**HydraDAM2: Extending Fedora 4 and Hydra for Media Preservation**

**Project Description**

WGBH Media Library and Archives and the Indiana University Libraries propose to conduct a two-year project (January 1, 2015 – December 31, 2016) to extend the HydraDAM digital asset management system to be able to serve as a digital preservation repository for time-based media collections at a wide range of institutions using multiple storage strategies. This new system will be based on the open source Hydra repository application framework and will utilize the emerging Fedora 4.0 digital repository architecture.

Time-based media collections are held by a wide range of cultural institutions, including libraries, archives, and public broadcasters, and are seeing increased use in the humanities across a wide range of disciplines for both research and teaching. Collections of born-digital materials are being created and acquired on an ongoing basis, and digitization of analog formats is increasing as institutions confront issues of degradation and media obsolescence. These institutions need flexible, reliable, manageable solutions to store and preserve their digital audio and video files for the long term.

Audio and video files are significantly bigger than most other files that libraries and archives currently manage in digital repository systems, and as a result they need to be stored and handled differently. The management, discoverability, and preservation of large files and complex objects is difficult. Fedora 4, the latest iteration of the Fedora repository system, is built on a new architecture that promises to have capabilities to better support management and preservation of large files.

In this project, we will:
1) Extend the HydraDAM digital asset management system to operate on Fedora 4
2) Develop Fedora 4 content models for audio and video preservation objects, including descriptive, structural, and digital provenance metadata, based on current standards and best practices and utilizing new features in Fedora 4 for storage and indexing of RDF
3) Implement support in HydraDAM for two different storage models, appropriate to different types of institutions:
    a. direct management of media files stored on spinning disk or on tape in a hierarchical storage management (HSM) system; and
    b. indirect management and tracking of media files stored offline on LTO tapes
4) Integrate HydraDAM into preservation workflows that feed access systems at IU (Avalon) and WGBH (OpenVault) and conduct testing of large files and high-throughput workflows
5) Document and disseminate information about our implementation and experience to the library, archive, digital repository, and audiovisual preservation communities

All software developed by the project will be released as open source under a non-viral open source license, and all documentation will be released under a Creative Commons license.

Both WGBH and IU bring substantial experience in repositories and digital audio and video media to this project. Most recently, WGBH developed the HydraDAM system with support from NEH, and IU is currently working with Northwestern University, with support from IMLS, to develop the Avalon Media System, a Hydra-based open source software system that enables libraries and archives to more easily provide online access to audio and video collections.