



**Thomas Jefferson National Accelerator Facility**  
**Institute for SRF Science and Technology**  
 Newport News, Virginia, USA

**A System for Managing Critical Knowledge for Accelerator Subsystems:**  
***Pansophy***\*

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**Abstract**

Accelerator development and construction projects often intentionally push the envelope of well-established technical performance and manageable complexity. In addition, the desire for efficient retention and exploitation of accumulated experience across the multi-decade life cycles of major installations calls for a robust, yet user-friendly knowledge management system.

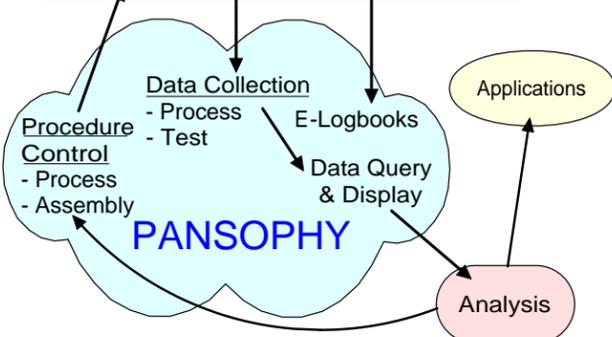
To meet these needs, we are presently deploying a new web-based system at Jefferson Lab: *Pansophy*. This system is a custom integration of several commercial software utilities, DocuShare™, ColdFusion™, Matlab™, Ingres™, and common desktop programs. Users of the system range from process managers, shop-floor technicians, test engineers, to after-the-fact data miners and operations staff.

- The system integrates:
- important QA elements of procedural control
  - automated data accumulation into a secured central database
  - prompt and reliable data query and retrieval
  - online analysis tools

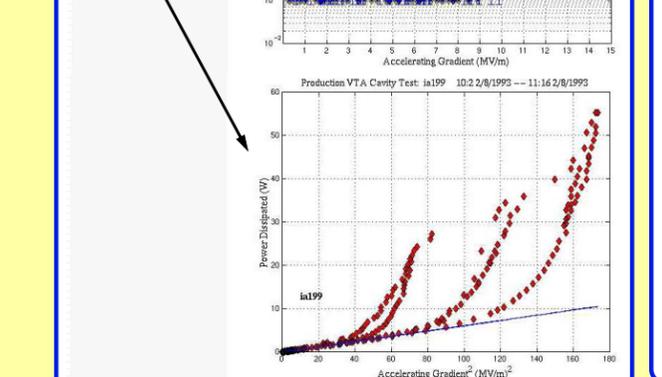
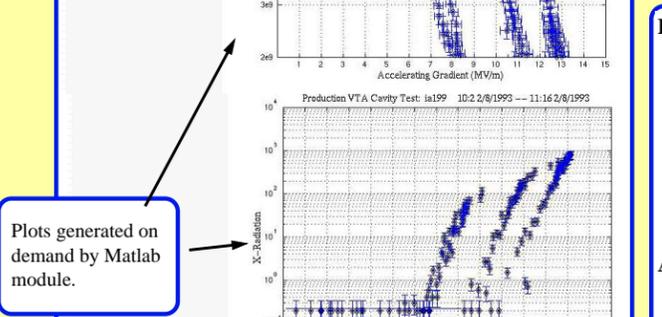
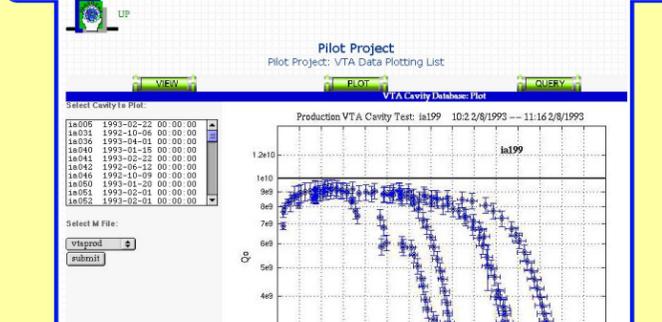
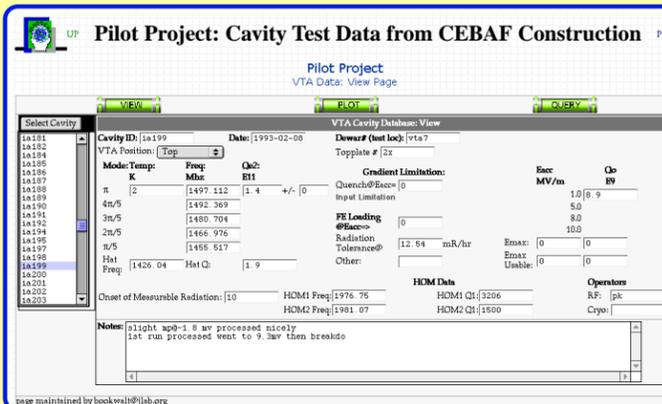
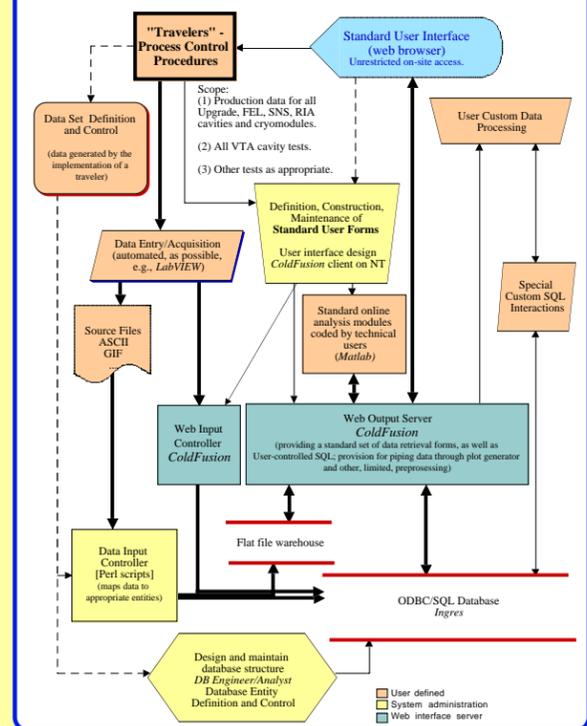
All access is via a web browser.

We present a system overview, completed pilot project, and implementation experience to date.

**Cryomodule Production & Testing**

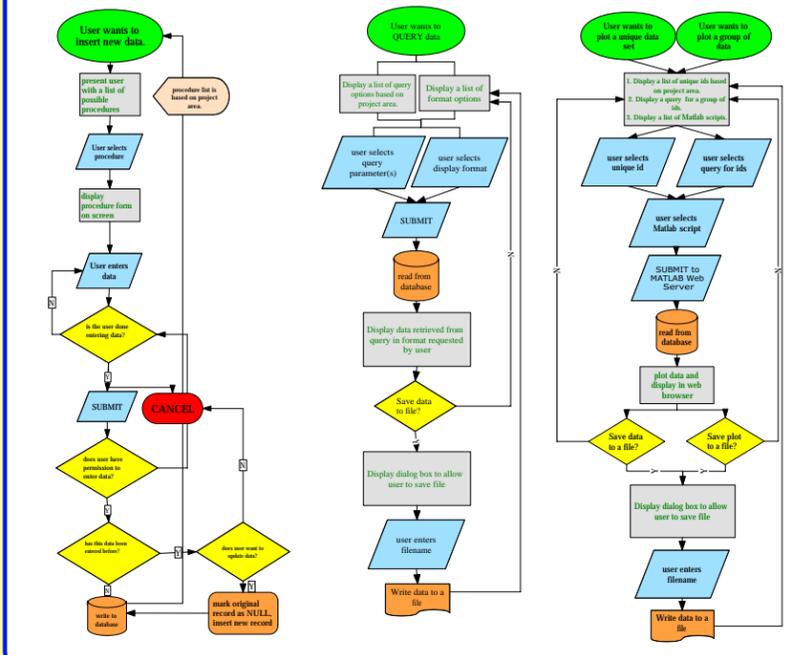


**The Pansophy System**

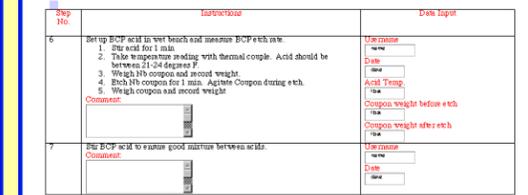


Plots generated on demand by Matlab module.

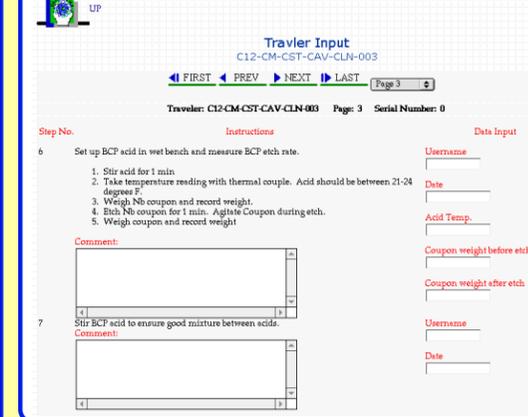
**Pansophy Process Flow Between User and Database**



**Page from MSWord version of Traveler**



**Auto-generated ColdFusion form served to browser**



**Summary**

The Institute of SRF Science and Technology at JLab is committed to the SNS project and the Upgrade of CEBAF. It also expects to contribute substantially to future SRF projects (RIA, FELs, ERLs, EIC, etc.).

*Pansophy* will play a crucial role in the success of these projects and in the on-going learning and refinement of understandings and techniques vital to SRF applications. The system must become an efficient tool for the significant variety of users.

To meet the substantial need with a small staff, we identified opportunities to exploit well-supported standards and commercial software packages.

- Adherence to industry standards (XML, TCP/IP, HTTP) means that our applications are portable. If a project goes out of Jefferson Lab to another laboratory, we can also package and ship the relevant information resources.
- By using readily available, and off-the-shelf packages (perl, C, DocuShare™, ColdFusion™, Visible Analyst™, Ingres™, Matlab™), we proceed with a powerful tool set and, with freedom from maintenance of our tools, able to focus on the user functionality required of our applications.
- We accepted the recommendations of in-house and local experts, especially the Jefferson Lab Computer Center, and have found their assistance to be invaluable. We also have very active local ColdFusion™ and perl user groups)

Copy available at:  
<http://srfsvr.jlab.org/PDFs/PanPosterPAC01.pdf>



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