

# **Metadata Dictionary for Public Broadcasting**

## **Phase 4, CPB Contract #7304\_a**

### **Final Project Narrative**

Submitted by WGBH Educational Foundation, December 20, 2004

This final Phase 4 narrative report outlines the Phase 4 objectives, activities, participants, status of associated deliverables, and timelines conducted to finalize the grant project during the period of February 1, 2004 through August 31, 2004. *Reference the previously submitted Interim Project Narrative for the earlier portion of the project's Phase 4 activities.*

## **Phase Four and Grant Project Conclusion Overview**

With the grant project culminating and concluding with preparing for the publication of PBCore version 1.0, the major priorities and activities of Phase 4 were actively carried out and completed in the latter portion:

- To conduct Request for Comments (RFC) rounds for the PBCore (a.k.a. the PBMD, Public Broadcasting Metadata Dictionary) from experts, general users, and the working group;
- To conduct Test Implementations of the PBCore that typify common content exchange scenarios;
- To market the findings of the above to key constituents to promote understanding of, compliance with, and use of the PBCore.

Having built momentum over the project's tenure, and as a result of these efforts, the project garnered increased interest from across the world. (*See "Coordination with Interested Parties" section below.*)

To accommodate a wider audience, the project Web site [www.pbcore.org](http://www.pbcore.org) has been redesigned and relaunched. PBCore version 1.0 is ready for publication on the site, and will be publicly linked upon CPB's finalization of copyright and licensing efforts. Until its publication, it is privately available at the following URL (not for publication): [www.utah.edu/cpbmetadata/SecretSquirrel/PBCore/](http://www.utah.edu/cpbmetadata/SecretSquirrel/PBCore/).

PBCore version 1.0 is also available as an XML DTD (Extensible Markup Language Data Translation), and as an XML schema, the formats informed by test implementations as most needed for implementation. The PBCore User Guide is also published at this site, in HTML and PDF formats (*see CD #14 for final PBCore Elements Web site and User Guide files*).

An emerging focus and priority became the planning effort to address PBCore compliance and sustainability issues prior to the conclusion of the project, in hopes of avoiding or minimizing any hiatus in transitioning post-grant PBCore maintenance to ongoing implementation. [*Reference the "Project Meetings" section below. Also reference the "7304 (d,e) PBCoreImplementation.doc" and "7304 (d,e) PBCore C-S Map.pdf" deliverables submitted on CD #1. Note that the latter two documents combine the areas of maintenance (implementation) and compliance, originally set forth as separate deliverables (d) and (e) in the Phase 4 7304 contract.*]

## **General Project Administrative Activities**

### ***Contract Scope and Budget Planning***

Given that the Phase 4 contract was not finalized until December 2003, and that it reflected resource allocations that had been projected many months prior, the WGBH Project Director began discussions with CPB in February about the challenges of completing the contract scope activities by the original Phase 4 end date of May 31. CPB and WGBH conducted contract amendment discussions in March and April to extend Phase 4 to July 31, with the month of August set aside for WGBH to prepare its final project deliverables to CPB. While the project scope did not change, adjustments to the budget were made to more accurately estimate the resources required. By the time WGBH received the contract amendment in mid-July, it was apparent that project activities would need to be finalized in August. Therefore, the contract amendment was revised on August 10 to reflect Phase 4's conclusion as August 31, with deliverables due September 30. No additional funds were requested for the revised amendment, just an extension of the duration. WGBH contributed the remaining personnel time required.

### ***Project Administration***

The WGBH Project Director began discussions with CPB in February about maintaining continuity in CPB's project administration. With the grant project officer Alison White having been assigned to other duties at CPB, Mark Laskowski was assigned the role of CPB project officer at the end of March. WGBH and CPB held transition discussions and coordination in April and May. In mid-August, Mark Laskowski referred remaining project administration wrap-up to Brian Sickora/CPB.

The WGBH Project Director worked with Alison White and Susan Ross at CPB to advance discussions about how to protect PBCore upon its publishing. Per CPB's determination, PBCore will be copyrighted, which will necessitate organizations represented by Dictionary Team members to sign an agreement, which assigns to CPB the non-exclusive rights for their organizations' contributed work. Note that the WGBH Legal Department worked with Susan Ross to inform the development of the Assignment of Rights agreement.

PBCore will be then made available through a free licensing arrangement using the GNU public documentation license.

## **Working Group Administration and Activities**

The WGBH Project Director planned and made arrangements for the Compliance-Sustainability Meeting held at CPB in May, and the Final Dictionary Team meeting held at WGBH July 15-16. (*Reference "Project Meetings" below.*)

The two newest members of the Working Group, Swatee Surve from PRI, and Rosann Bazirjian from Penn State University Libraries, each left their positions and the project. Rosann provided the name of another Penn State librarian, Jing Ma, for potential consultation as needed.

The Dictionary Team played an active role in guiding the RFC and Test Implementations processes. (*Reference "Request for Comments Web Survey Design/Development/Hosting Subcontractor" and "Test Implementation Analysis/Reporting Subcontractor" sections below.*) The Dictionary Team also continued its main work to finalize PBCore version 1.0. (*Reference "Project Meetings" section below.*)

Working group members also participated in the RFC, and in the Compliance-Sustainability meeting held at CPB in May. (*Reference "Request for Comments Web Survey Design/Development/Hosting Subcontractor" and "Project Meetings" sections below.*)

Working group members James Steinbach and Dennis Haarsager played a leadership role in working with The WGBH National Center for Accessible Media (NCAM) as a potential entity to assume leadership of any post-grant implementation efforts, and in advocating to CPB for its support of an implementation phase. (*Reference Compliance-Sustainability Meeting below.*)

*Note that all 7304 deliverables are submitted on a total of 14 CDs submitted to CPB, with the exception of the following hard copy submissions: 1) the signed 7304(f) Certification of Final Financial Accounting, and 2) press coverage only available in hard copy. Otherwise, all of WGBH's contractual deliverables, and materials created in support of project activities, are submitted on CD #1, along with screen captures of each CD's contents. The remaining 13 CDs are deliverables submitted by subcontractors KUED Media Solutions, and Minnesota Public Radio. Where applicable, related deliverables are noted by their CD number below.*

### **Project Subcontractors**

The WGBH Project Director actively supervised the following subcontractors' work, which included developing and negotiating their contracts/scopes of work/budgets, approval of their deliverables, and ensuring contractual payments. Contractual arrangements were finalized with the test implementation subcontractor, Alan Baker of Minnesota Public Radio, and with Paul Burrows of KUED Media Solutions, the project Web site and listserv vendor who took on additional responsibilities for the RFC Web survey development and hosting.

To ensure fulfillment of the test sites' obligations, the WGBH Project Director worked with the WGBH Legal Department to develop and secure signed letters of agreements with Minnesota Public Radio, National Public Radio (NPR), Public Broadcasting Service (PBS), Kentucky Educational Television (KET), and recognized metadata expert and project advisor Grace Agnew. (*Reference CD #8 for materials generated by each of the test sites.*)

A list of the selected subcontractors and summaries of their work follows.

### **Request for Comments (RFC) Implementation/Analysis/Reporting Subcontractor**

Working under the WGBH Project Director's supervision, and in collaboration with KUED Media Solutions (reference Request for Comments Web Survey Design/Development/Hosting Subcontractor" below), Steven Vedro of SRV Consulting continued and successfully completed the management of the RFC process in March 2004. (*Reference Phase 4 Interim Narrative for initial activities.*)

Steven conducted three RFC data collection rounds:

1. A preliminary survey of the "usefulness" of each of the PBCore Dictionary element definitions and refinements/vocabularies was conducted from February 4-10, 2004. Seventeen (17) members of the PBCore Dictionary Working Group were invited to participate; three (3) reviewed the survey questions and made general comments, and ten (10) members completed the full survey.
2. A larger group of thirty-two (32) invited respondents and five (5) additional Working Group members (37 total) took the full survey between February 16 and March 1<sup>st</sup>; and

3. A small group of nine (9) “metadata experts” from the library science, national standards, and media indexing and archivist communities extended their comments via an “open-ended” survey. They were also asked a number of questions relating to the “philosophy” of metadata schemas that could inform the work of the team asked to update and maintain the “PBCore.”

Highlights of their responses include the following:

- **Ninety-six (96) percent of the respondents “strongly” or “very strongly” agreed** (4.7 mean on a 1.0 to 5.0 scale) **that “public broadcasting needs a core metadata dictionary.**
- More importantly, *after completing the survey* **the same percentage “strongly” or “very strongly” agreed that the proposed PBCore met this need** (with a 4.3 mean score).
- **Eighty-percent of the respondents indicated that PBCore would be a useful tool for marking-up and searching on public broadcast content assets** (with a 4.0 mean score on markup, and 4.1 on usefulness and searching value).

Steven’s activities included: working with KUED Media Solutions to confirm participants and finalize questions sets; developing a draft “invitation letter” (for finalizing by the WGBH Project Director, who invited each invitee by e-mail); coordinating with invited and confirmed participants; working with the Dictionary Team to report results that had implications to PBCore development; and conducting and reporting a thorough analysis of the RFC results.

Note that highlights from the RFC reports were referenced in project marketing materials.

*(For a complete review of Steven’s activities, the RFC process and supporting documents, and an analysis of the RFC results, reference RFC Deliverables on CD #1. In addition, a summary of the final RFC report is available [www.pbcore.org](http://www.pbcore.org). See next section for other RFC-related activities and deliverables.)*

### **Request for Comments Web Survey Design/Development/Hosting Subcontractor**

Paul Burrows/KUED Media Solutions conducted the following activities in anticipation of the RFC process: updated the private PBCore Web site to reflect the results of the controlled vocabulary meeting; hosted and developed the software for Web-based RFC surveys for the project Working Group and invited participants; managed the list of RFC participants and coordinated RFC logistics information with participants; tabulated raw RFC data survey results, and submitted to WGBH Project Director and RFC subcontractor Steven Vedro for analysis and reporting. *(Reference Paul’s RFC deliverables on CD #7.)*

### **Test Implementation Analysis/Reporting Subcontractor**

Alan Baker/Minnesota Public Radio, working under the supervision of the WGBH Project Director, managed the entire test implementation process for the following test implementation sites: Kentucky Educational Television, Minnesota Public Radio, National Public Radio, Public Broadcasting Service, WGBH, and Grace Agnew (recognized metadata expert and project advisor). Planning and test site coordination activities were conducted up until the active testing in May for all test sites, with the exception of Grace Agnew, whose work was carried out at the end of June and beginning of July.

The task for the test implementation sites was to use the draft version of PBCore version 1.0 in several real-world scenarios. Three scenarios were tested with the following goals:

- Test A: To determine how effective PBCore is when used as a data interoperability/translation tool. (i.e., when data is extracted from a content producer's system, mapped to the PBCore, then imported into the national distribution system. This was done both for television and radio.)
- Test B: To determine whether PBCore can be used as the metadata model for a digitizing/archiving process, and in what form the PBCore would be most effective in facilitating a complete "markup" of rich media assets
- Test C: To map PBCore to several other emerging standards in order to determine how difficult it is to map the metadata fields from an existing metadata dictionary to the PBCore data element set

All test participants expressed a sincere belief that their organizations, and public broadcasting at large, need something like PBCore to be widely available (and in use by a majority of public broadcasters) to enable them to capitalize on opportunities in the future. These range from simple labor cost savings to new business opportunities.

The following lessons learned from the test implementations are detailed further in Alan Baker's final report (see *CD #8*). They greatly informed the decisions made at the Final Dictionary Team meeting to finalize PBCore version 1.0 (see "*Project Meetings*" below), in terms of the PBCore itself, and the forms considered most useful for it to be expressed in.

- **Educating the industry is critical** – cultural change necessary for organizations to adopt PBCore is likely an even more difficult challenge than overcoming the technical learning curve
- **Relevance to daily work** – a clear business case for PBCore adoption is needed to achieve wide adoption
- **Understanding project scope** – mapping metadata to existing or future internal system databases calls for skills not always readily available. If organizations and individuals are left to interpret and apply PBCore metadata fields without knowledgeable support, the data they gather may be as unusable in the future as it is now due to inconsistent application
- **Clarify PBCore's intended use** – develop a vision statement for PBCore, its intended uses, and how organizations can implement it
- **Simplify the language** – to help adopters understand the proper way to apply PBCore.
- **Support minimal implementation** – PBCore needs to contain a built-in way to support organizations that want to be compatible but can only provide minimal information about their content
- **Develop solid technical tools and documentation** – all test sites indicated the need for a robust DTD that dictates and explains the proper way to represent a PBCore record in XML, and Grace Agnew suggested an XML schema would be superior. (Note: as a result, both are published along with the HTML version of PBCore version 1.0.)
- **Support of national organizations is critical** – both national distribution partners in the testing phase (NPR and PBS) are in the process of designing next-generation distribution platforms for their members. Without their support, producers might see benefits of PBCore adoption but will not realize labor savings if they have to maintain old data-delivery channels in addition to implementing new methods to ensure PBCore compatibility.

Alan's activities included: finalizing the test scenarios, scope, timelines and test site deliverables requirements; working with the WGBH Project Director to address test site questions and issues regarding their letters of agreements; developing reporting mechanisms and test information documents for each test site; coordinating and conducting regular conference calls with test sites and with the WGBH project director; working with the test implementation tool development subcontractor (reference "*Test Tool Development Subcontractor*" below); working with Paul

Burrows and the WGBH project director to coordinate how best to present the learning from the tests for the final Dictionary Team meeting (*reference "Project Meetings" below*); and developing a number of deliverables.

Note that highlights from the test implementation reports were referenced in project marketing materials.

*(For a complete review of Alan's activities, the test implementation methodology and process and materials created for them, and a thorough analysis of the test implementation results and lessons learned, reference CD #8. CD #8 also includes materials created by each of the five test sites.)*

### **Test Implementation Tool Development Subcontractor**

The test implementation subcontractor worked with the Dictionary Team and WGBH Project Director to ascertain the tools required for the tests. Weighing the available skills and resources existing within the Dictionary Team, it was determined that WGBH was most able to leverage its resources to develop the tools on the short turnaround needed.

WGBH's Thom Shepard and Dave MacCarn conducted the following activities to provide the test implementation sites with test tools: analyzed flat data dictionary for hierarchical XML representation; built XML Generator for PBCore; designed 2 versions of XML DTD for draft PBCore; wrote Quickstart Documentation for PBCore; and provided support, updates and fixes.

WGBH contributed XML DTD (Extensible Markup Language Document Type Definition) and XML schema versions of the draft PBCore, developed by Thom Shepard and Dave MacCarn.  
*(Reference CDs #9 and #10 for materials created for the test implementations.)*

### ***Project Meetings***

#### **Compliance and Sustainability Meeting, May 27-28, 2004 at CPB**

The WGBH Project Director worked with the CPB Project Officers to plan and make arrangements for the Compliance-Sustainability meeting, including retaining and working with Wolf, Keens & Company for facilitation and reporting services. All parties worked prior to the meeting to develop materials for meeting attendees to review prior to the meeting.

Participants included: Alan Baker/MPR, Marty Bloss/NPR, Marcia Brooks/WGBH, Paul Burrows/KUED Media Solutions, Dennis Haarsager/KWSU, Mark Laskowski/CPB, Cate Pederson/PBS, Sean Simplicio/CPB, James Steinbach/WPT, Tracy Vosburgh/WPSX, and Alison White/CPB.

The purpose of the meetings was to inform the substance of the WGBH Project Director's final maintenance and compliance plan deliverables, by assembling a set of recommendations and priorities in near-term, mid-term and long-term steps. Through a combination of full group discussion and small-group breakouts, participants filled in: a compliance matrix, with a breakout of "compliers", with listed value propositions, compliance steps, and compliance risks/costs for each; a grid with action statements for compliance and sustainability; and a preliminary three-year budget with low-high ranges.

One of the key points agreed to as a result of the meeting is the importance of the national public broadcasting organizations' full support for implementation of PBCore as the metadata standard for public broadcasting.

## **Final Dictionary Team Meeting, July 15-16, 2004 at WGBH**

The Dictionary Team continued its vital role to finalize the PBCore for publication of version 1.0, meeting at WGBH to face the complex task of reviewing extensive, detailed and sometimes contradictory feedback from the RFC and test implementations, as well from comments compiled by the Library of Congress from the Dublin Core (metadata standard) Usage Board. (*Reference the "Project Meetings" and "Coordination with Interested Parties" sections below.*) Given the short amount of time available to discuss, weigh, and act on the feedback, work focused on feedback from the RFC and test implementations.

To facilitate the process, Paul Burrows/KUED Media Solutions, incorporated information from the RFC into a special version of the PBCore Web site to be used as a reference tool during the meeting. The Dictionary Team reviewed and addressed the test implementation lessons learned, as shared by Alan Baker. The Dictionary Team particularly responded to the directive to simplify the PBCore, reducing the number of elements from 58 to 48, and simplifying the language within PBCore.

Paul Burrows compiled a list of change orders agreed to during the meeting, and provided the Dictionary Team with a revised, password-protected PBCore site for review. With no other suggested revisions to PBCore version 1.0, Thom Shepard and Dave MacCarn developed an XML DTD and schema.

The Dictionary Team also reviewed the proposed new project Web site map, and made several suggestions.

*(Reference CD #1 for Meetings deliverables and related materials.)*

## **Compliance and Sustainability Efforts**

Following the May 2004, Compliance-Sustainability meeting's conclusion, continuing to this writing, working group members Dennis Haarsager/KWSU and James Steinbach/Wisconsin Public Television have worked diligently to maintain momentum for PBCore's post-grant implementation funding.

To follow up the agreed-upon emphasis that the national organizations' full support is required for implementation of PBCore is as the metadata standard for public broadcasting, James spoke with PBS' André Mendes in early June and received that assurance.

In addition, Dennis and James, as members of both the PBCore project working group and the Digital Consultation panel, specifically advocated to CPB and to the panel that:

1. **A critical investment from CPB to support at least the initial stages of implementation of the PBCore, as accomplished by a central authority, needs to be thoroughly explored.**
  - a. A public broadcasting metadata standard is essential
  - b. PBCore is the right choice to be that standard, and,
  - c. The portion of the digital appropriation recently set aside for digital content and services is a logical source for this investment.
2. **NCAM (National Center for Accessible Media) should be strongly considered as the entity to assume responsibility for the PBCore's implementation, administration, and continued development.** Group members identified important considerations underscoring the NCAM recommendation, among them: mission compatibility; training

experience; cultivation of standards experience; widely varied relationships; understanding of different corporate cultures; public broadcasting "savvy"; ability to extend the PBCore beyond public broadcasting; existing infrastructure; and ongoing neutral presence.

James and Dennis convened a conference call with the meeting attendees to discuss these efforts, and then advised working group members of these efforts in early July via the project listserv.

To support their position, Dennis and James developed a PBCore Case Statement, in coordination with the WGBH Project Director, to underscore PBCore's importance to public broadcasting. They also developed a Statement of Work to outline the required next steps for a managing entity to continue the PBCore's implementation and adoption. These documents led to the development of the plans for maintenance and compliance. *[Reference "7304 (d,e) PBCoreImplementation.doc" and "7304 (d,e) PBCore C-S Map.pdf" on CD #1. Note that the latter two documents combine the plans for maintenance (implementation) and compliance, originally set forth as separate deliverables (d) and (e) in the Phase 4 7304 contract.]*

## **Internal Communications Planning and Activities**

### ***Project Web Site/Listserv Hosting and Maintenance***

Paul Burrows/KUED Media Solutions conducted the following work:

- Hosted and maintained the project Web site and listserv, which included posting new project materials to the Web site, and keeping current the list of authorized listserv participants
- Created and published an "Element Set Web Page" to present the PBCore <<http://www.utah.edu/cpbmetadata/PBCore/>> in anticipation of a) the test implementation process, and b) publishing version PBCore 1.0 at the project's conclusion
- Developed a new project Web site map, to facilitate working group discussion about a proposed Web site relaunch

The WGBH Project Director provided periodic project status updates to working group members via the project listserv.

*(Reference CD #2 and #12 for interim and final listserv participants. Reference CD #5 for Paul's interim and final reports.)*

## **External Project Communications Planning and Activities**

### ***Project Web Site (Public Portion)***

Paul Burrows/KUED Media Solutions continued his role to host the project Web site, and coordinated with the WGBH Project Director to post new project materials.

To follow up discussions that took place at the May Compliance-Sustainability Meetings, James Steinbach registered the URL <[www.pbcore.org](http://www.pbcore.org)>, and Dennis Haarsager worked with Paul in order to redirect the new URL to the existing project site URL <[www.utah.edu/cpbmetadata/](http://www.utah.edu/cpbmetadata/)>.

Of particular note were Paul's tireless efforts for the August 24 re-launch of the PBCore site, in anticipation of releasing the URL to Web search engines upon the project's conclusion. Note that, for the previous duration of the project, the Web site had been set up more as a means to facilitate and document project proceedings. These efforts included: development of a new site



map; finalizing the HTML presentation of PBCore version 1.0, and its accompanying user guide (developed in HTML and in .pdf formats. *Reference CD #6*). (*Reference CD #3 for interim WebTrends report, CD #4 for interim files for Web site, CD #11 for final WebTrends report.*

### ***Promotion and Marketing***

WGBH National Promotions was actively involved in supporting one of the three afore-mentioned key Phase 4 project goals: to market the findings of the above to key constituents to promote understanding of, compliance with, and use of PBCore.

In coordination with WGBH Project Director, WGBH National Promotions' Lisa Cerqueira, with assistance from Natalie Dussault, conducted the following activities:

- Reviewed the project Web site and provided suggestions to the WGBH Project Director and Web site contractor to maximize site usability and marketing potential
- Researched and developed media list of print publications, Web sites, and Weblogs ("blogs") targeting technology and broadcasting audiences (note: the WGBH Project Director shared the list with Dictionary Team members, to solicit their input about publications, newsletters, Web sites, constituencies, other communication vehicles to maximize marketing opportunities)
- Participated in Working Group meetings and conference calls to fine-tune messages and focus of campaign
- Drafted two press releases - one re: RFC results, and a second re: test implementation results and launch of PBCore, and distributed to targeted writers/editors via e-mail
- Posted releases on targeted wires, including Marketwire, TVPredictions.com Newswire and URL Wire
- Posted press releases to WGBH Pressroom
- Investigated potential to post to PBS Pressroom; however, there was not a section for non-programming related information
- Posted press releases/updates to PBS Express
- Conducted follow up pitching to the press via telephone and e-mail
- Distributed releases to Dictionary Team, with encouragement to share with pertinent audiences (i.e., via listservs, newsletters, related organizations, etc.)
- Prominently announced the PBCore version 1.0 launch, with special focus on writers/publications (on- and offline) which focus on technology and metadata
- Supplied project site info to all appropriate internal WGBH staff publications and listservs
- Registered PBCore Web site with key Web portals and search engines and conducted campaign to establish in-bound links to site
- Produced promotional flyer distributed at April 2004 PBS Technology conference (note: at CPB's request, WGBH included a CPB-approved footnote with language to distinguish its digital asset management work from its contributions to the development of PBCore)
- Repurposed promotional flyer and distributed electronically to public television and radio station influencers and organizations relevant to public broadcasting and metadata field
- Monitored and distributed coverage (clips via Burrelles and LexisNexis.com)
- Coordinated press interviews for the WGBH Project Director, with *Current, Communications Daily, and Broadcasting and Cable*
- Provided periodic updates to the WGBH Project Director re: activities and budget status

Note that, while the original budget allocated funds for national advertising, it was not deemed to be necessary, as the marketing messages and target audiences were refined throughout the project; and because other marketing efforts garnered national press attention. In addition to publishing several periodic updates (May 27 on [www.current.org](http://www.current.org), and in the June 7 print edition), *Current* also indicated its willingness to carry a major piece, upon publication of PBCore.

Also note that, as of this writing, a Google search of the term "PBCore" returns approximately 361 results, reflecting the success of marketing efforts.

*(Reference CD #1 for Marketing deliverables, which include an annotated media list, screen grabs of online coverage. Note that hard copies not otherwise available of print coverage in Current, Broadcasting and Cable, and Broadcast Engineering are also submitted with the CDs.)*

## **Communications**

### **Dublin Core Metadata Initiative**

The WGBH Project Director coordinated with Makx Dekkers, managing director of the Dublin Core Metadata Initiative, to: elicit Dublin Core's participation in the RFC process; invite the Dublin Core Usage Board's feedback for the final Dictionary Team meeting; and to elicit his suggestions to inform PBCore sustainability considerations.

The WGBH Project Director also coordinated with Stuart Weibel, to develop language to be used on the PBCore site which acknowledges the investment in, and support of PBCore by the Dublin Core organization and community, which includes globally-recognized metadata experts.

### **Project Presentations, Papers**

Although no funds were allocated for conference attendance and presentations in the period covered by this final project narrative, the project was represented in related presentations at the following conferences:

- Sura/ViDe, Education, Public Broadcasting & the Internet: Keys to Collaboration Workshop, "Public Broadcasting Asset Management Initiative" session, Indianapolis, IN, March 25, 2004 (Dennis Haarsager/KWSU, David Liroff/WGBH, Alison White/CPB), and "Project Sampler" session (ResearchChannel provided integration with PBCore.)
- PBS Technology Conference, April 2004 "Managing Program Data in a Digital Era" (Paul Burrows/KUED Media Solutions). Note: in addition, the first of two project promotional brochures was distributed.
- Public Radio Leadership Forum Technology Sessions, Arlington, VA, May 10, 2004 (summary available at <[http://www.technology360.org/PRLF\\_Technology\\_Session.pdf](http://www.technology360.org/PRLF_Technology_Session.pdf)>).
- NETA e-Media, St. Louis, MO, July 24-26, 2004 (Alison White/CPB), "Public Broadcasting Metadata Dictionary Update"

*(See CD 1# for presentations and marketing brochures.)*

## ***Coordination with Interested Parties***

A great deal of interest was generated by the Request for Comments (RFC), test implementations, and marketing efforts conducted. In many cases, interested parties forwarded e-mails to various industry standards groups and other interested parties. A list of inquiries directly received in the duration covered by this final project narrative follows.

### **WOSU/Marcelita Haskins**

On February 6, 2004, Marcelita Haskins called the WGBH Project Director to reiterate her interest in the availability of PBCore, particularly as it relates to her work on a project to digitize and tag video at WOSU. The WGBH Project Director provided Marcelita with an overview of the remaining project activities and timeline.

### **SMPTTE (Society of Motion Pictures and Television Engineers)**

In February 2004, Mark Richer, President of ATSC (Advanced Television Systems Committee) forwarded his invitation to participate in the Request for Comments to key people in the industry. Among them was Graham Jones, Director of Communications Engineering with the Science and Technology department of NAB. Graham is involved in many industry standards groups, and he chairs the T3/S1 Specialist Group on PSIP Metadata Communication.

Graham's review of the draft PBCore resulted in his concern about PBCore's compatibility with other technical standards. To maximize opportunities for feedback, Dictionary Team members Alan Baker/MPR and Paul Burrows/KUED Media Solutions, met with Graham while all were attending the April NAB conference.

Graham also offered as a resource Mike Cox of Mirador Techniques, who chairs the SMPTE technology committee W25 on Metadata and Wrapper Technology for help you achieve harmonization with the existing SMPTE metadata dictionary. Documents for review were exchanged, and although Mike extended invitations for PBCore's participation at various meetings, project time and budget constraints precluded attendance.

Of relevance to note here is the fundamental agreement by project stakeholders throughout PBCore's development, that PBCore be as simple a tool as possible, in order for it to gain the widest adoption. With that in mind, Graham and Mike were assured that these e-mails and conversations would inform the test implementations and subsequent development of PBCore. In fact, SMPTE was among the metadata standards included as part of the test implementation effort to map PBCore to a number of metadata standards (*see CD #8 for Grace Agnew's Test Implementation deliverables*).

Graham Jones can be reached at:

(202) 429 5345  
[gjones@nab.org](mailto:gjones@nab.org)

Mike Cox can be reached at:

[Mike@miradortechniques.co.uk](mailto:Mike@miradortechniques.co.uk)  
Phone: +44 1264 850360  
GSM: +44 7802 655414

## **Jean-Pierre Evain, European Broadcasting Union (EBU)/TV Anytime**

On February 24, 2004, working group member Paul Burrows received and forwarded to the WGBH Project Director and CPB Project Officer an e-mail from Jean-Pierre Evain, who works at the European Broadcasting Union's Technical Department <<http://www.ebu.ch>>. The EBU is the largest professional association of national broadcasters in the world, with 71 active members in 52 countries of Europe, North Africa and the Middle East, and 46 associate members in 29 countries further afield. Jean-Pierre also serves as development coordinator of the TV-Anytime (TVA) metadata schema for broadcasting <<http://tv-anytime.org>>.

Jean-Pierre was invited to participate in the RFC but missed the survey closing. Hoping to take mutual benefit of using both specifications in a complementary manner, Jean-Pierre invited Paul to attend the TV-Anytime meeting in Provo, Utah in March 2004 to discuss common objectives, but no funds were available in the project budget. Jean-Pierre particularly hoped this dialogue would help TV-Anytime address difficulties it has had in sharing with American colleagues the need for a common data format, noting that the specification is being implemented in Europe (DVB) and in Japan (ARIB).

Jean-Pierre and his colleagues reviewed PBCore with interest during their March 2004 TV Anytime meeting, and wrote to share several ideas and observations, noting that TVA sees PBCore as a requirement for interoperability in the case TVA products are deployed in the US. TVA is working with the CEA, which is looking for a source of metadata for their PVRs.

Jean-Pierre wrote that the PBCore project seems to address all sorts of exchanges including business-to-business (B2B) and business-to-consumers (B2C) applications. Re: B2C applications, he noted that TV-Anytime has developed a set of XML-based specifications to facilitate the market deployment of Personal Digital Recorders (PDRs) based on open standards, and noted a lot of commonality in the elements for the respective specifications.

A future goal suggested was trying to reach a 100% mapping between PBCore and TVA, to be considered if the CEA manufacturers eventually decide to work on a common format for home servers.

Jean-Pierre can be reached as follows:

EBU - Technical Department  
Ancienne Route 17A  
CH-1218 Grand Saconnex (GE)  
Tel: +41 22 717 27 34  
Fax: +41 22 747 47 34  
[evain@ebu.ch](mailto:evain@ebu.ch)

## **Stuart Sutton – University of Washington**

On February 26, 2004, Stuart Sutton (Associate Professor at University of Washington, head of the Gateway to Educational Material project, Director of the Education Digital Library Initiative, head of the Dublin Core DC-Education, and a colleague of Working Group advisor Efthimis Efthimiadis), wrote to Efthimis to ask for documentation about the PBCore element set/application profile.

Efthimis coordinated with the WGBH Project Director and Paul Burrows/KUED, to provide Stuart with a copy of the project paper presented at the Dublin Core conference.

Stuart can be reached as follows:  
Stuart A. Sutton, Associate Professor  
[University of Washington, Box 354985]  
The Information School  
iSchool Research Commons  
University of Washington  
4311 11th Ave NE, Suite 400  
Seattle, WA 98105  
<http://www.ischool.washington.edu>

### **TV Guide – William Thomas**

On February 29, 2004, William Thomas, CTO for the TV Guide Television Group, contacted Efthimis Efthimiadis, PBCore project advisor about learning more about PBCore, as part of a review of potential metadata enhancements to TV Guide's television listings database.

Efforts ensued by dictionary team members and the WGBH project director to identify synergies with other areas within PBS that utilize program listings services, and a meeting was arranged at the April NAB conference with William and working group members Alan Baker/MPR, Cate Pederson/PBS, Paul Burrows/KUED Media Solutions, and Dave Johnston/PBS (representing pbs.org)

At this writing, Dave Johnston and TV Guide are still interested in seeing how their schema for program and schedule information XML ingestion and real-time schedule modification tool will map to PBCore.

William can be reached at:

[william.thomas@tvguide.com](mailto:william.thomas@tvguide.com)  
(918) 499-6353

### **Middle East Television Network (Al-Hurra)**

On March 29, Jesse Nascimento, Media Asset Manager for Middle East Television Network (Al Hurra, The Free One), Broadcasting Board of Governors, US International Broadcasting, wrote to working group member Dave MacCarn. Jesse inquired about information for implementing PBCore at his MAM operation. Jesse had visited the project Web site, and asked for the current status. The WGBH Project Director replied with a status report, a link to the draft PBCore version 1.0, and timeline to publishing. Jesse replied with thanks and a reiteration of Al-Hurra's plan to implement PBCore.

Jesse can be reached at [jnascimento@alhurra.com](mailto:jnascimento@alhurra.com), 703-852-9221.

### **John Brannon**

On April 10, 2004, John Brannon wrote to Paul Burrows/KUED Media Solutions, to request a subscription to the CPB Asset Management listserv, and to inquire as to how to contribute to the PBCore project. Paul facilitated his listserv subscription request. John provided no other context as to his professional background or interest, and the WGBH Project Director wrote to explain that the project would soon be wrapping up and was not in need of additional participants.

John can be reached at [brannon\\_johnny@yahoo.com.au](mailto:brannon_johnny@yahoo.com.au)

### **Mike Aubin – Maryland Public Television (MPT)**

On May 7, 2004 Mike Aubin, with MPT's Thinkport project, was referred by Alison White/CPB to the WGBH Project Director, to learn more about PBCore. In subsequent phone discussion, Mike inquired about the extent of the educator-related metadata in PBCore. The WGBH Project Director described the need to keep the size of PBCore manageable, and the plan to address educational elements via special extensions, which Mike was pleased to hear. Mike was sent a number of links on the PBCore project Web site that specifically addressed these considerations. Mike was also invited to participate in the RFC process, and did so.

Mike can be reached as follows:

Michael Aubin  
Director of Digital Development  
Maryland Public Television  
410-581-4134  
[maubin@mail.mpt.org](mailto:maubin@mail.mpt.org)

### **Mandy Reschler – Indiana University/WTIU**

On May 23, 2004, Mandy Reschler, a student at Indiana University's School of Library and Information Science, who also works at WTIU, contacted project advisor Efthimis Efthimiadis, as a result of her having read the project's paper presented to the Dublin Core conference. She wrote to inquire as to the markup and formats of PBCore, for use in a metadata class presentation. She was referred to the WGBH Project Director, who provided her with a project status, and the link to the project Web site.

Mandy can be reached at [mrenschl@indiana.edu](mailto:mrenschl@indiana.edu).

### **Bruce Jacobs – Twin Cities Public Television (KTCA)/SMPTE**

On June 15, 2004, Bruce Jacobs advised members of the Working Group that he was approached at a SMPTE standards meeting by several prominent people inquiring as to why greater efforts were not made to work with SMPTE. Bruce was apprised by several Dictionary Team members of the complexities of SMPTE's metadata dictionary and the need to keep PBCore simple in order to encourage its use. Regarding the difficulties in attempts to map PBCore to it in the test implementations (*see CD #8 for Grace Agnew's test results*), Bruce expressed a desire that PBCore developers reach out to SMPTE, which was agreed to be considered for potential activity in any subsequent PBCore implementation effort. Bruce also asked to see the existing documentation for PBCore, and gave very positive feedback on its usability and simplicity.

### **OurTV – Community Television Canberra, Australia**

On July 4, 2004, George Bray, project coordinator for OurTV, wrote to Paul Burrows/KUED and the WGBH Project Director to express interest in participating in the PBCore project for the national community television project in Australia.

OurTV is a group of technical organizations implementing systems for a pilot in 2005 and would gladly help test/implement any systems to manage broadcast television assets. George became aware of the PBCore project by doing a search on Google, and googling and sifting for open source metadata projects relating to tv assets.

The WGBH Project Director wrote back to advise the status of the project's wrap-up, and invited George to check back to the project Web site to view the published PBCore and related materials. Paul Burrows signed George up for the CPB Asset Management listserv.

George can be reached as follows:

George Bray  
Project Coordinator  
OurTV - Community Television Canberra  
Mobile: 0411 111 606 \* Home: 02 6161 9191  
Web: <http://www.ourtv.net.au> \* Email: <mailto:geo@ourtv.net.au>

### **Jon Marston – WBUR**

On July 6, 2004, Jon Marston, Web developer at WBUR, e-mailed the WGBH Project Director to reiterate his previously expressed interest in PBCore, and to inquire as to the project status. Mike was given the latest status report.

Jon can be reached at [Jmarston@WBUR.BU.EDU](mailto:Jmarston@WBUR.BU.EDU).

### **Jack Brighton – WILL**

On July 6, 2004, Jack Brighton, Director of Internet Development at WILL, wrote to Working Group member Dennis Haarsager (KWSU, Washington State University) to express interest in PBCore, which was raised in conversation about content sharing via XML and a shared metadata standard at the recent Integrated Media Association conference. Jack's interest underscored the need for a public broadcasting metadata standard, and Jack was given the URL to view the draft PBCore.

Jack can be reached at:

University of Illinois at Urbana-Champaign  
217-333-0850  
[jackb@uiuc.edu](mailto:jackb@uiuc.edu)  
[www.will.uiuc.edu](http://www.will.uiuc.edu)

### **Bob Boone – WHRO**

On July 7, 2004 Bob contacted Alison White/CPB to check on the status of PBCore. The WGBH Project Director supplied Bob with a status update, and with pertinent links for the RFC results and draft PBCore.

Bob can be reached at: [Bob.Boone@whro.org](mailto:Bob.Boone@whro.org)

### **Tim Olson – KQED/Integrated Media Association**

On August 12, working group member Tim Olson/KQED, also a member of The Integrated Media Association (representing top internet staff from stations, national networks, Public Interactive and others) met in Chicago this summer, wrote to request access to the latest version of PBCore.

Tim advised that, out of the IMA meeting came an effort to spec out a central audio player that would serve audio from stations across the system. Also, Tim started a Public Broadcasting Web

technical discussion group, which had been discussing creating a standard XML spec so stations could exchange data (as mentioned above per Jack Brighton/WILL). Tim wrote to inquire about getting a draft copy of PBCore, noting that these efforts would be well served to start from the PBCore version 1.0. Tim was given access to the draft PBCore link to encourage consideration of its applicability to a number of projects in the works, such as those listed here.

Tim can be reached as follows:

Tim Olson  
Interactive Director  
KQED  
[tolson@kqed.org](mailto:tolson@kqed.org)  
415.553.2824

**Chris Spurgeon – Marketplace Productions/KPCC-FM/American Public Media**

On August 23, 2004, Chris Spurgeon, a Web developer with Marketplace Productions, wrote to offer to the project his experience with creating and implementing custom taxonomies. He also asked to be added to the CPB Asset Management Listserv, which Paul Burrows/KUED Media Solutions facilitated. The WGBH Project Director

Chris can be reached at [cspurgeon@marketplace.org](mailto:cspurgeon@marketplace.org), 213.621.3491.