

STATEMENT OF PURPOSE

The WGBH Educational Foundation, a nonprofit public broadcasting station, requests a grant of \$108,110 from the National Historical Publications and Records Commission to advocate for the need for a platform-independent **Universal Preservation Format (UPF)**, designed specifically for digital technologies, that will ensure the accessibility of a wide range of data types—especially video formats—into the indefinite future. WGBH will work with both technology manufacturers and archivists to determine a UPF that meets the needs of both noncommercial and commercial interests. At the end of the two year grant period, WGBH will submit a Recommended Practice to the Society of Motion Picture and Television Engineers (SMPTE), a standards-creating organization, and the Association of Moving Image Archivists (AMIA).

SIGNIFICANCE OF THE PROJECT

Need

According to a recent Library of Congress report, video materials in the public and private sector are estimated to exceed several hundred thousand recorded hours. The same report judges the amount of feet of news film and other film used to record television programming to total in the several millions.¹ Much of this historical material is in danger of being lost.

[T]he preservation of television and video materials faces enormous obstacles, in particular, the vulnerability of videotape to adverse storage conditions, abusive handling, and technological obsolescence.

William T. Murphy, Coordinator
Report on the State of American
Television and Video Preservation
In a letter dated January 16, 1996

Technological obsolescence, in particular, has hindered the preservation of film and video materials by contributing to the enormous expense of accessing stored materials. The standard format for recording television programs has taken several forms over the past fifty years, including kinescope, 2" videotape, 1" videotape and digital tape. As the standard for recorded programming continues to evolve, the equipment used to access materials produced in earlier formats has become increasingly difficult to find and, accordingly, more expensive to use.

¹Redefining Film Preservation: A National Plan; recommendations of the Librarian of Congress in consultation with the National Film Preservation Board [coordinated by Annette Melville and Scott Simmon], August 1994.

The biggest single challenge in preserving the moving image legacy of the 20th century is the proliferation of video formats, both in the past and for the foreseeable future. The archival community has made great progress in improving storage for moving images, or at least understanding this priority. However, pristine video tape in appropriate storage will be “unreadable” without some progress in the compatibility of video formats.

Ernest Dick, former Corporate Archivist,
Canadian Broadcasting Corporation
In a letter dated May 8, 1996

Some archivists and industry members have addressed their preservation needs by transferring older formats to digital tape, thus attempting to maintain the quality of the original material. However, this costly process simply prolongs—rather than solves—the preservation problem. The enormous and rapid changes taking place in digital technology have resulted in a veritable explosion of formats. Eight different digital tape formats are in use at present, with several more in development. Many of these formats have already (or will soon) become obsolete, making them unsuitable for preserving media information. In addition, internal proprietary formats (associated with specific digital non-linear editing systems) run best—or only—on a particular manufacturer’s hardware, making them costly and inefficient for preservation purposes.

The quantity of digital information created and distributed is likely to increase dramatically in the near future. Two technologies—Advanced Television (ATV) and Digital Video Disk (DVD)—are already advancing this trend.

ATV will allow broadcasters to deliver programming and data in the digital domain to the viewer, providing video, audio and other data services with a level of quality not previously obtainable. WGBH helped develop the standards which are currently awaiting approval by the FCC; this approval is anticipated by the beginning of 1997.² Within seven to 15 years from that time, a digital format will be the norm for the distribution of all broadcast media. Moreover, each channel will have the opportunity to present more than one stream of information; each broadcasting station could offer more than one (and as many as five) simulcasts.

The advent of the Digital Video Disk (DVD) is another sign of the growing pervasiveness of the digital format. The DVD is a CD-sized disk which can store as many as four full length movies. This new technology can contain a video program of up to 135 minutes along with up to three simultaneous digital audio soundtracks, each with 5.1 discrete audio channels, plus multiple

²Dave MacCarn was Chairman, Data Analysis Subcommittee, System Subcommittee-System Standards(WP4), FCC Advisory Committee on Advanced Television Service.

channels of subtitles—all selectable by the viewer. The disk can contain alternate scenes and can be programmed to play differing versions of the same film, such as scenes sanitized of sex and/or violence for younger or more sensitive viewers; DVD will allow a single disk to play multiple versions as selected by the viewer such as a "Director's Cut" version containing alternate sequences which were not used in the theatrical release.

There is a significant need for a Universal Preservation Format (UPF), designed specifically for digital technologies, that can store compound content (not only the media itself but also information about it) so that it can be accessed easily both today and into the indefinite future. This UPF must meet the needs of both archivists and technology manufacturers in order to be widely accepted and adopted. (See Appendix A, Letters of Support.)

Archivists have already called for research into this area. In a national plan for redefining film preservation put forth by the Librarian of Congress in August of 1994, he suggested that:

[the new electronic technologies] are already transforming film access but archives should insist that certain stringent criteria be met before new technologies are adopted as preservation media.³

Paul Messier, Conservator of Photographs and Works on Paper for the Boston Art Conservation, recently called for the establishment of criteria for assessing digital video as a preservation medium in a paper that he presented at Playback '96: A Round Table on Video Preservation. His suggested criteria were adapted from those recommended for still images by Basil Manns, Research Scientist at the Library of Congress in his article "The Electronic Document Image Preservation Format." These "criteria" anticipate the technical specifications necessary for the selection and description of data to be preserved through a UPF. However, to date, no further action has been taken within the field of archives.

It is not only archivists and others in the nonprofit world that see the need for a UPF. Technology manufacturers, who are understandably reluctant to make their proprietary formats available to other commercial manufacturers, are equally eager to address consumer demand for convenient access to media. A format that allows for cross-platform, hardware-independent access to media while retaining proprietary formats adds value to their products without damaging brand

³See note 1, Recommendation 3.7.

uniqueness. The “Bento container format,” created by Apple Computer, has approached the UPF concept, without infringing upon proprietary formats.

The “Bento container format,” also known as the OpenDoc® Standard Interchange Format, is a file which specifies the technical structure for how media content is to be stored in the form of data. The container format allows data to be exchanged without modification among various computer platforms. The Bento container format works even if the data contained within containers does not conform to a single software standard. Objects stored in a Bento container can have proprietary or standard formats, and they can be designed to use or ignore Bento mechanisms.⁴

Bento is widely used and endorsed among multimedia content composers.⁵ Avid Technology’s “Open Media Framework” (OMF) Interchange, now a standard format for the interchange of digital media data among heterogeneous platforms, has adopted the use of Bento containers.⁶ The OMF format encapsulates all the information required to transport a variety of digital media such as audio, video, graphics, and still images, as well as the rules for combining and presenting the media. The format includes rules for identifying the original sources of the digital media data, and it can encapsulate both compressed and uncompressed digital media data.

The International Multimedia Association (IMA) also recently released their Recommended Practice for data exchange which is based on Bento and OMF. The Society of Motion Picture and Television Engineers (SMPTE) is currently voting on a similar Recommended Practice.⁷ The IMA’s Recommended Practice specifies methods to exchange multimedia data among multimedia tool, content, and title producers across heterogeneous computer platforms. It defines a flexible container format for data exchange, compositions for expressing relationships of multimedia data objects within containers and to time, as well as source descriptions to express relationships of multimedia data to digital and analog source material. In addition, fundamental data types and properties are defined to provide a sound foundation for the exchange of objects. The intended audience for the IMA’s Recommended Practice is multimedia title and content developers.

⁴IMA Technical Working group, data exchange, IMA 950701.1, p. 2.ii. [retrieve at: <http://www.ima.org/forums/imf/de/>]

⁵Open Media Framework Interchange, list of supporters. [retrieve at: http://www.illustra.com/OMF/OMF_Home_Page.html]

⁶Open Media Framework Interchange report. See note 5, above.

⁷See note 6, above.

However, to date, no one has explored the use of Bento as a preservation container.⁸

Preservation requires the handling of many different recording formats—such as 2” videotape, 1” videotape, D1, D2, D3, and others—which can be considered data types. Although Bento allows for any data type, the OMF Interchange and the Recommended Practice by the IMA only define a minimum number of data types (e.g. TIFF, JPEG and AIFF). By adding additional standard data types to the OMF Interchange and IMA’s Recommended Practice for data exchange, the new Recommended Practice will result in a container format that will be able to encompass all present recording forms and allow for all future forms. The UPF breaks the bond between the recording format and the machine through which the format is accessed. Moreover, in moving from the raw recording format (e.g. videotape) to a data tape (or other media) format that incorporates the UPF, the number of formats that archivists need to preserve will be substantially reduced. Also, since the UPF can be used not just for videotape but also for text, still image and other digitizable or data materials, commercial technology manufacturers can employ it to extend the usefulness of media created on their products.

Goal

Clearly, it is time to bring together technology manufacturers, archivists and standards organizations to advance the creation of a Universal Preservation Format that fits the needs of all.

The **goal** of the Universal Preservation Format (UPF) Project is to produce a Recommended Practice that, if adopted, would benefit a broad range of users of archival records—including archivists and technology manufacturers, distributors and producers—by making it efficient, cost-effective and relatively simple to access records originally created in (or transferred into) a variety of digital formats.

In order to fulfill the overall Project goal, the Project will:

Analyze and determine a **Recommended Practice** for a Universal Preservation Format.

Advocate the need to adopt a Universal Preservation Format and encourage collaboration across disciplines by **Raising Awareness** among archivists and technology manufacturers.

⁸Preliminary inquiries by Dave MacCarn to major commercial and nonprofit technology research and development centers, such as Avid Technology, Inc. and EMC Corporation, have indicated considerable interest in the UPF concept but no active research.

The Universal Preservation Format project will serve as a catalyst to electronic records program development and benefit a broad spectrum of archival and records programs.

Approach

The Universal Preservation Format project's approach is multidisciplinary in conception and execution. Building alliances among professionals in the fields of archives and technology will contribute to the success of the proposed project and will further the efforts of the National Historical Publications and Records Commission to promote interdisciplinary research. (See Appendix A, Letters of Support.)

The Project intends to build alliances in two key ways: (1) through an external Review Group composed of both technology and archival professionals that will provide qualitative feedback on Project findings and (2) through the united advocacy efforts of the Project Director and Co-Director, who are experienced professionals in the fields of technology and archives respectively; they will attend working group meetings, co-present Project findings and co-author an article describing the Project findings.

Although the Project will collect and organize all ongoing research in areas related to preservation formats, analysis of the problem will take place primarily within the Review Group. Review Group members have been carefully selected to represent industry (e.g. Avid Technology, Sony Pictures), standards boards (e.g. SMPTE), information science graduate programs and other academic institutions (e.g. UCLA), libraries, historical societies and archives (e.g. the Library of Congress, the National Archives). (See Personnel, pp. 14 - 16.) Each Review Group member has agreed to formally review the Recommended Practice, and to participate in ongoing email exchanges and teleconferences on specific topics. A dedicated listserv will be monitored by the Project Coordinator and will be a forum for discussion and commentary.

Advocacy efforts will raise widespread awareness of the need for a Universal Preservation Format and encourage research and development. To date, no significant action has been taken toward creating a UPF, even though both noncommercial and commercial entities (such as the EMC Corporation) have indicated an interest in the concept.⁹ It is therefore essential to accomplishing the goals of this project that the UPF concept is presented clearly, compellingly and continually by Project staff. For this reason, the Project Director and Co-Director will travel extensively throughout the project, attending key working group meetings. Their presence at these meetings

⁹See note 8, above.

will (a) encourage working groups to focus on UPF research and development efforts, (b) ensure Project findings are made available to a wide range of professionals and (c) promote cross-industry cooperation.

WGBH Educational Foundation

The WGBH Educational Foundation is a nonprofit institution whose purpose is to further the general education of the public by offering television, radio and other telecommunications programs and services that inform, inspire, and entertain. As the largest public broadcasting station in the United States, WGBH employs more than one thousand people and had a FY 1995 operating budget of \$128 million. WGBH-FM is also the biggest station-based program supplier in the public radio system and WGBH-TV supplies one-third of all prime-time programming seen nationwide on public television. WGBH-TV and WGBH Radio (89.7 FM) have a weekly audience of more than 2 million viewers and 350,000 listeners. WGBH also produces interactive CD-ROMs and Video Disks, World Wide Web site material and classroom videotapes.

For over 40 years, the Foundation has been a leader in advocating the national adoption of standards to ensure universal access to media. For example:

- Descriptive video was developed at WGBH in 1988 for members of the television audience who are blind or visually-impaired. Description augments a program's soundtrack, explaining with a contrasting voice the key actions and pictures for those who cannot see them. During broadcasts, this supplemented soundtrack can be heard over the Separate Audio Program (SAP) channel of any stereo TV or VCR across most of the United States. Due to WGBH's advocacy efforts, descriptive video audio tracks will be standard component of the new ATV format.
- In 1991, The Caption Center (TCC) helped design a new decoder display standard for FCC which updated and enhanced the line-21 system. TCC also helped draft and pass the TV Decoder Circuitry Act of 1990.
- In October of 1995, WGBH hosted a Universal Access Forum among telecommunications industry representatives to raise awareness of access issues and discuss ways to build access

solutions into the National Information Infrastructure.¹⁰ WGBH is currently advocating the adoption of access standards for World Wide Web sites.¹¹

WGBH Media Archives & Preservation Center

The WGBH Media Archives & Preservation Center (MAPC) is responsible for the management and preservation of the Foundation's administrative and production records in print, electronic, film and magnetic media formats. Formally organized in 1979, the present department has a staff of four full-time and three part-time employees, and had a FY 1995 operating budget of \$430,000. A MAPC advisory committee, formed in September 1992, provides expertise and advice, helps generate ideas, solve problems, and works to open channels of communication to benefit MAPC's immediate and long-range goals.

The MAPC collection includes 5,994 hours of master television programming on all major tape formats from 1/2" open reel helical to D3. In addition to master programs, the 26,000 cubic foot collection contains outtake elements and documentation records dating from 1946, all of which relate to program production. Production materials and non-confidential administrative and production documentation are open to internal access; screening tapes and all formally processed archival materials are open to outside public research access. In 1995, MAPC staff processed 2,008 requests for a total of 7,966 individual items from the collection.

WGBH Department of Applied Technology

The WGBH Department of Applied Technology oversees the Foundation's present and future technical resources. The Department of Applied Technology surveys and plans the use of technology across all departments at WGBH. Coordination, enlightenment and advocacy as well as technological investment-planning and technological horizon-watching are the main objectives of this department.

IMPORTANCE OF THE PROJECT FOR PROGRAM DEVELOPMENT

The Universal Preservation Format Project will advance the stated goal of the National Historical Publications and Records Commission program: "To Achieve Progress in the Preservation and Use of Original Source Material." The Project falls under the NHPRC Level-One Objective: "To

¹⁰Funded by a grant from the U.S. Department of Commerce.

¹¹A one-year project in progress, funded in part by the Telecommunications Funding Partnership for People with Disabilities.

carry out the recommendations in the report of the Working Meeting on Research Issues in Electronic Records.” The Project addresses both the Analysis and Advocacy recommendations of the Working Meeting. Specifically, the Working Meeting recommended supporting Projects that:

- analyze the nature and significance of electronic records management problems.
The UPF Project will address this recommendation by analyzing the problem of preserving the video digital data contained in electronic records. Moreover, the Project is designed to raise awareness of electronic records preservation problems and to build support for an effective solution.

- result in initiatives for organizing, coordinating, attracting funding, and providing leadership for electronic records management research and program development.
The UPF Project will address this recommendation by developing a Recommended Practice for a UPF and encouraging its adoption as a cross-industry standard. Project staff will present the UPF concept to both archivists and technology manufacturers at professional conferences and working groups, and through an article in a professional journal. WGBH will play a leadership role in advocating the adoption of a Universal Preservation Format by incorporating its use in the WGBH Media Archives Preservation Center. (See Appendix A, Letters of Support.)

PLAN OF WORK, TECHNIQUES AND PERSONNEL

Plan of Work

The Project’s goal is to produce a Recommended Practice for a Universal Preservation Format that, if adopted, would benefit archives charged with the preservation of moving image media as well as users of those records by making it efficient, cost-effective and relatively simple to preserve and access records originally created in (or transferred into) a variety of digital formats.

The Project has determined that three (3) objectives and eight (8) activities are required to achieve this goal. The objectives have been designed to address the analysis and advocacy needs of the Universal Preservation Format project. For each objective, the appropriate supporting activities and procedures have been written and are presented in the following format:

TITLE - identifies the objective topic

GOAL - states the broad intention for this objective

OBJECTIVE - defines the measurable outcome for this objective

NARRATIVE - gives a broad overview of the objective

ACTIVITIES - states how the objective is to be met by listing specific Techniques

EVALUATION - determines if, and to what degree, the objective was met

Personnel and individual responsibilities are noted on pages 14 - 16. **Resources** for carrying out an effective plan of management are detailed on pages 16 - 18. The Project **Timeline** is on page 19.

I. Recommended Practice

GOAL: Analyze and determine a Recommended Practice for a Universal Preservation Format.

OBJECTIVE: By the 21st month of the Project (September, 1998), the Project will circulate a Recommended Practice that supports the creation of a UPF.

NARRATIVE: The standard data types necessary for a UPF will be determined through a series of Review Group efforts and research into the work of current developers. Review Group efforts will consist of regular teleconference meetings between group members as monitored by the Project Director, and subsequent email exchanges. The Project will determine a Recommended Practice that will serve as a blueprint for a UPF. The Recommended Practice will be a paper, 50-100 pages in length, that will build on the functional requirements already established by the IMA (Recommended Practice for Data Exchange), Apple (Bento Specification) and Avid Technology (OMFI). It will contain information about the fundamentals of a Recommended Practice and a description of the preservation format, including the definition of additional standard data types.

ACTIVITIES

I.a Gather information on current preservation formats.

Technique:

- i Conduct literature searches.
- ii Post queries on relevant listservs (including a listserv dedicated to the UPF project), bulletin boards and WWW sites.
- iii Identify and contact appropriate technology developers and users.

iv Compile and write-up findings.

I.b Analyze practices necessary for the creation of a Universal Preservation Format.

Technique:

- i Using the IMA's Recommended Practice for data exchange as a basis, create a suggested Recommended Practice—a “straw man”—for defining standard data types by Project month 6.
- ii Circulate the “straw man” to pertinent working groups (e.g. SMPTE, SAA, IMA, AMIA), Review group members, interested researchers and developers, and listserv participants.
- iii Monitor commentary and gather feedback via email, listserv postings and other communications.
- iv Modify and circulate a new “straw man” in Project months 12 and again in Project month 18.
- v Compile and write-up findings.

I.c Draft final Recommended Practice.

EVALUATION: Maintain research write-up (Activity I.a.iv) as an internal document. Distribute Recommended Practice according to Dissemination Plan and solicit feedback. Gather Review Group commentary.

II. Raising Awareness

GOAL: Advocate the need to adopt a Universal Preservation Format and encourage collaboration across disciplines by raising awareness among archivists and technology manufacturers.

OBJECTIVE: By the 24th month of the Project (December, 1998), the concept of a “universal preservation format” will be a part of professional literature as measured by the number of relevant contextual mentions found through an Internet search as and as noted in conference presentations.

NARRATIVE: Currently, no such concept as a “universal preservation format” in regards to a digital format is currently being discussed in professional circles.¹² Project

¹²An Internet search using the keywords “preservation format” revealed only 13 entries, none of which were developing new preservation containers although the Cornell/Xerox Commission on Preservation and Access Joint Study in Digital Preservation does related research [see <http://palimpsest.stanford.edu/cpa/reports/joint/products.html>]

staff will advocate the need for both technology and archival professionals to think and act together to preserve historical materials through: participation in working group committees, co-presentations at conferences and co-authored contributions to professional literature.

ACTIVITIES

II.a Advocate the need for a Universal Preservation Format at selected working group committee meetings.

Technique:

- i Present UPF concept at select professional working group annual meetings, engage participants in discussion and encourage members to maintain discussion via listserv, email and phone exchanges. The working group committees that the Project Director will participate in include: the committees of the Society of Motion Picture and Television Engineers (SMPTE), Open Media Framework (OMF) and Interactive Multimedia Association (IMA) working groups. The Co-Director will participate in working group committees of the Association of Moving Image Archivists (AMIA), the Society of American Archivists (SAA), the American Library Association (ALA) and the International Federation of Television Archivists (FIAT). (See Resources, pp. 16 - 18, for working group mandates, frequency of meetings and meeting locations). In the second year of the project, the Co-Director will also participate in SMPTE and IMA working group meetings.

II.b Advocate the need for a Universal Preservation Format at selected professional conferences.

Technique:

- i Project Director and Co-Director to attend and co-present at the SMPTE Annual Conference and the annual Interactive Multimedia Association (IMA). In addition, the Project Director will present at Association of Moving Image Archivists (AMIA) Annual Conference and (in year 2) the Federation of International Television Archivists (FIAT) Annual Conference.

II.c Advocate the need for a Universal Preservation Format through professional literature.

- i Project Director and Co-Director to co-author an article describing Project findings to one or more professional journals. Submissions will be made

to the *SMPTE Journal*, *AMIA Newsletter*, *Archives & Museum Informatics*, *Communications of ACM*, *The American Archivist*, *Archivaria*, and the *FIAT/IFTA Newsletter* among others.

EVALUATION: Record the number of relevant contextual mentions of the concept “universal preservation format” in professional literature through an Internet search for keywords “universal preservation format” and “universal storage container” or presented at conferences by persons external to the present Project.

III. Dissemination Plan

GOAL: To provide information that will encourage technology developers and archivists to incorporate universal access into their preservation formats.

OBJECTIVE: To disseminate all major Project findings.

NARRATIVE: Widespread dissemination of Project findings, especially the Recommended Practice, is critical to achieving its goals. The value of the Recommended Practice is twofold: (a) it raises awareness of the need for a Universal Preservation Format and (b) it provides specific technical information to encourage the creation of a UPF. Dissemination routes will utilize the connections already in existence between staff and their membership organizations.

ACTIVITIES

III.a Disseminate Recommended Practice.

Technique:

- i Post Recommended Practice on WGBH Online (WGBH’s World Wide Web site located at <http://www.wgbh.org>) and other relevant listservs and newsgroups and invite commentary and feedback.
- ii Send one copy of the Recommended Practice to each of the Project staffs’ membership organizations.
- iii Send one copy of the Recommended Practice (minimum of 25 total) to targeted members within technology and archival groups, including the Society of American Archivists, Association of Moving Image Archivists,

International Federation of Television Archivists, American Library Association, and the Commission on Preservation and Access.

- iv Send one copy of the Recommended Practice to SMPTE for adoption.

III.b Promote Project findings.

Technique:

- i Present Project findings at appropriate professional conferences. In order to encourage cross-discipline cooperation, the Project Director (a technology specialist) and the Project Co-Director (an archivist) will co-present at the IMA Annual Conference and the SMPTE Annual Conference. The Project Director will also present at the AMIA conference in years one and two and the Federation of International Television Archives (FIAT) in year two. (See Activity II.b.i.)
- ii Distribute 100 letters (in electronic and/or paper form) describing the Project to groups involved with preservation or universal format issues and provide a telephone number to call in order to request the Recommended Practice.

EVALUATION: Evaluation will be based on (a) subjective commentary and feedback on Recommended Practice through WGBH Online and professional contacts; and (b) the number of subsequent requests for the Recommended Practice.

Personnel

The Universal Preservation Format Project relies upon the combined expertise of WGBH Department of Applied Technology and the Media Archives and Preservation Center (MAPC) staff. (See Appendix B, Vitae, Job Descriptions and Recruitment Plans.)

Project Director, Dave MacCarn (25%), is the Chief Technologist for the WGBH Educational Foundation. He is currently responsible for long term planning, investment and adoption of new technologies for use in production, post-production, interactive system, and accessible media as well as business systems. He brings to the Project a vast amount of technical expertise and familiarity with technical issues in both the commercial and noncommercial spheres. Mr. MacCarn will be responsible for meeting the Project's overall goals and objectives, and jointly supervising the Project Coordinator. Specifically, the Project Director is responsible for the following Project Activities:

- I.b Analyze practices necessary for the creation of a Universal Preservation Format.
- I.c Draft final Recommended Practice.

- II.a Advocate the need for a Universal Preservation Format at selected working group committee meetings
- II.b Advocate the need for a Universal Preservation Format at selected professional conferences.
- II.c Advocate the need for a Universal Preservation Format through professional literature.
- III.b Promote Project findings.

In addition, the Project Director is responsible for all evaluation activities and for producing the Project's final report.

Project Co-Director, Mary Ide (20%), is the Director of the WGBH Media Archives and Preservation Center. She is in charge of long-term planning and developing and daily operations of the MAPC, which serves the business and production needs of all administrative and program series at WGBH. She brings to the Project her many years of experience with archival and preservation issues. Ms. Ide will be responsible for the following Project Activities:

- I.b Analyze practices necessary for the creation of a Universal Preservation Format.
- II.a Advocate the need for a Universal Preservation Format at selected working group committee meetings
- II.b Advocate the need for a Universal Preservation Format at selected professional conferences.
- II.c Advocate the need for a Universal Preservation Format through professional literature.
- III.b Promote Project findings.

In addition, the Project Co-Director, together with the Project Director, will hire and jointly supervise a **Project Coordinator**.

A **Project Coordinator** (TBA, 50%) will be hired prior to the start of the Project to assist the Director and Co-Director in fulfilling their Project responsibilities. He or she will have an MIS or MS degree with experience in handling technical issues in an archival setting. A major component of this position will be the analysis and presentation of research findings to Project staff. Specifically, the Project Coordinator will be responsible for conducting literature searches, identifying and contacting appropriate technology developers and users, coordinating feedback from archival conferences and working groups, monitoring listserv discussions, compiling and writing up research findings, and disseminating Project findings.

Recruiting for the position of Project Coordinator will consist of employment notices in at least eight appropriate employment recruiting bulletins and newsletters for archivists and technical information specialists. Post-doctoral candidates will also be considered for this position. (See Appendix B, Vitae, Job Descriptions and Recruitment Plans.)

Review Group

The Review Group is composed of sixteen (16) experts in the fields of technology and archives, carefully selected to represent a broad range of people working on similar issues. All Review Group members have agreed to participate in and review Project activities.

Greg Clukey, Director of Business Development, Avid Technology
Grover Crisp, Asset Manager, Sony Pictures Entertainment, Inc.
Dr. Anne Gilliland-Swetland, Assistant Professor, University of California at Los Angeles
Barbara Humphries, Motion Picture, Broadcasting and Recorded Sound Division, Library of Congress
Joel Kanoff, Director of Video Services, ABC News
Dr. Richard Kesner, Chief Information Officer, Babson College
James Kutzner, Vice President Operations and Engineering, KTCA St. Paul
Rob Lippincott, Vice President Content & Publishing Services, AT&T Interchange Online Network
Jim Lindner, President, Vidipax
William Miller, Vice President Engineering, SMPTE
William Murphy, Director, Nontext Archives Division, National Archives & Records Commission
William O'Farrell, Chief, Audio-Visual Copying, National Archives of Canada
Eric Pohl, Principal Engineer Recording Systems, NBC Network
Mark Richer, Executive Director, Advanced Television Systems Committee
Richard Stumpf, Senior Vice President Engineering and Development, MCA/Universal Studios
Bonnie Wilson, Curator, Sound and Visual Collections, Minnesota Historical Society

Resources

The high quality of resources available to the Project through WGBH, the Review Group (see above) and the working groups will ensure optimal implementation of the Plan of Work.

WGBH

WGBH will serve as the technology and administrative hub of the Project to ensure proper and efficient administration of the Project. This Project will be housed in the WGBH's Media Archives and Preservation Center. MAPC staff have been managing the preservation of magnetic media materials for nearly 20 years; their combined expertise will be available to the Project. In addition, WGBH's state-of-the-art telecommunications systems will provide the Project with appropriate access to on-line resources.

Working Groups

Working Groups have been carefully selected to represent a variety of perspectives on electronic records. Project staff participate in working group meetings to advocate for the need for a UPF. Each working group will be encouraged to discuss and analyze the Recommended Practice, as drafted by the Project Director, for a UPF. It is anticipated that Project staff will need to present

the UPF concept personally in order to provoke thoughtful discussion. Frequent exchanges of information with interested working group members will also be critical to maintaining a high level of analysis.

Society for Motion Picture and Television Engineers (SMPTE), Study Group on User Requirements for Automated Storage and Retrieval (V16.09) This Study Group meets every 6 to 8 weeks in different locations across the United States and Canada to document user requirements for future automated storage and retrieval systems employed in the archiving and use of audiovisual programs and related information. The study group will cover all areas of new archiving systems, including:

- library management systems
- browsing facilities
- automated extended term archival storage
- networking to production and playback disk servers
- exchange of library management data
- storage media

Other working group members include representatives from Broadcast Television Systems, Lightworks, Tektronix, Sony, Panasonic, Eastman Kodak, and NBC.

Interactive Multimedia Association (IMA), Compatibility Project—Architecture Technical Working Group. This group meets every 6 to 8 weeks in different locations across the United States to discuss data exchange and recently released a Recommended Practice for Data Exchange. Supporters include Hewlett-Packard Company, IBM Corporation, Intel Corporation and Sun Microsystems, Inc.

Open Media Framework (OMF) Group. Open Media Framework Interchange (OMFI) is a standard format for the interchange of digital media data among heterogeneous platforms. Development of the Open Media Framework Interchange is the result of the cooperative efforts of many industry and standards partners and Avid Technology, Inc. Working group members meet 3 to 6 times a year in different locations across the United States. Other working group supporters include Digital Equipment Corporation, Apple Computer, Inc. and AT&T Bell Labs.

Association of Moving Image Archivists (AMIA) Preservation Committee. The Association of Moving Image Archivists (AMIA) is a professional association of nearly 300 moving image archivists. The AMIA was established to advance the field of moving image

archives by fostering cooperation among individuals concerned with the collection, preservation, exhibition and use of moving image materials. Specific objectives include promoting professional standards and practices for moving image archival materials. The Preservation Committee meets once a year (in conjunction with the AMIA annual conference) to discuss issues concerning the preservation of moving image materials.

Society of American Archivists (SAA) Preservation Section. Established in 1936, the Society of American Archivists is the nation's oldest and largest professional association for archivists. SAA includes more than 3,900 individual and institutional members, representing all geographic regions of the United States and 30 countries. The SAA Preservation Section is concerned with the problems presented by the deterioration, preservation, and restoration of archival materials. The Preservation Section meets once a year (in conjunction with the SAA annual conference) to discuss preservation and restoration issues.

American Library Association (ALA) Video Round Table. The American Library Association is the oldest and largest library association in the world. The ALA represent all types of libraries and advocates for the people of the United States to achieve and maintain high-quality library and information services. The ALA Video Roundtable promotes unique fields of librarianship outside the scope of ALA divisions. The Video Roundtable meets twice a year (in conjunction with the ALA mid-winter and summer meetings).

International Federation of Television Archivists (FIAT) Technical Commission. The International Federation of Television Archives has a world-wide membership, mainly of national and commercial broadcasters but also national and independent archives. The Technical Commission is composed of 10 members who meet once a year (in conjunction with the FIAT annual conference) to discuss preservation and restoration issues.

Prior Support

In 1994, the WGBH Media Archives and Preservation Center received a grant of \$48,790 from the National Historical Publications and Records Commission [grant number 94-0096]. The grant supported a Project to gain intellectual control over the institutional records of the Lowell Institute Cooperative Broadcasting Council (LICBC) and the WGBH Educational Foundation. The Project resulted in a computer-generated “Guide to the Administrative Records of the Lowell Institute Cooperative Broadcasting Council and WGBH Educational Foundation, 1945-1994 (1951-1991).”

Timeline

Activity Name	1997												1998											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
I.a. Gather information on current preservation formats.	▶																							
I.b. Analyze practices necessary for the creation of a Universal Preservation Format.						▶																		
I.b.i - iv. Distribute suggested Recommended Practices					◆						◆						◆							
I.c. Draft final Recommend Practice																					◆			
II. Advocate the need for a Universal Preservation Format	▶																							
II.a At working group meetings	▶																							
II.b. At professional conferences																								
II.c. Through professional literature																								
III.a. Disseminate Recommended Practice																								
III.b. Promote Project findings																								
Final Project Evaluation																							◆	

PRODUCTS, STANDARDS AND COPYRIGHT

Project activities will result in one product to be disseminated, the Recommended Practice, which will include a self-addressed card (or, in the case of Web readers, an email address) that will encourage technology manufacturers to identify themselves as “supporters” of the Recommended Practice. In addition, the Recommended Practice will be submitted to SMPTE for adoption as an industry standard. (See Dissemination Plan, pp. 13 - 14.) The paper will be placed in the public domain. In addition, an article describing Project findings will be submitted to professional journals. (See Raising Awareness, pp. 11 - 13.)

EVALUATION OF RESULTS

The National Historical Publications and Records Commission seeks to effect progress in achieving “the Preservation and Use of Original Source Material.” The **Universal Preservation Format Project** has a high potential to achieve that goal. Formal evaluation of the Project's success will concentrate on two areas:

- **Progress in achieving Project objectives.**
- **Effectiveness in achieving progress in the preservation and use of original source material.**

PROGRESS IN ACHIEVING PROJECT OBJECTIVES

Performance evaluation will be based on meeting objectives and evaluation of each component, as outlined in the previous section. The Final Report will include a formal procedural assessment of Project Activities.

EFFECTIVENESS IN ACHIEVING PROGRESS

Project effectiveness evaluation will have both a qualitative and a quantitative aspect.

Qualitative evaluation of the potential effect of the Project will rely upon the solicited commentary and feedback received from the external Review Group, composed of representatives from the fields of technology and archives regarding the Recommended Practice (See Personnel, p. 16.) Internal qualitative evaluation will be noted by Project staff in their subjective evaluations in the Final Report. The Project's long-term effectiveness will be best judged by the adoption (or rejection) of a Universal Preservation Format as an industry standard.

Quantitative evaluation will consider the number of requests for the Project's Recommended Practice as well as the number of technology manufacturers who identify themselves as supporters of a Universal Preservation Format.