Challenges of the New Millennium: ERICA, a Solution for PNNL

Pam Novak, Darlene Varley and Donna Rassat
Pacific Northwest National Laboratory
Richland, Washington 99352

Abstract

Scientific and Technical Information (STI) is the key product of the Pacific Northwest National Laboratory (PNNL) and one of its greatest assets. In the past, this information has been challenging to manage and leverage to its fullest potential. Use of the Web and lower cost electronic storage devices plus commercially available text search tools have created opportunities for sharing and managing these resources for both internal and external users. A consolidation of electronic document management processes in the Laboratory has been designed to capture information electronically. This new system, which we call the Electronic Records and Information Capture Architecture (ERICA), will reduce redundancy of data entry, increase our productivity, and reduce costs for the Lab.

DOE's strategy for the "new millennium" is to move from a paper-based, centralized repository to a distributed electronic access system. ERICA will help PNNL meet this exciting challenge.

What Exactly Is ERICA?

The ERICA system will integrate the STI and records databases and repositories currently being created and managed at the individual workstation and Laboratory level by staff in Communications, Quality, Contracts, and the RD organizations. ERICA will support PNNL and client requirements to

- capture scientific and technical information for easy sharing and reuse internally and enable appropriate client and public access externally
- enhance records management tools; archive electronic records electronically
- streamline the information release process
- provide electronic publishing and document management capabilities that meet DOE requirements
- upload metadata fields to DOE to serve as required announcement reports
- provide metadata and full-text search capabilities for staff against the Lab's repository of electronic records and STI
- automate and integrate scientific and technical information peer review (routing and signature) processes.

What Benefits Are Expected?

ERICA will integrate and link critical Scientific and Technical Information and Records databases and repositories that exist at the workstation level in organizations throughout the Laboratory. Through ERICA, we will fill in the gaps where vital information is not readily accessible. ERICA will allow PNNL organizations to have more control over the disposition of their records and documents. ERICA can reduce redundant data entry in the field and, in some cases, eliminate work in information review and release, document transmittal, preparation of Records Inventory Disposition forms, and preparation of Records Transfer and Data Input forms.

ERICA is a critical step in rectifying current non-compliance with current Federal and client records requirements, streamlining work processes, positioning PNNL to comply with DOE's plan to deliver published STI electronically, and strengthening our business decision-making processes.

The proposed ERICA system would increase staff productivity, particularly for
- research staff wanting to know what related work is being done by their colleagues,
- product, sector, and line managers who look for information that helps them make and support business decisions.

For example, at this time, it can take days for staff to obtain printed copies of electronic records from storage, and it is difficult for staff to learn about ongoing research before external publication. With ERICA, the Lab will be able to search and retrieve the records, STI, and intellectual property (IP) in ERICA from their own workstations in minutes. ERICA will also contribute to the Lab's reputation for scientific and technical excellence, in that visitors to our external website will be able to search ERICA's repository of published information. Once ERICA is online, new STI publications will be available. Adding publications to ERICA will not significantly increase the cost of publishing, so project budgets will not be negatively impacted. In fact, printing and distribution costs can be reduced. Implementing ERICA can also reduce future project labor and other costs associated with records storage by reducing the volume of printed records, and it can reduce the labor associated with multiple entry of the same information: once done is done.

How Does ERICA Work?

The system architecture has three fundamental parts: information capture and bridge, the electronic document repository, and an electronic record archive. The architecture of the system is based on the current PNNL environment and will comply with established standards for DOD and DOE electronic records management and the DOE Office of Scientific and Technical Information (OSTI) metadata standards and requirements.

ERICA will integrate existing PNNL application systems to streamline critical workflow processes. Existing systems and processes, in addition to commercially available tools, will be leveraged. ERICA will operate across a system of servers, some of which are owned and managed by Lab organizations or projects. In

other words, information does not have to reside on an "ERICA server" to be indexed by ERICA.

What Will the User See?

ERICA's interfaces for both data input and data retrieval will be Web-based. This presentation will demonstrate two of ERICA's user interfaces:

1) the information release online form
2) the publicly available listing of PNNL technical reports.

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