

SPring-8 User Portal

User Services Workshop Three-Way Meeting

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Topics



- History of User Support System
- Problems of Former System
- Database Architecture of New System
- About Two User Portals
- Integrated User Management between SPring-8 and SACLA
- Future Plans



Our System History

- Web-based proposal submission system started in 2005.
 - User Portal website (2nd generation) started around the same time.
- We adopted FileMaker Server software as main database of first online system.
 - FileMaker is easy to use and less expensive than other commercial database software.
 - Users Office Staff can edit data and format layouts for print smoothly with FileMaker.

Former System Problems

- The number of proposals is increasing continuously.
 - Each term, almost half of users submit their proposals in the last day of the deadline.
 - Thus, the system was overloading at the last minute.
- Various proposal types were derived and closed after being launched, resulting in difficulty to maintain and extend the system.

Former System Problems

- Durability and throughput of backend database are inadequate for the present time.
 - FileMaker is easy to use, but...
- New XFEL facility called "SACLA" was built in the SPring-8 campus and started operation in FY 2011.
 - We need to support proposals including new features and requirements of SACLA.

We decided to restructure our system.

What kind of DB is the most appropriate?

- We sought for several database softwares suitable for our usage and environment.
- We consider adapting MySQL as core DB.
 - MySQL is a popular database software.
 - Many people use this database and develop several web services.
 - FileMaker ESS functions connected between MySQL and FileMaker transparently are available.

FileMaker vs MySQL



- Advantages of FM
 - Easy to use
 - Easy to revise
 - Easy to maintain
- Advantages of MySQL
 - High performance
 - Non-proprietary
 - Based on SQL syntax

- Disadvantages of FM
 - Low processing speed
 - Proprietary software
 - Closed architecture
- Disadvantages of MySQL
 - Setup is bothering
 - Config is complicated
 - SQL knowledge is required

Hybrid DBArchitecture

User can get good and stable performance through MySQL



Staff can access and edit MySQL through FileMaker interface

Merits of New Architecture

- Deriving from MySQL capability
 - Performance and stability of web applications are dramatically improved.
 - Efficiency and maintainability of web application programming are improved.
- Deriving from FileMaker capability
 - Staff are not conscious of difference between two databases.
 - Staff do not need to know SQL language.

About SACLA



• SACLA was built in the SPring-8 campus.



Requirements for SACLASS user management

- SPring-8 and SACLA users check in at the same Users Office and use common user cards.
 - SACLA Users Office is not independent from SPring-8 Users Office.
- Safety training history of each one needs to be shared between the two facilities.
 - It is not necessary for SACLA users to attend safety training again if he/she has done at SPring-8 in the same fiscal year and vice versa.

Policy of Development for SACLA user system

- Database are not separated between SPring-8 and SACLA.
 - User ID is assigned without distinction among SPring-8 and SACLA users.
- On the other hand, each user portals need to be assigned independent domain name (e.g., "spring8.or.jp" versus "xfel.jp".)
 - It can easily access to the URL, whenever user want to get information and apply for each facility.



We decided to make up SACLA user system improving the existing SPring-8 user system.

Two User Portals



We provide two websites for SPring-8 and SACLA users.

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SPring-8 User Information http://user.spring8.or.jp

SACLA User Information <u>http://sacla.xfel.jp</u>

How to deal with Each Facility Data on a Single System?

- Required information of user registration are common between two facilities.
 - Every user application is available for both facilities using single (unique) User ID.
- User can apply proposal for SPring-8 or SACLA from each User Portal.
 - Application forms of both facilities are standardized as much as possible.

Flow of Portal to My Page





Difference between SPring-8 and SACLA

• Some differences still remain, nevertheless we try to standardize as much as possible.

	SPring-8	SACLA	
Hours per shift	8h	l2h	
Available proposal types	I 5 types (Inc. staff only proposals)	3 types (Inc. staff only proposal)	
User Fee (Fixed fee)	¥10,300/shift	¥15,450/shift	

How to buffer such differences in the system?

- We implemented some converters for adapting SACLA experiment.
 - When user select SACLA proposal or required document, system override criteria dynamically (e.g. unit hours per shift.)
- Common information through all proposal types are defined as template, and particular input items are loaded and added when user chose SACLA proposal type.

Future Plans



- Server virtualization and migration to the cloud environment
 - Breakdown of physical hardware is inevitable, but periodical replacement is difficult because budget is limited.
 - If our applications could move to cloud, we do not need to be anxious about hardware maintenance.
 - But we have to consider how to guard security under the public network, too.

Future Plans



- Single sign-on over several SPring-8/SACLA network services
 - In the SPring-8/SACLA, we provide several services for each user.
 - For example, "Data repository service," "Wi-Fi service" in addition to our proposal submission system.
 - So far, user databases for authentication are separated from each service.
 - We are planning to introduce single signon system based on LDAP.

SPring-8 Users Office System Support Team Members

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Thank You