



IBEX - the New EPICS Based Instrument Control System at the ISIS Pulsed Neutron and Muon Source

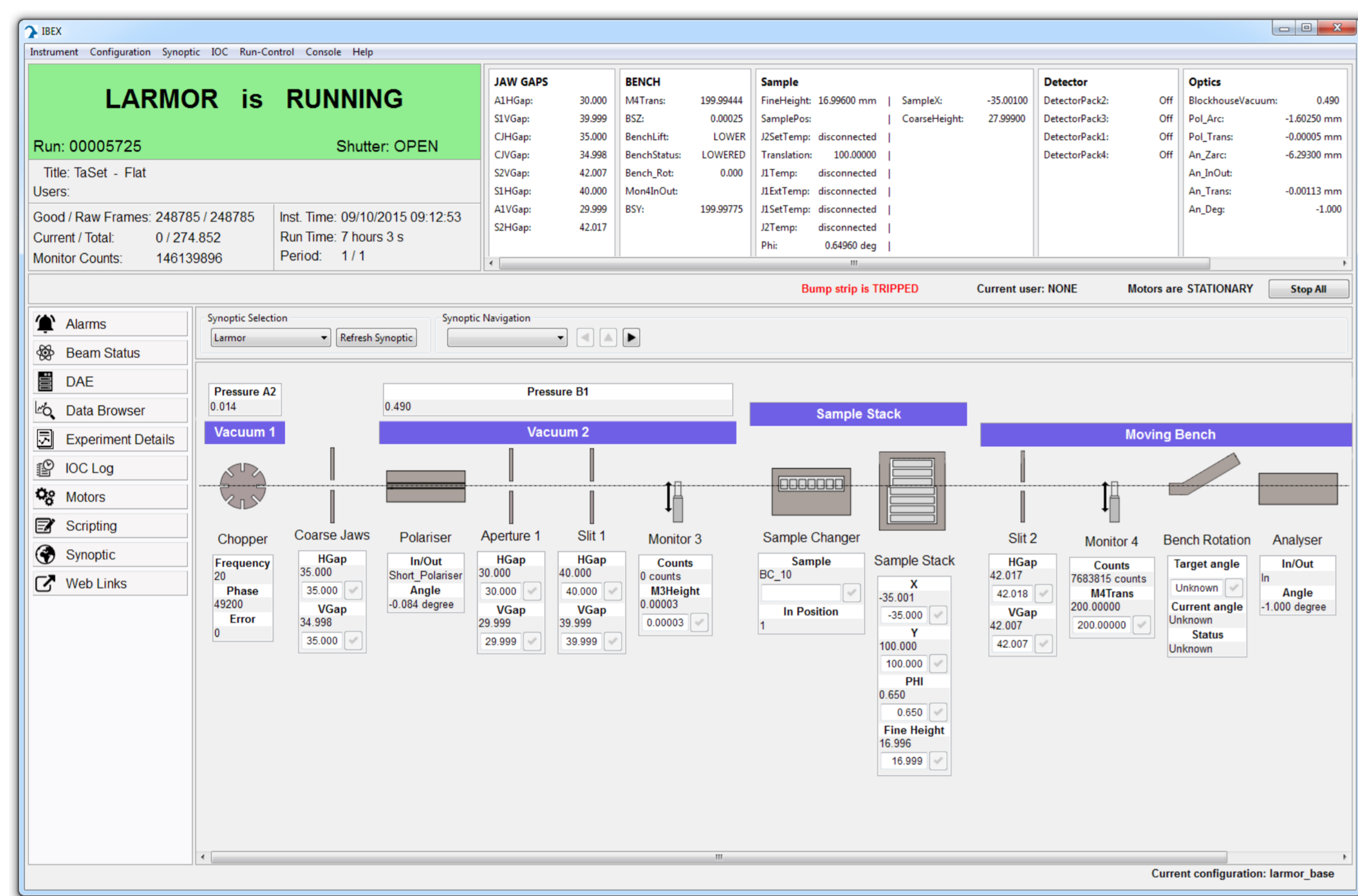
Introduction

The IBEX control system was developed to replace the existing LabVIEW based control system.

To be able to meet the future needs of the ISIS facility, IBEX was designed to be flexible and easy to extend or modify. IBEX was implemented using a client-server style architecture based on EPICS.

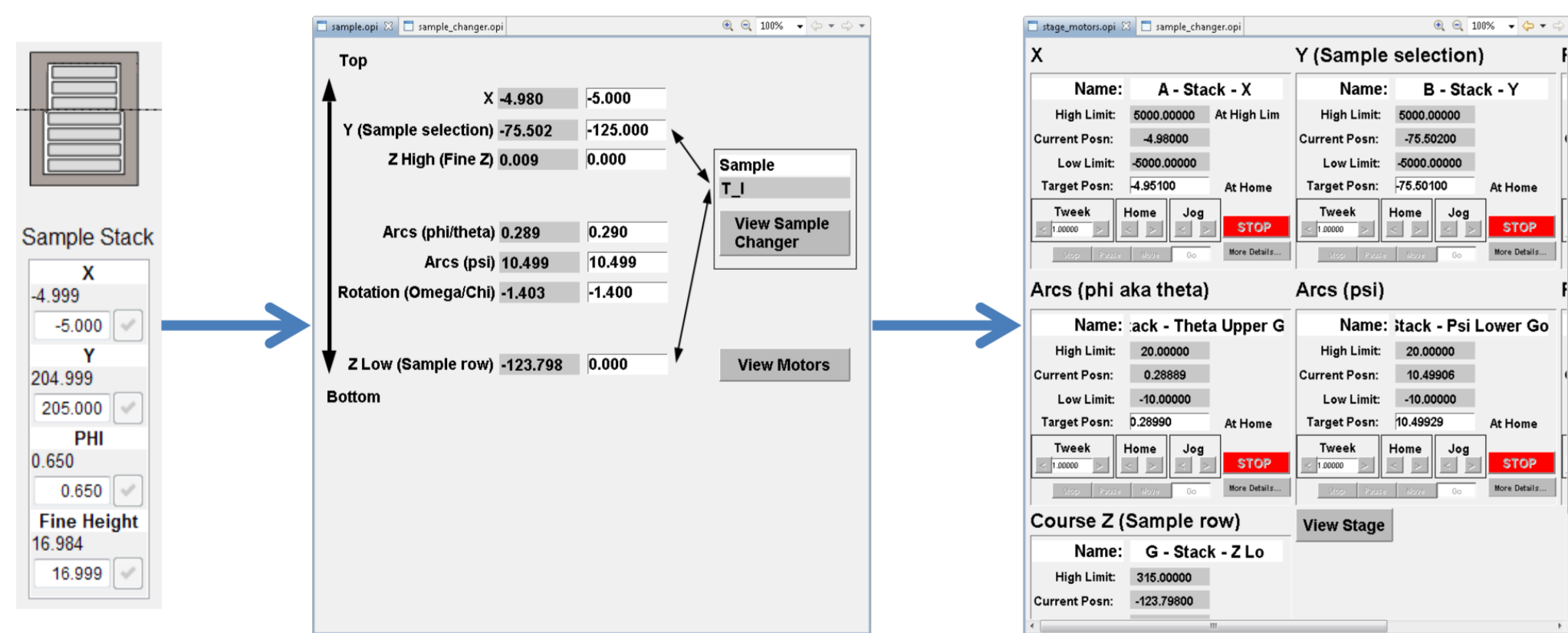
CLIENT

- Developed using Eclipse RCP and Control System Studio
- Instrument independent

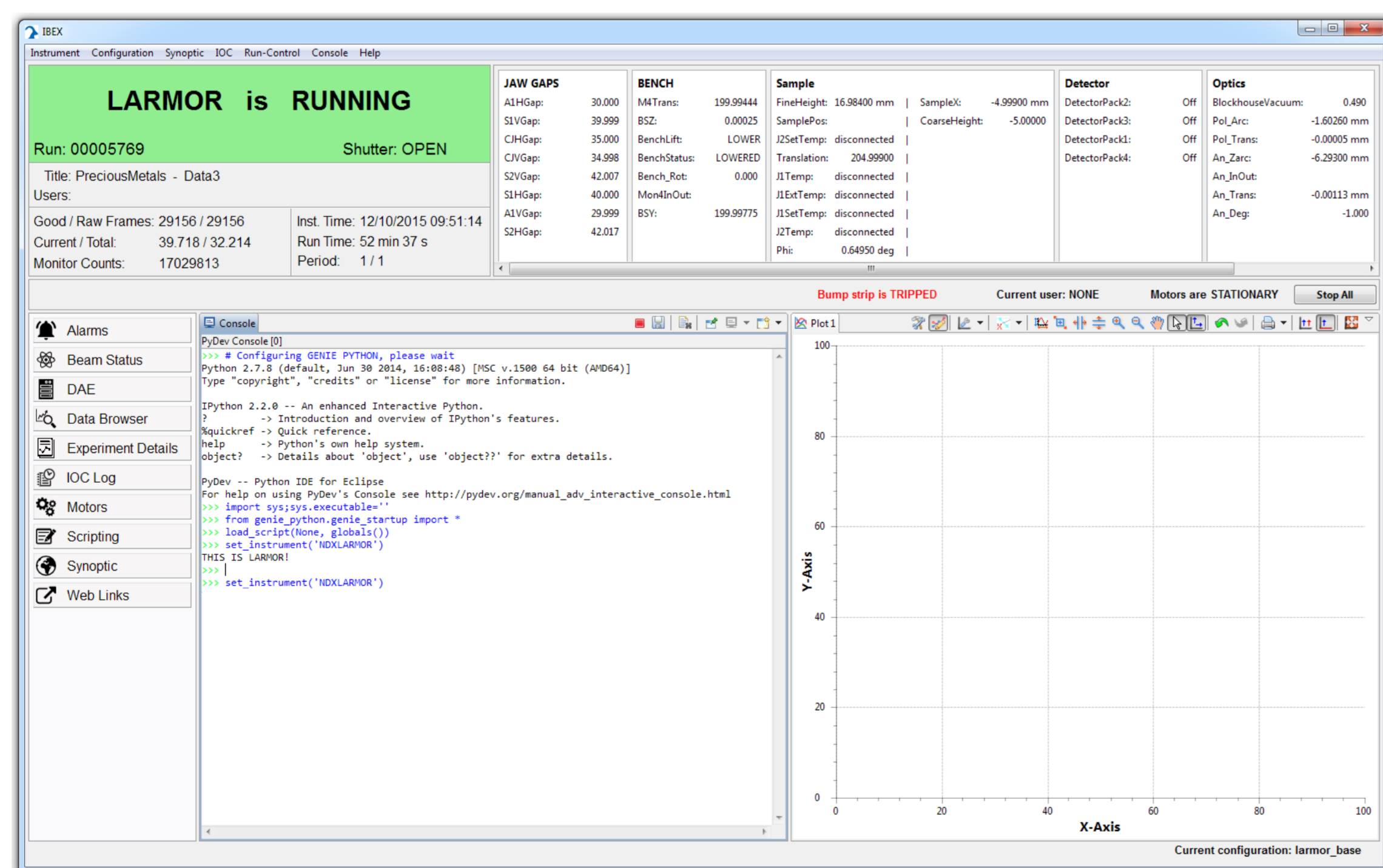


Key Features

- Instrument summary area (Dashboard)
- User customisable area (Blocks and Groups)
- Synoptic beamline layouts with “drill down”



- Scripting window (PyDev)

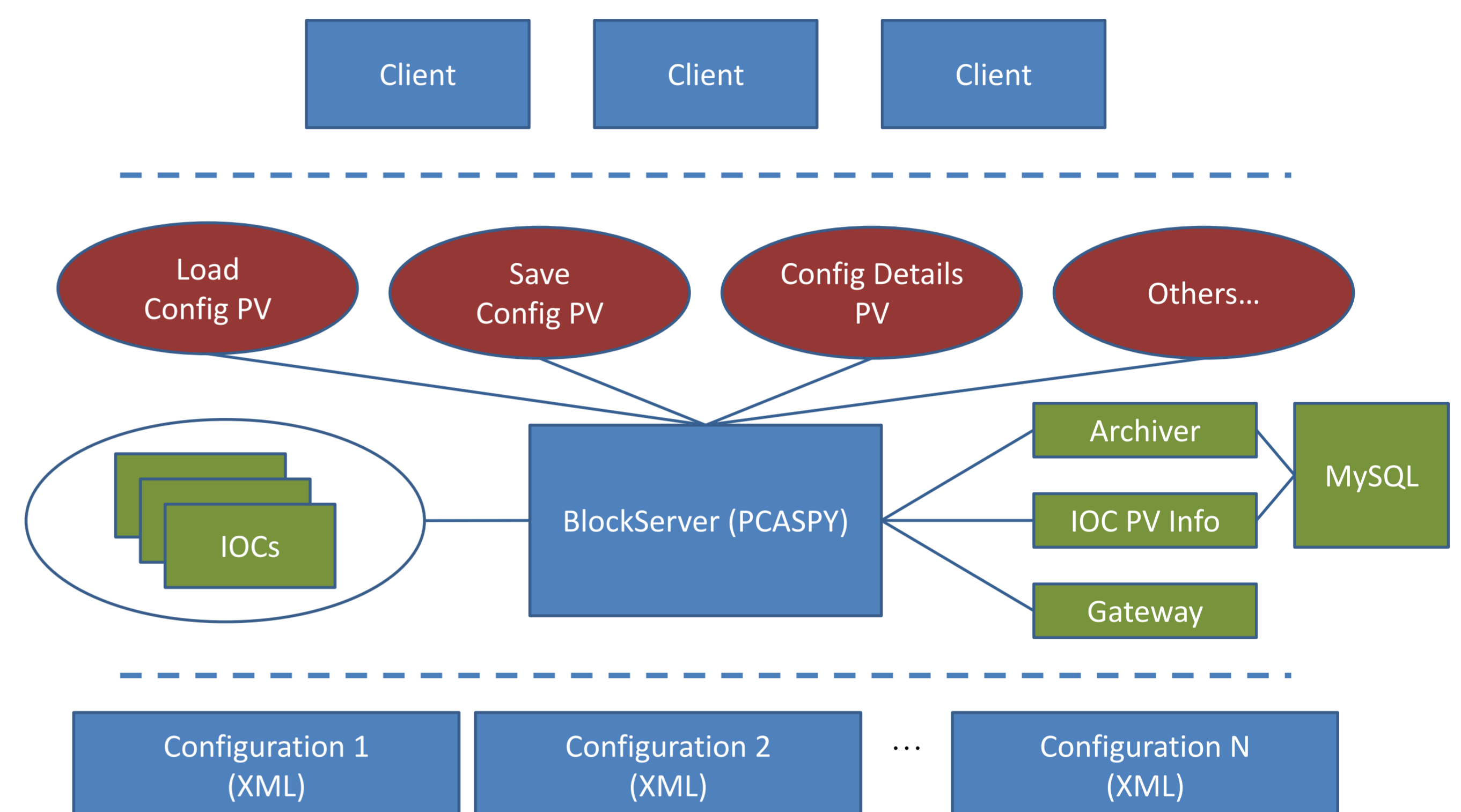


Current Status and the Future

IBEX is being used on one production instrument (LARMOR), with another new instrument (IMAT) about to start commissioning.

Future work is being targeted at providing a script server interface and on incorporating more feedback from live data analysis into control of the running system.

SERVER



Hardware

- A single Windows 7 (x64) virtual machine
- Moxa NPort serial server
- VLAN based private network

Configurations

- Stored as XML, managed by the BlockServer
- Contain items such as:
 - Which IOCs to start plus IOC macros
 - Blocks and Groups for display and logging
 - Preferred synoptic view
- Can be saved as “Components” and included in other Configurations

IOC and PV Management

- Uses procServ, procServControl and conserver
- IOCs all run on local loopback interface
- PV access from outside via EPICS gateway
- Second gateway provides Block -> PV aliases

Logging and Archiving

- All instrument PVs -> one archive process
- Blocks -> second archive process
 - These values appear in NeXus data file
- Stored in a MySQL Database on the server