

EPICS Control System for the FFAG Complex at KURRI

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KURRI FFAG Complex

For Accelerator Driven Subcritical reactor

2002 Kumatori Accelerator Driven Reactor Test Project Started

2008 Achieved 0.1 nA - 100 MeV w/ 30 Hz Repetition

2009 World First ADS Experiment

2010 Thorium-loaded ADS

2011 New Injection Scheme "H⁻ Injection" Developed

2012 Achieved 10 nA - 100 MeV w/ 20 Hz Repetition

Achieved 1 nA - 150 MeV w/ 20 Hz Repetition

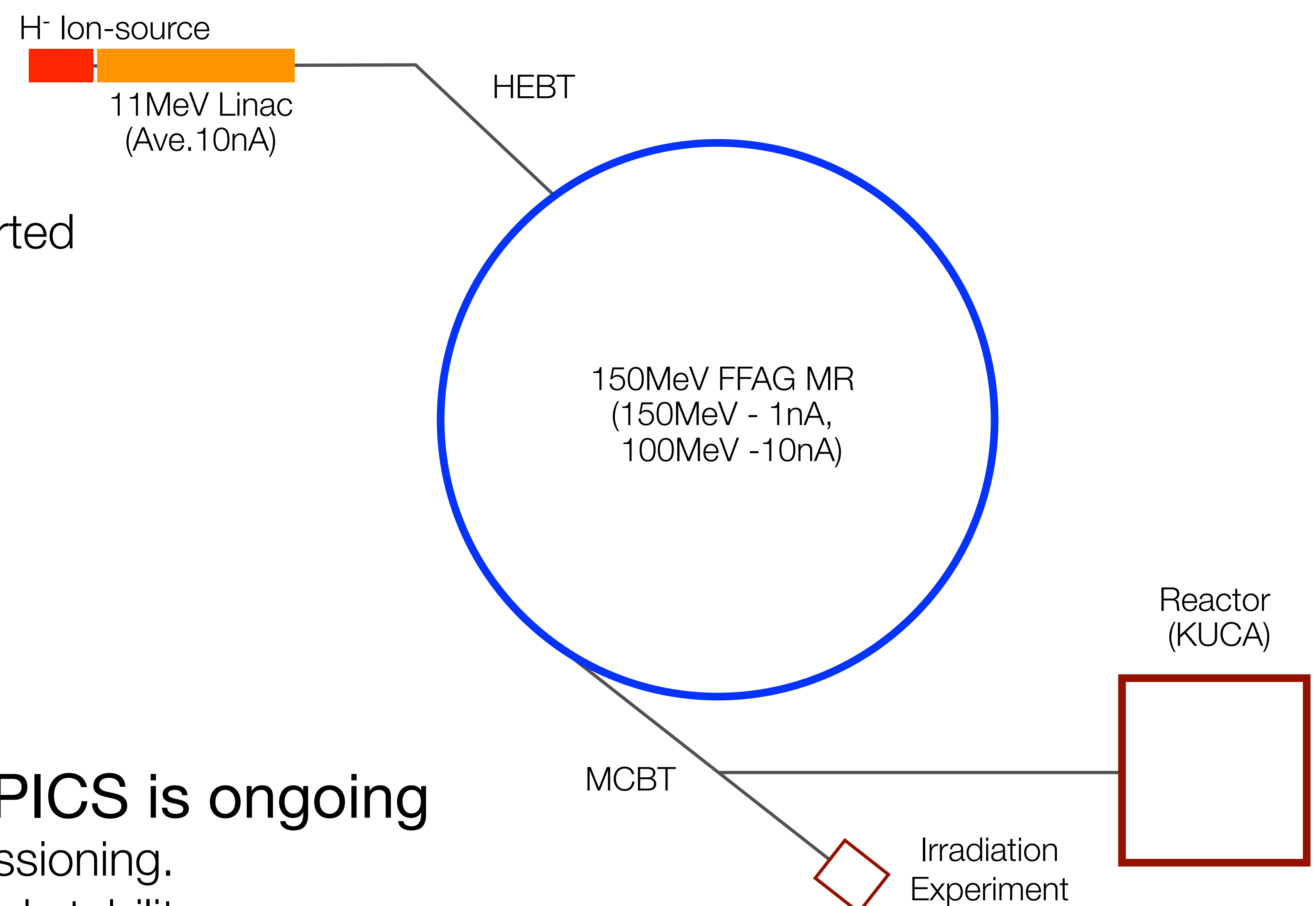
Control System Update with EPICS

Replacement of Initial Control System with EPICS is ongoing

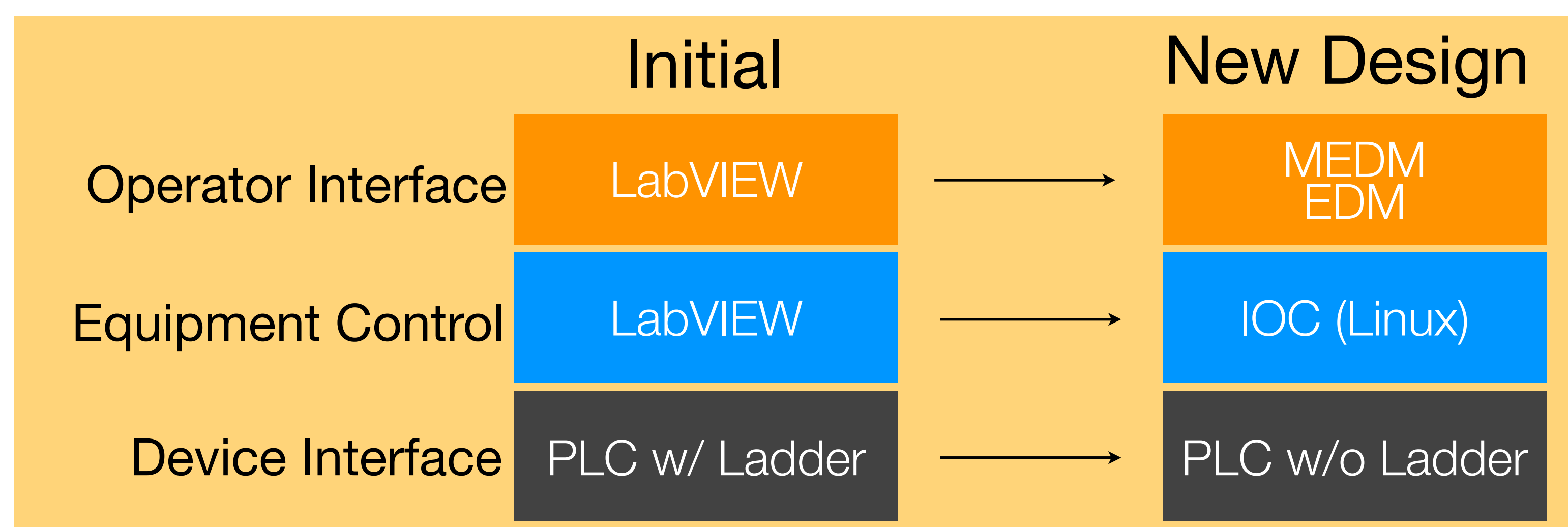
Initial control system begun to use in 2006 for beam commissioning.

It is time to update and redesign to get more reliableness and stability.

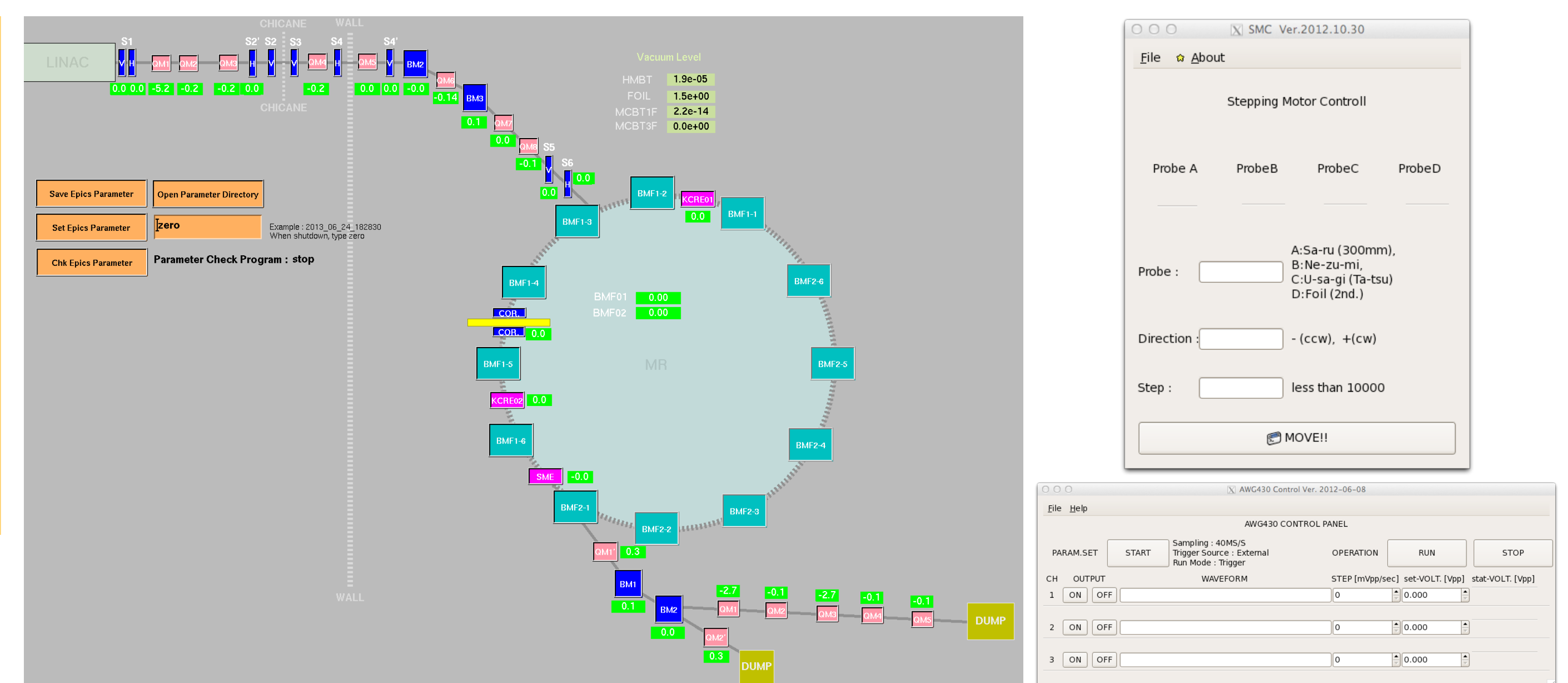
Introduction of EPICS has been started in 2009.



Present FFAG Complex with H- Injection Scheme



In new designed control system, Linux PCs are used as EPICS IOC and NetDev software is used as a PLC driver.



EPICS OPI based on EDM

OPIs based on GTK

Status of Present Control System

Initial control system and new designed EPICS control system coexist

The update of control system has been done gradually.

Except Linac control system, the replacement with EPICS will be finished with in a year.

Future Plans

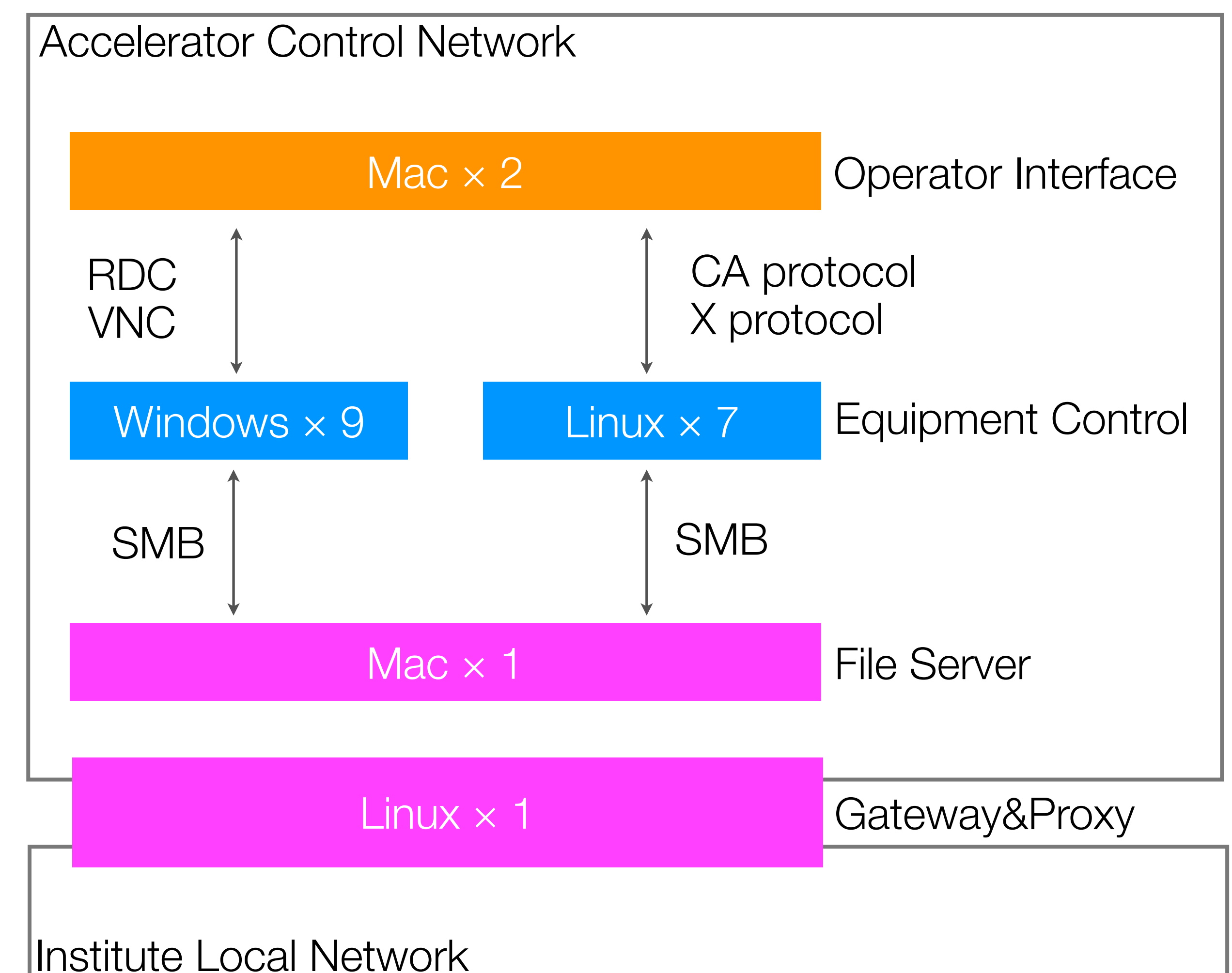
Virtual IOCs Virtualization technology to separate EPICS IOCs

Beam Profile Monitor

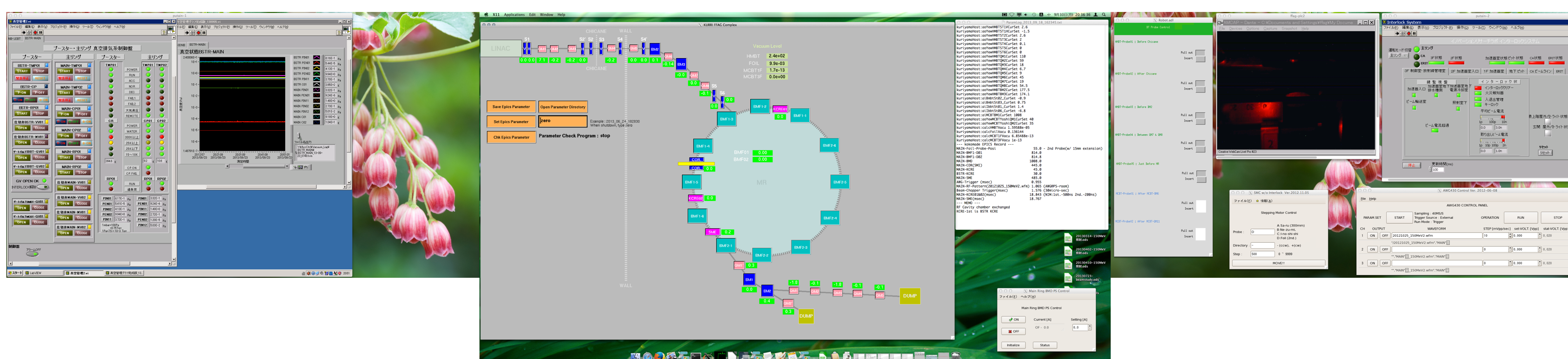
Combine beam profile monitor system to the EPICS control system

Access Control for the Radiation Control Area

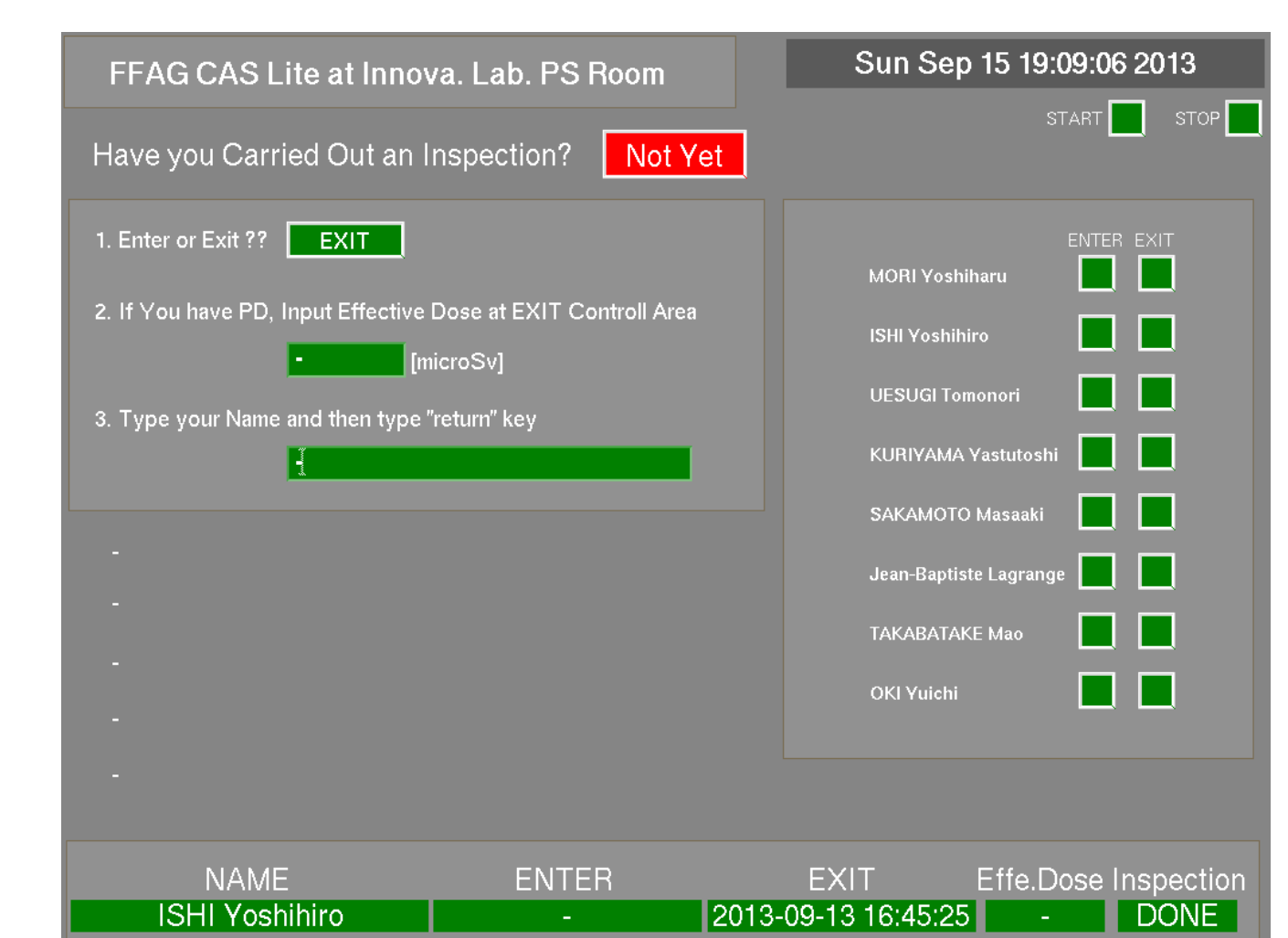
New access control for the radiation control area based on EPICS



Outline of Control System



Combined Operator Interfaces



EPICS based Access Control