

## **Avalon Media System: Integrating audiovisual collections with research, digital preservation, and a sustainable developer community**

Northwestern University Library, in partnership with Indiana University Libraries, requests \$962,770 from IMLS for a two-year National Digital Platform project grant to bolster sustainability of the Avalon Media System open source audio and video access repository system while increasing its value to current and future library adopters, to be accompanied by \$967,954 in cost sharing.

### **Statement of National Need**

Avalon is an open source software package for managing and providing access to large collections of audio and video materials. Planned, designed, and built with support from prior grants from IMLS and the Andrew W. Mellon Foundation, Avalon provides to library, archives, and cultural heritage institutions what existing commercial, open source media systems, and digital repository platforms do not adequately address: an affordable, community driven, preservation ready AV delivery system.

Avalon has been fully implemented at five institutions, and a number of other institutions are in various stages of evaluating, testing, and putting Avalon into production. Based on our market research, we have seen that many institutions have needs for media access but lack the resources to locally stand up an instance of a media-focused repository system such as Avalon. In addition, institutions want to be able to integrate more sophisticated AV functionality into existing repository systems such as institutional and research data repositories alongside other content formats. These findings have been validated by the IMLS-supported Hydra-in-a-Box project's recent findings that time-based media access is a major need of libraries for repository systems.

### **Project Design**

The aim of this project is to increase adoption of Avalon within the library and archives community by enhancing the value proposition of Avalon and carrying out work to help ensure sustainability of the system going forward:

1. **Integrate Avalon within the Hydra community.** The Hydra technical stack and community have both undergone significant changes since Avalon development began in 2011. We will adapt Avalon to make use of the current Hydra stack and will engage members of the Hydra community beyond Indiana University (IU) and Northwestern University (NU) in development through *community sprints*, a process that has proven successful in other Hydra projects such as Sufia. We will also increase the modularity of Avalon so that its components can be more easily integrated into other Hydra-based repository systems, including Sufia and Hydra-in-a-Box (HyBox), to provide time-based media access. This work will require comprehensive community organization and outreach as well as strong partnerships with other major Hydra projects, particularly HyBox, and with the growing Hydra vendor community, including Data Curation Experts (DCE) and Cottage Labs. By leveraging the Hydra developer community and enabling use of Avalon components within existing repository systems, we expect to both increase the adoption of and improve the sustainability of Avalon's code.
2. **Implement a cloud-hosted Software-as-a-Service version of Avalon.** We will work with Lyris and DuraSpace on the establishment of a hosted SaaS offering for Avalon as well as reach out to potential new hosting partners such as DCE. We will conduct a second round of SaaS pilots to help provide true cost modeling for Avalon as a cloud based service and provide an opportunity to work through partnership modeling with both organizations, one or both of which we expect to offer cloud based Avalon services to their constituents at the end of the pilot, revenues from which are anticipated to help to sustain future Avalon development and maintenance.
3. **Connect Avalon to media preservation systems and workflows.** Libraries and archives with unique time-based media collections are increasingly focused on the question of preservation. While there are aspects of Avalon that are preservation ready, we will connect Avalon to long-term digital preservation solutions like DPN, DuraCloud Vault, Chronopolis, and APTrust, and improve interoperability with workflow and management tools such as Archivematica and HydraDAM2 in order to provide a complete AV preservation and access platform. This will increase adoption of Avalon amongst institutions undertaking a media preservation program.

4. **Enable interoperability with scholarly tools.** A number of projects have developed tools for scholarly annotation of audio and video media, but they are generally tied to specific disciplines and delivery systems. Over the course of this grant, the Avalon technical team will take a leadership role with the International Image Interoperability Framework (IIIF) by contributing to the creation of an AV interoperability spec and providing a demonstration implementation, based in part on the findings of Avalon's current Mellon-supported study of humanities researcher needs for audio and video access. Additionally, we will work with others in the Hydra community on implementation of rightsstatements.org workflows into Avalon.

The project will be led by current Avalon project directors Evviva Weinraub of NU (as Project Director) and Jon Dunn of IU (as Project Director for the IU subcontract), in collaboration with an existing cross-institutional project team of librarians and staff from IU and NU serving in roles as software developers, product owners, metadata analysts, and user experience designers. This team will be augmented by three positions to be funded from the grant: 1) An *Outreach and Community Manager* will build off and expand the existing Hydra community structure to develop a robust Avalon user community. In addition, this role will work on the creation of a sustainability plan for Avalon as a SaaS, training material, and documentation to make implementation, and community participation easier. 2) An *Avalon Community Technical Lead* will build and expand on the work of existing team members, to coordinate community technical efforts around the design and development of Avalon. They will serve as the project's lead on IIIF AV spec creation and implementation, as well as coordinate the integration of Avalon AV functionality into HyBox, integration of Avalon with the current Hydra stack (including alignment with Curation Concerns), and integration with preservation and archival platforms. 3) A *DevOps Engineer* will work with Lyrasis and DuraSpace on technical support for the SaaS pilot, packaging, and other related activities.

The project will follow a successful agile Scrum process that has been used by the Avalon team since 2012 to manage the diverse goals of the project. Engagement with the Hydra community, Avalon adopters, and SaaS and preservation partners will mainly take place online, but travel to conferences and meetings will be required for outreach to and engagement with the Hydra and broader repository, library, and media archives communities. This travel will include attendance at conferences such as Open Repositories, Association of Moving Image Archivists and the Digital Library Federation Forum to present on the work of the project in order to increase awareness and encourage adoption and participation in meetings and conferences of relevant collaborative communities, including Hydra and IIIF.

### **National Impact**

This project will deliver national impact by addressing the following IMLS performance goals:

1. *Broaden access and expand use of the Nation's content and collections*, by making it easier for libraries to provide online access to digitize and born-digital audio and video collections.
2. *Improve preservation, conservation, and care of the Nation's content and collections*, by connecting a robust audio/video access platform to national digital preservation infrastructure.

The functional enhancements to Avalon in the areas of preservation and interoperability with scholarly tools and the support for sustainability generated through SaaS implementation and greater development engagement within the Hydra community will improve the ability of libraries—both existing Avalon users and new adopters—to integrate robust AV media delivery for their collections into their digital collections practices.

### **Budget**

The total cost of the project is \$1,930,724, of which \$962,770 is requested from IMLS, \$374,170 will be cost shared by NU, and \$593,784 will be cost shared by IU. \$135,249 of the requested funds will be used for salaries and wages; \$35,154 for fringe benefits; \$30,000 for travel; \$518,022 for a subaward to IU; \$120,000 for external contracts; and \$124,345 for indirect costs at a rate of 36%. Funds requested from IMLS for the IU subaward will cover \$259,109 for salaries and wages, \$103,333 for fringe benefits, \$30,000 for travel, and \$125,581 for indirect costs at a rate of 32%.

Existing Avalon project staff at IU and NU will provide much needed background, expertise, and developer time toward this project and will be responsible for the bulk of the cost sharing.