

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

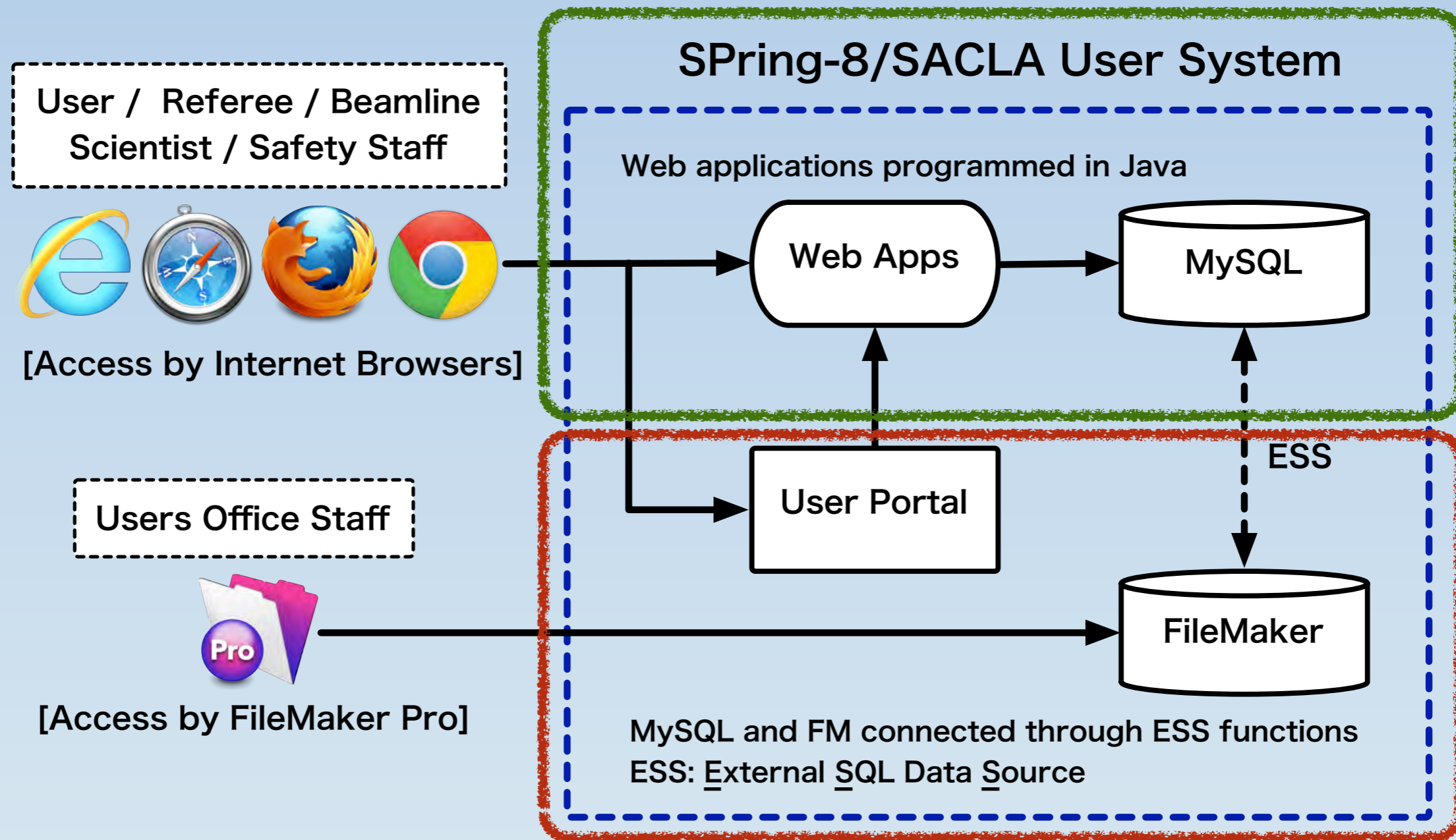
- ▶ Low processing speed
- ▶ Proprietary software
- ▶ Closed architecture

- Disadvantages of MySQL

- ▶ Setup is bothering
- ▶ Config is complicated
- ▶ SQL knowledge is required

Hybrid DB Architecture

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.



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Requirements for SACLA 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 SACL A user system

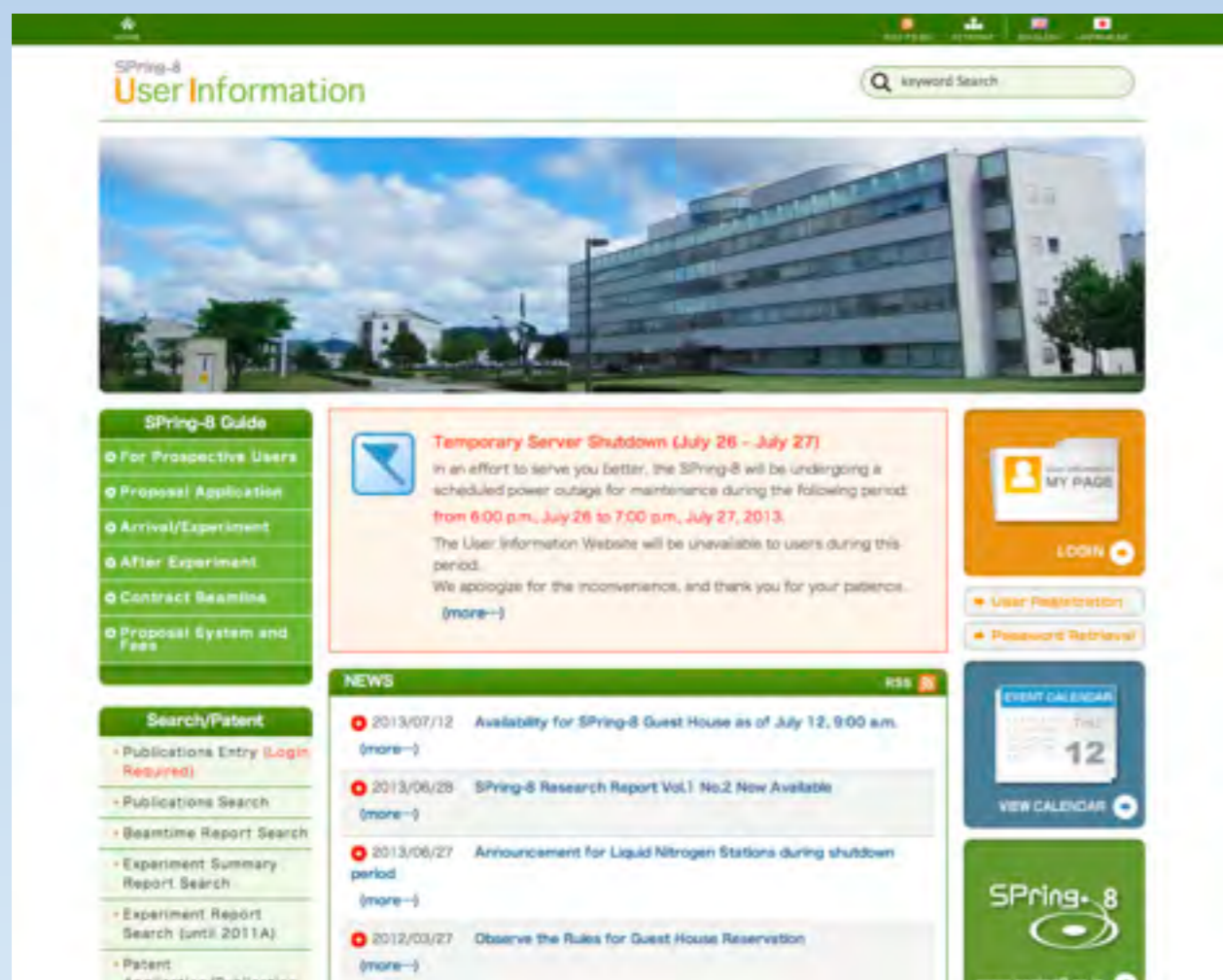
- Database are not separated between SPring-8 and SACL A.
 - ▶ User ID is assigned without distinction among SPring-8 and SACL A users.
- On the other hand, each user portals need to be assigned independent domain name (e.g., “spring8.or.jp” versus “xfel.jp”.)
 - ▶ It can easily access to the URL, whenever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

Policy of Development for SACLA user system

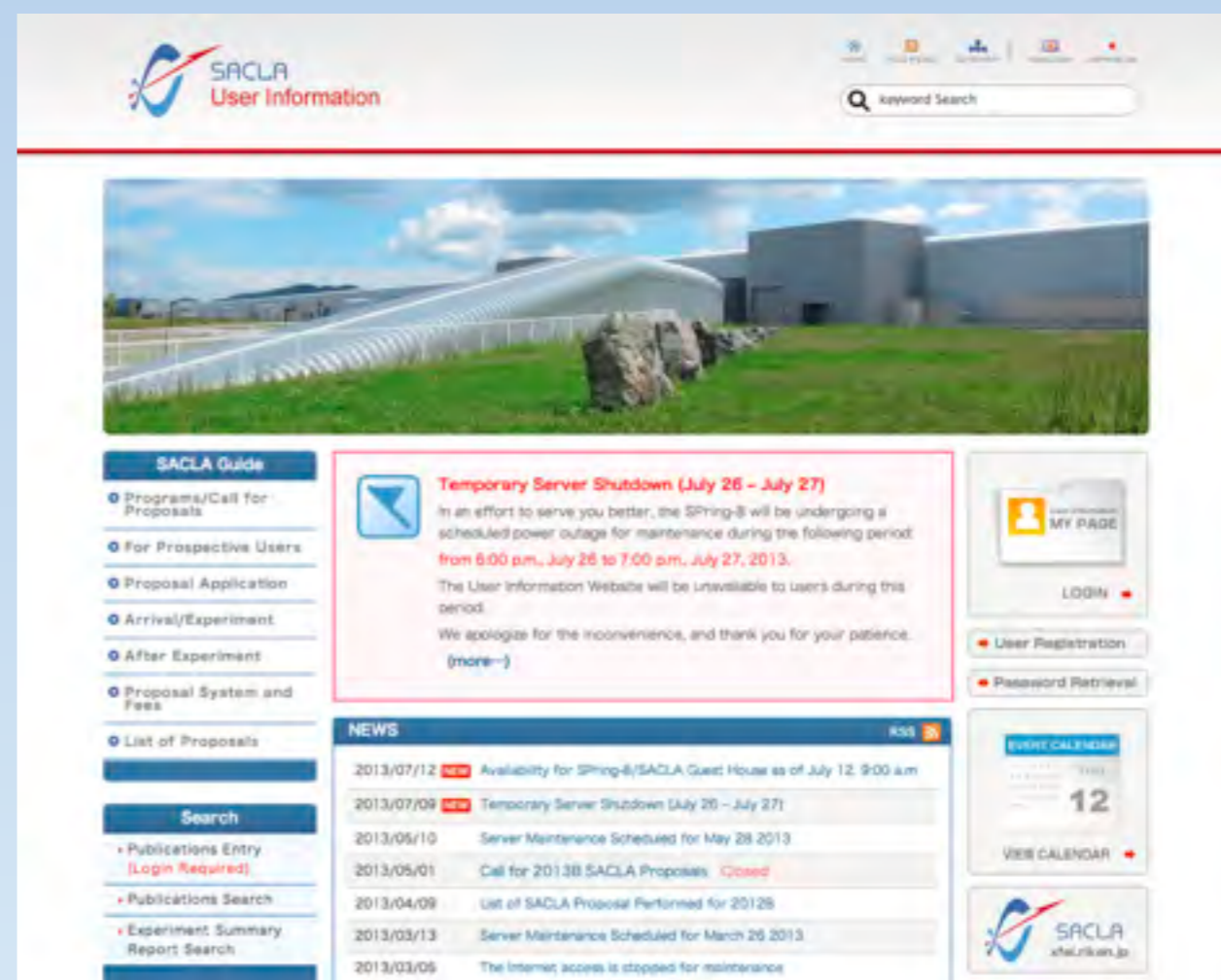
We decided to make up SACLA user system improving the existing SPring-8 user system.

Two User Portals

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



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

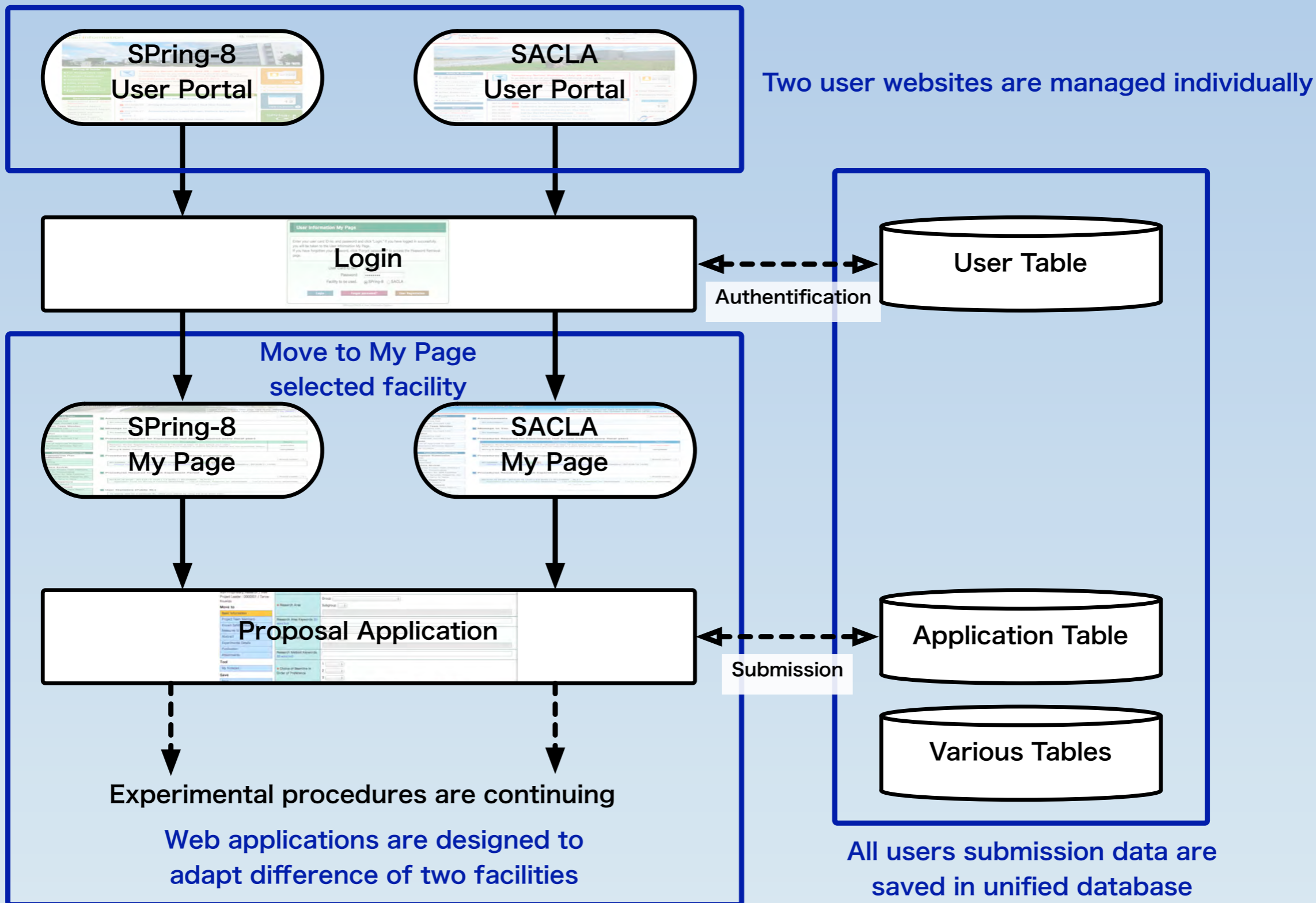


SACLA User Information
<http://sacla.xfel.jp>

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	12h
Available proposal types	15 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.

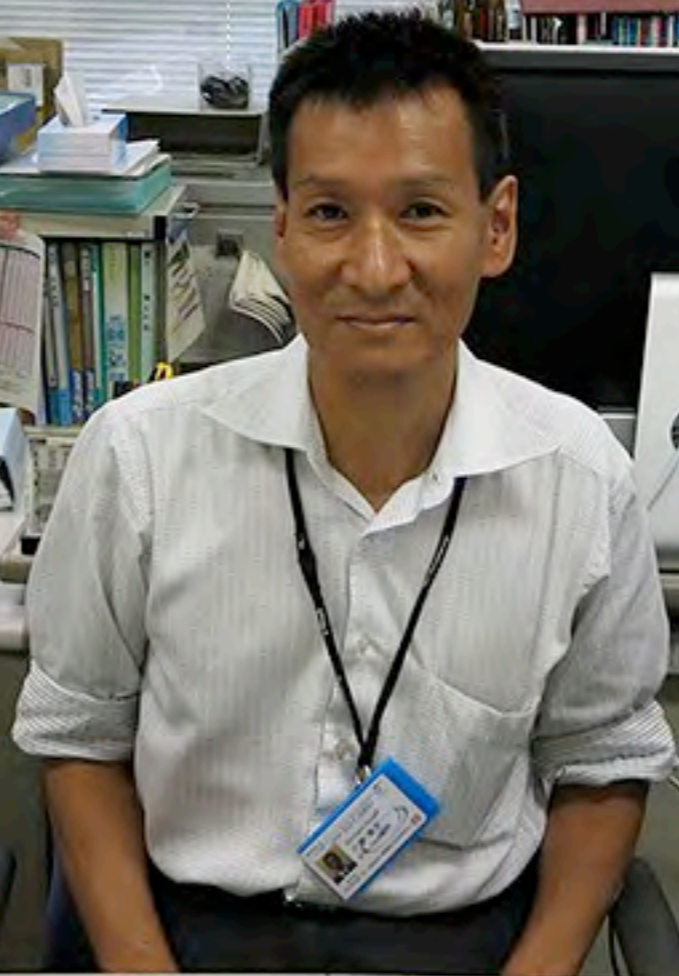
Future Plans

- 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 sign-on system based on LDAP.

SPring-8 Users Office System Support Team Members



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Thank You