention was raised as a possibility. Chair Jones asked Andy Scott (NCTA) to check into this question and get back to Mr. Berkowitz with details.

Chair Jones thanked all organizations involved in the field trial project for contributing resources to this project.

### 10.3 International Participation

Wayne Bretl (Zenith) provided a report on international participation on behalf of Wayne Luplow (Zenith), who was unable to attend today’s meeting. Mr. Bretl said that as other countries accelerate their DTV rollouts, the need for these countries to have a voice in the ATSC process likewise grows. He pointed out that, in many cases, other countries are more aggressive than the U.S. in launching new technologies, specifically:

- In Korea a mobile service has been launched using T-DMB.
- Korean broadcasters want to incorporate AVC/H.264 and have asked ATSC to provide an advanced codec standard.
- In Mexico considerable work has been undertaken relating to ACAP.

Discussion followed on the codec issue and how ATSC might move forward.

### 10.4 PC-3, Non-Real-Time

Rich Chernock (Triveni) reported on the status of work in the PC-3 AHG on Non-Real-Time Delivery (**ATTACHMENT 8**). He said the AHG has been active during the last month, working by teleconference. He said a Scope has been agreed upon and posted to the PC reflector (**ATTACHMENT 9**).

The PC-3 Scope was discussed by committee members, with a variety of views expressed. Several members encouraged PC-3 to not unduly restrict its Scope, but instead to look at complete end-to-end solutions.

Mr. Chernock called attention to an early draft of the planned New Work Item Proposal on NRT services (**ATTACHMENT 10**). He urged interested persons to participate in the ongoing work of PC-3.

### 10.5 PC-2, Improved Transmission

Mr. Aitken reported on progress made by the PC-2 Applications of Improved ATSC Transmission Group (**ATTACHMENT 11**). He called attention to the draft PC-2 NWIP on

mobile broadcast services (**ATTACHMENT 12**) and the Broadcaster Requirements document (**ATTACHMENT 13**).

#### 10.6 ATSC-M New Work Item Proposal

Mr. Aitken reviewed the draft ATSC-M NWIP, which proposes a new mobile broadcasting service. Applications potentially enabled by such improvements in the ATSC transmission system include:

- Mobile reception of live over-the-air broadcasting.
- Non real-time services (as scoped in ongoing PC-3 work), including “content push” service to mobile receivers.
- Data-casting to mobile receivers.
- Video-on-Demand (VOD)/Pay-Per-View (PPV)/Electronic Sell-Through (EST) services to mobile receivers with return channel capability.

Mr. Aitken explained that each new service may transmit various types of content, such as:

- Duplicated and downsized versions of the TV programming, optimized for portable and/or mobile reception (i.e., simulcasting).
- Specific audio-visual content and/or data produced for mobile reception (e.g., local news, weather, traffic information, music videos, sports highlights, and so on).

Mr. Aitken said the NWIP recommends key component categories of a *mobile toolkit* that includes, but is not limited to:

- Advanced codecs
- Application layer reliability solutions (application layer FEC).
- Buffering size to handle transmission-related fades and errors.
- Common functionality for data-casting and interactive application support, including an appropriate middleware layer.
- Content protection and digital rights management for subscription-based programming, VOD/PPV/EST programming, and so on.
- Advanced storage utilization.
- Network augmentation capabilities, including 802.xx or other wireless infrastructures.
- Power management for portable or handheld devices.
- ACAP, viewing metrics, location identification, transactions, and other features.

Mr. Aitken said PC-2 is asking the PC to submit this NWIP to the ATSC Board of Directors for prompt consideration.

Mr. Aitken called particular attention to the Profile Matrix. He acknowledged that the spreadsheet will likely change as the work moves forward. Committee members offered comments on the matrix, and how it might evolve over time. The distinction between Pedestrian and Handheld classifications was discussed at some length. Chair Jones concluded the discussion by stating that the Profile Matrix is a starting point and that it will evolve as the work moves forward, and furthermore that the NWIP on the table is focused on ATSC-M, not the entire range of services charted on the Profile Matrix.

Mr. Aitken next called member’s attention to the draft NWIP document, and discussion followed on specifics of the proposal. A number of views were offered on the scope of the NWIP and what elements should be included or refined in the document. Chair Jones closed the discussion and proposed that a small group consisting of John Godfrey (Samsung), Mr. Richer, and Mr. Aitken take the input provided at today’s meeting and produce a revised output

document. The committee agreed to this approach. Chair Jones went on to direct those members with input on the draft NWIP to participate in the PC-2 AHG and work out any remaining issues on the reflector.

Chair Jones proposed that, once the draft NWIP has been revised, the PC could hold a special meeting via teleconference to finalize the document for submission to the Board. The committee agreed to this process.

A special meeting of the Planning Committee (a teleconference) was set for March 20 from 2:30 p.m. until 4:30 p.m. EST to consider a revised NWIP document.

## **11. ADVANCED EMERGENCY ALERTING**

Chair Jones reminded the committee that the ATSC Board has approved work on advanced emergency alerting. He said TSG has started work on standardizing the carriage of advanced emergency alert information, and PC has been asked to continue to investigate the implications of advanced EAS for reception by consumers.

Chair Jones said this is a project that the PC should begin to focus on. He asked members to give some thought as to how the committee should proceed.

## **12. LIAISON**

### **12.1 ATSC Technology and Standards Group**

Chair Jones reported briefly on major actions from the TSG meeting earlier in the day.

### **12.2 SMPTE S22-10**

Chris Lennon (Harris) updated the committee on work within S22-10, the SMPTE Data Exchange Working Group (**ATTACHMENT 14**). He said the document is presently at FCD (Final Committee Draft) ballot, which closes February 16. He reported that to date, 39 comments have been received, 7 of which have been resolved.

Mr. Lennon said a number of manufacturers have agreed to do trial implementations of the schema and provide feedback to the group over next several months. He said this will drive further refinement of the document and schema, and result in a technically and editorially superior submission as FCD.

## **13. ACTION ITEM REVIEW**

The following action items were developed during today's meeting:

- 1) Andy Scott to explore the possibility of doing an ACAP demonstration at the upcoming NCTA convention, and to communicate that information to Dan Berkowitz.
- 2) Dan Berkowitz and the ACAP Field Trial AHG to compile a list of ACAP-related items that may need to be addressed by TSG/S2.
- 3) A drafting group consisting of Mark Richer, Mark Aitken, and John Godfrey to revise the draft NWIP on ATSC mobile services based on input received at today's meeting.
- 4) Planning Committee members to provide input as appropriate to the revision of the draft NWIP on ATSC mobile services currently underway in PC-2.
- 5) Chair Jones to identify a chair for a new AHG on ATSC 2.0

## **14. NEXT MEETING**

A special meeting of the Planning Committee (a teleconference) will be held March 20 from 2:30 p.m. until 4:30 p.m. EST to consider a revised NWIP document.

The schedule for 2007 in-person meetings is as follows: May 16, September 19, and November 28.

**15. ADJOURNMENT**

There being no further business before the Planning Committee, the meeting was adjourned at 4:10 p.m. EST.

## ATTACHMENTS

### ATTACHMENT 1. Attendance List

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ABC/SMPTE	William Miller
ATSC	Mark Richer
ATSC	Jerry Whitaker
Broadcast Technology Consultants	Steve Smith
Capitol Broadcasting	Sam Matheny
CBS	Charles Einolf
CEA	Brian Markwalter
Coherent Logix	Michael Doerr
Conexant	Shlomo Bexerman
Conexant	Tim Kirstein
Consultant/NCTA	Jeff Krauss
Cox Broadcasting	Sterling Davis
Dolby	Walt Husak
ETRI	Heung Mook Kim
ETRI	Yong-Tae Lee
Gannett Broadcasting	Jeff Johnson
GeoQwest	John Baker
GeoQwest	Ben Coburn
GeoQwest	Andrew Jagusiak
Harris	Joe Seccia
Harris	Chris Lennon
Hitachi	John Henderson
Ion Media Networks	Dan Borowicz
Motorola	Sam Narasimhan
MWG/Tribune	S. Merrill Weiss
NAB	Art Allison
NBC	Glenn Reitmeier
NCTLA	Andy Scott
Panasonic	Peter Fannon
PBS	James Kutzner
Philips	Mark Laramie
Rohde & Schwarz	Mike Simon
Rosum	Scott Furman

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Samsung	C. B. Patel
Samsung	Jungwan Ko
Samsung	Hyeo Jeong Chun
Samsung	Gahyan Ryu
Samsung	John Godfrey
Samsung	Jungpil Yu
Sharp	Craig Tanner
Sharp	Tadashi Motoyama
Sinclair Broadcast Group	Mark Aitken
Sony	Mark Eyer
Spectra Rep	Ralph Justus
Techwell, Inc.	Paul Snopko
Triveni Digital	Rich Chernock
Zenith	Wayne Bretl

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## Participating by telephone:

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CBS	Ren McMann
Harmonic	Pat Waddell
Pioneer	Rich Annibaldi
Scientific Atlanta, a Cisco Company	Arturo Rodriguez
Tribune	Ira Goldstone

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## Attachment Links

**ATTACHMENT 2.** PC-135r1, Draft Agenda

[http://www.atscmembers.org/sg/AS/2007\\_02\\_08\\_Meeting/PC-135r1-Draft-Agenda-2007-02-08.doc](http://www.atscmembers.org/sg/AS/2007_02_08_Meeting/PC-135r1-Draft-Agenda-2007-02-08.doc)

**ATTACHMENT 3.** PC-125r1, Draft Minutes of December 13 Meeting

[http://www.atscmembers.org/sg/AS/2007\\_02\\_08\\_Meeting/PC-125r1-Minutes-2006-12-13.doc](http://www.atscmembers.org/sg/AS/2007_02_08_Meeting/PC-125r1-Minutes-2006-12-13.doc)

**ATTACHMENT 4.** PC-138r1, GeoQwest Presentation

[http://www.atscmembers.org/sg/AS/2007\\_02\\_08\\_Meeting/PC-138r1-GQI\\_ATSC\\_v2.ppt](http://www.atscmembers.org/sg/AS/2007_02_08_Meeting/PC-138r1-GQI_ATSC_v2.ppt)

**ATTACHMENT 5.** PC-139r0, Rohde & Schwarz / Rosum ATSC System Time Presentation

[http://www.atscmembers.org/sg/AS/2007\\_02\\_08\\_Meeting/PC-139r0-ATSC-SytemTime\\_PC\\_Meet.ppt](http://www.atscmembers.org/sg/AS/2007_02_08_Meeting/PC-139r0-ATSC-SytemTime_PC_Meet.ppt)

**ATTACHMENT 6.** PC Tasks Relating to the ATSC Strategic Plan

[http://www.atscmembers.org/sg/AS/2007\\_02\\_08\\_Meeting/ATSC\\_Strategic\\_Plan\\_%20PC\\_tasks\\_2-7-07.ppt](http://www.atscmembers.org/sg/AS/2007_02_08_Meeting/ATSC_Strategic_Plan_%20PC_tasks_2-7-07.ppt)

**ATTACHMENT 7.** PC-143r0, ACAP Field Trial Status Report

[http://www.atscmembers.org/sg/AS/2007\\_02\\_08\\_Meeting/PC-143r0-ACAPFT\\_P1\\_020607.ppt](http://www.atscmembers.org/sg/AS/2007_02_08_Meeting/PC-143r0-ACAPFT_P1_020607.ppt)

**ATTACHMENT 8.** PC-3 Status Report

[http://www.atscmembers.org/sg/AS/2007\\_02\\_08\\_Meeting/PC3-009\\_Status.ppt](http://www.atscmembers.org/sg/AS/2007_02_08_Meeting/PC3-009_Status.ppt)

**ATTACHMENT 9.** PC-3 Scope

[http://www.atscmembers.org/sg/AS/2007\\_02\\_08\\_Meeting/PC3-001\\_Scope.doc](http://www.atscmembers.org/sg/AS/2007_02_08_Meeting/PC3-001_Scope.doc)

**ATTACHMENT 10.** PC-3 Draft NRT NWIP

[http://www.atscmembers.org/sg/AS/2007\\_02\\_08\\_Meeting/PC3-008R4\\_NRT\\_NWIP.doc](http://www.atscmembers.org/sg/AS/2007_02_08_Meeting/PC3-008R4_NRT_NWIP.doc)

**ATTACHMENT 11.** PC-141r0, PC-2 Status Report

[http://www.atscmembers.org/sg/AS/2007\\_02\\_08\\_Meeting/PC-141r0-PC-2-Report-Final-020707.ppt](http://www.atscmembers.org/sg/AS/2007_02_08_Meeting/PC-141r0-PC-2-Report-Final-020707.ppt)

**ATTACHMENT 12.** PC-144r0, Draft PC-2 NWIP on ATSC-M

[http://www.atscmembers.org/sg/AS/2007\\_02\\_08\\_Meeting/PC-144r0-NWIP\\_New%20Broadcast%20Services\\_ATSC-M\\_020607.pdf](http://www.atscmembers.org/sg/AS/2007_02_08_Meeting/PC-144r0-NWIP_New%20Broadcast%20Services_ATSC-M_020607.pdf)

**ATTACHMENT 13.** Broadcaster Requirements

[http://www.atscmembers.org/sg/AS/2007\\_02\\_08\\_Meeting/ATSC%20Broadcasters%20requirements.pdf](http://www.atscmembers.org/sg/AS/2007_02_08_Meeting/ATSC%20Broadcasters%20requirements.pdf)

**ATTACHMENT 14.** PC-142r0, SMPTE S22-10 Status Report

[http://www.atscmembers.org/sg/AS/2007\\_02\\_08\\_Meeting/PC-142r0-Feb-2007-S22-10-Update.ppt](http://www.atscmembers.org/sg/AS/2007_02_08_Meeting/PC-142r0-Feb-2007-S22-10-Update.ppt)