

## THE FEDERAL SCIENCE REPOSITORY SERVICE

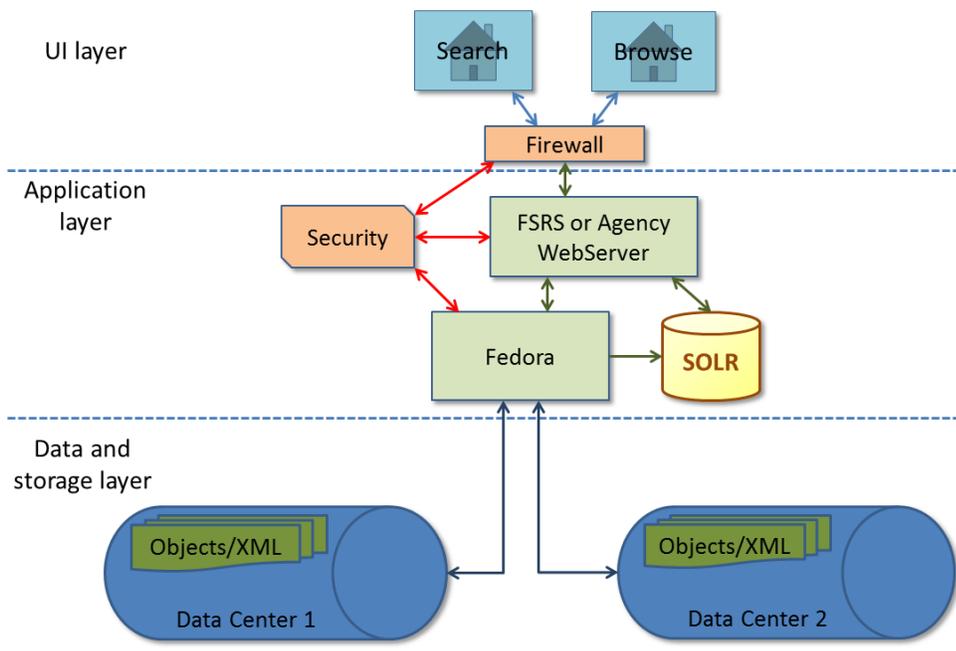
Collections of scientific and technical documents, images, videos and other content represent the mission and work of an agency. To help preserve these collections, the National Technical Information Service (NTIS) of the U.S. Department of Commerce, and Information International Associates, Inc. (IIa), a woman-owned business in Oak Ridge, Tennessee, formed a public-private partnership to develop a searchable, digital Federal Science Repository Service (FSRS). The FSRS provides a standards-based infrastructure and services for developing for agencies Repositories that serves as distinct entryways to content.

*A repository service based on a Fedora/SOLR framework provides agencies the tools for managing and distributing diverse resources.*

The FSRS provides:

- Storage and preservation of diverse resources
- Ingestion of distributed content
- Access control customized to agency requirements
- A robust interface with advanced metadata and full text search, filtering, and full-text and media display
- Interfaces tailored for each agency
- Fast development and cost-sharing
- Interoperability among Repositories when requested
- Collaborative development environment, where agencies become partners

**Figure 1: Current Stacked Architecture of the FSRS**



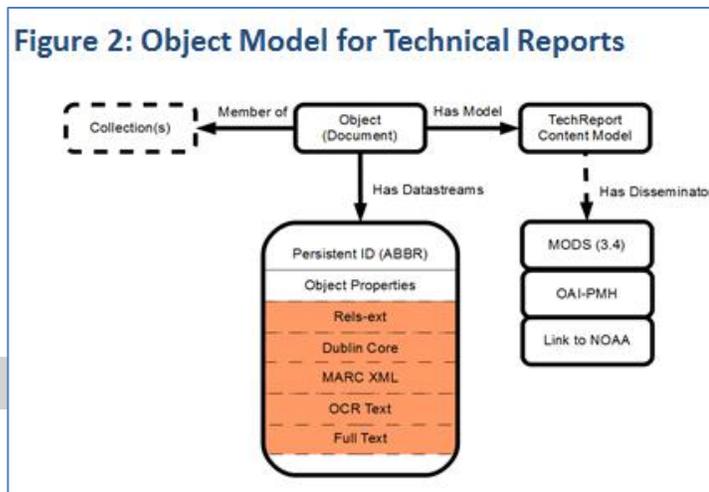
In order to support these functions, a common, underlying framework was needed that was also modular and flexible (Fig. 1). Fedora, an open-source data management software package, was chosen as the basis for the framework, with updates being regularly incorporated.

Other technical specifications:

- PHP interface interacts with Fedora via the REST API
- Object manipulation via the Fedora command line or Fedora Web Administrator
- Solr search engine with a custom schema adjusted for each agency
- “Core” metadata schema mapped to the MODS standard allows metadata extensions
- Additional, independent components for authentication, automatic updating, visualization, etc.

All metadata formats are kept as part of the object’s datastreams (Fig. 2), including the original agency format, allowing flexibility and benefits in preservation and data management. The Saxon XSLT processor service and the Fedora Content Model are utilized to quickly create flexible dissemination packages. This allows agencies to:

- Tailor their Repository interface
- Link related resources
- Designate content to be shared with other FSRS Repositories, such as the [National Technical Reports Library](http://www.ntis.gov/products/ntrl/) (<http://www.ntis.gov/products/ntrl/>)
- Create cross-agency collections, such as [NOAA's Deepwater Horizon Repository](http://noaa.ntis.gov) ([noaa.ntis.gov](http://noaa.ntis.gov))
- Provide content for Web services and for federated searches such as [Science.gov](http://www.science.gov) ([www.science.gov](http://www.science.gov))



The FSRS is based on open-source approaches, is durable against technological changes, and is flexible enough to support broad and varied uses, increasing access to the Federal Government’s data and information.

The National Technical Information Service (NTIS) mission is to promote progress by serving as the U.S. Federal Government’s central means of making scientific and cutting-edge information perpetually and widely available. NTIS helps agencies increase dissemination to a broad Federal, industry and public audience through its Federal Science Repository Service (FSRS), through content management services such as legacy digitization and quality assurance, and through global e-commerce channels. NTIS has the authority under Section 3704(b) of Title 15, United States Code, to enter into business arrangements for improving information access. Visit [www.ntis.gov](http://www.ntis.gov) to learn about the services NTIS offers.

Information International Associates, Inc. (IIA) is an ISO 9001:2008 registered information management company that for 24 years has served a variety of Federal, civilian, military, and intelligence agencies, as well as international and private sector organizations. IIA specialists have a breadth of experience in information science, knowledge management and systems. Please visit [www.iiaweb.com](http://www.iiaweb.com), or contact Chelsea Crawford, Communications ([ccrawford@iiaweb.com](mailto:ccrawford@iiaweb.com)).

For questions about the Federal Science Repository Service, please contact: Wayne Strickland, Manager Office of Product & Program Management [wstrickland@ntis.gov](mailto:wstrickland@ntis.gov).