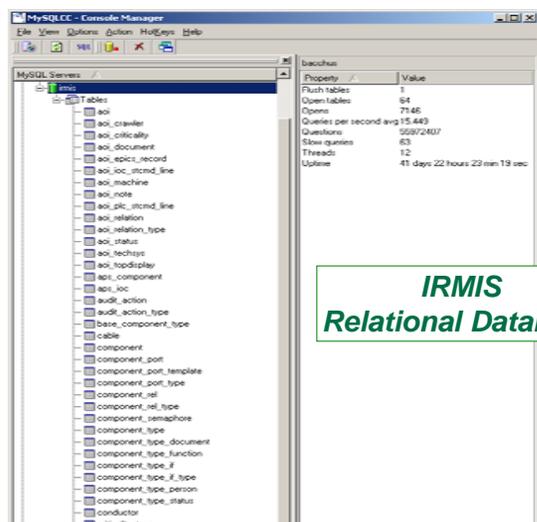
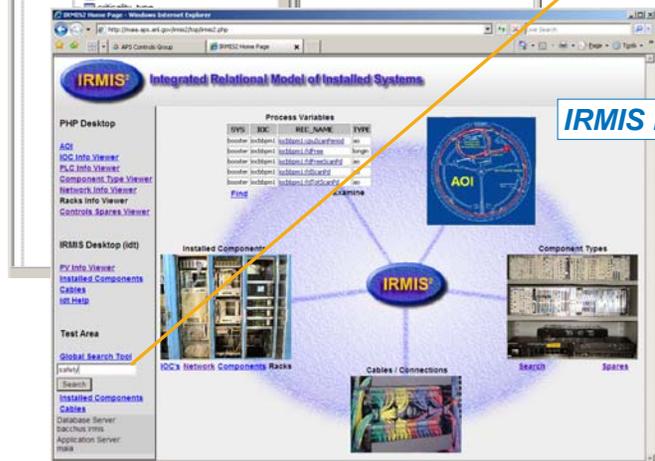


Global Search Tool for the Advanced Photon Source Integrated Relational Model of Installed Systems (IRMIS) Database*

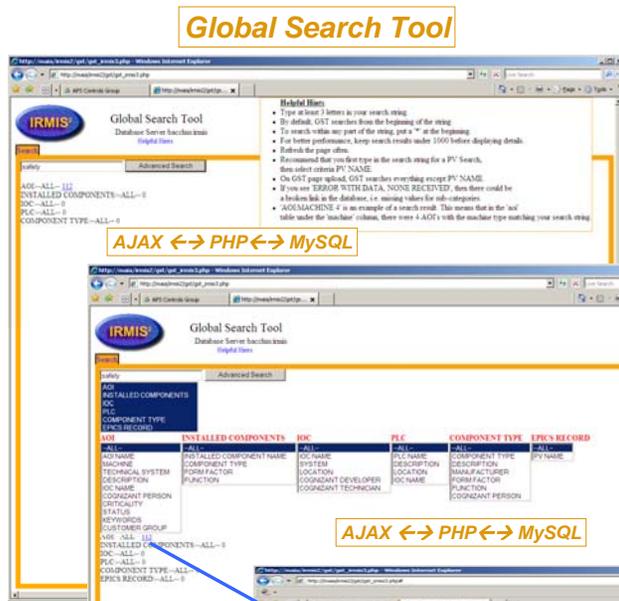
D. E. R. Quock[#], ANL, Argonne, IL 60439, U.S.A.
 M. B. Cianciarulo, Purdue University, West Lafayette, IN 46324, U.S.A.



IRMIS Relational Database



IRMIS Home Page



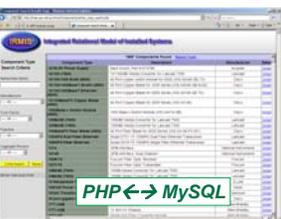
Global Search Tool

AJAX ↔ PHP ↔ MySQL

AJAX ↔ PHP ↔ MySQL

Abstract
 The Integrated Relational Model of Installed Systems (IRMIS) is a relational database tool that has been implemented at the Advanced Photon Source to maintain an updated account of approximately 600 control system software applications, 400,000 process variables, and 30,000 control system hardware components. To effectively display this large amount of control system information to operators and engineers, IRMIS was initially built with nine Web-based viewers: Applications Organizing Index, IOC, PLC, Component Type, Installed Components, Network, Controls Spares, Process Variables, and Cables. However, since each viewer is designed to provide details from only one major category of the control system, the necessity for a one-stop global search tool for the entire database became apparent. The user requirements for extremely fast database search time and ease of navigation through search results led to the choice of Asynchronous JavaScript and XML (AJAX) technology in the implementation of the IRMIS global search tool. Unique features of the global search tool include a two-tier level of displayed search results, and a database data integrity validation and reporting mechanism.

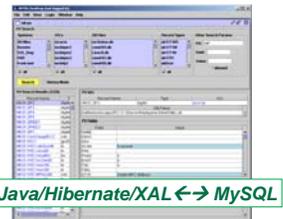
Global Search Tool Performance
Process Variables: Highest return of two minutes for detailed information on 7,794 matches
AOIs: Approximately 30 seconds to return detailed information on 681 matches
Installed Components: Approximately four seconds to return detailed information on 109 matches. (Comparison to Java/Hibernate/XAL search on Installed Components: 33 seconds to load display plus 2 seconds to find first occurrence of component in Controls hierarchy.)



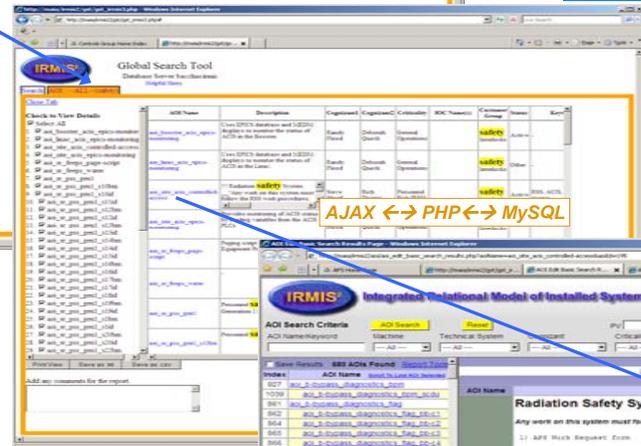
PHP ↔ MySQL



PHP ↔ MySQL



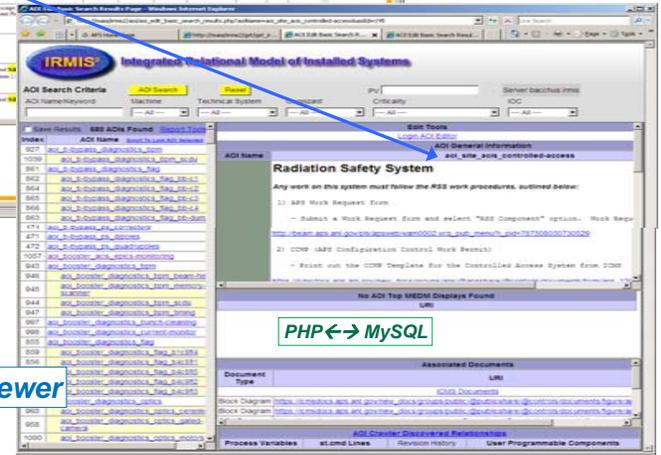
Java/Hibernate/XAL ↔ MySQL



AJAX ↔ PHP ↔ MySQL

IRMIS Viewers

IRMIS AOI Viewer



PHP ↔ MySQL

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[#]quock@aps.anl.gov