Control System Studio: An Integrated Toolset

Kay Kasemir,
ORNL/SNS

EPICS: Distributed System

Servers

Clients

IOC

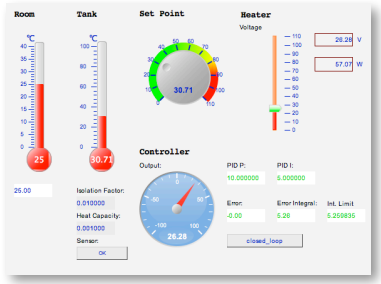
IOC

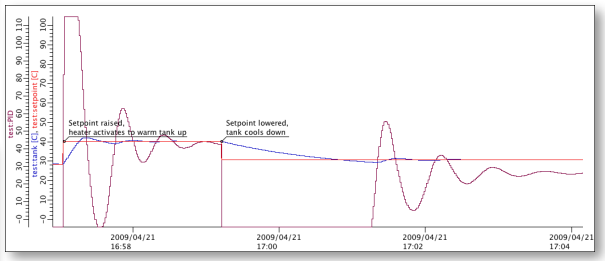
IOC

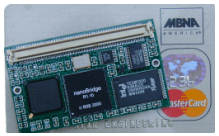
User Interface

Archive

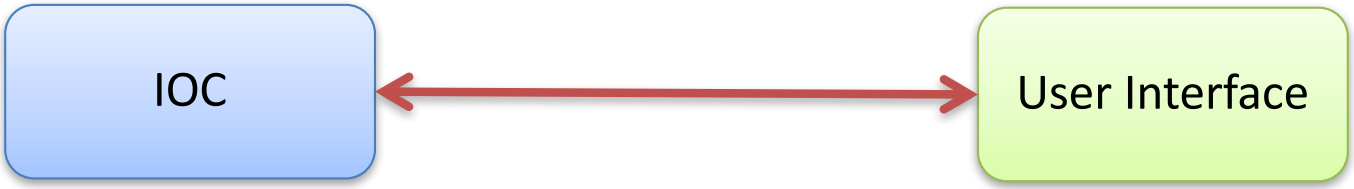
Alarm Handler







Over the years



Since ~1990:

```
record(ai, "my_record")
{
  field(DTYP, "MyDevice")
  field(INP , "@channel2")
  field(SCAN, "1 second")
  ...
```

More supported platforms:
vxWorks, RTEMS, Linux, OS X, Windows, ..
68000, Intel, PPC, Arm, ..

1. edd/dm 198x
2. medm 199x
3. edm 200x
4. CS-Studio 201x
   2009: BOY
   2017: Display Builder

Also:
tcl/tk/ca, python/qt/ca, ..

Limited upward-compatibility.

Control System (CS) Studio

User Interface tools

- Display editor & runtime
- Strip Chart
- Channel Access utilities

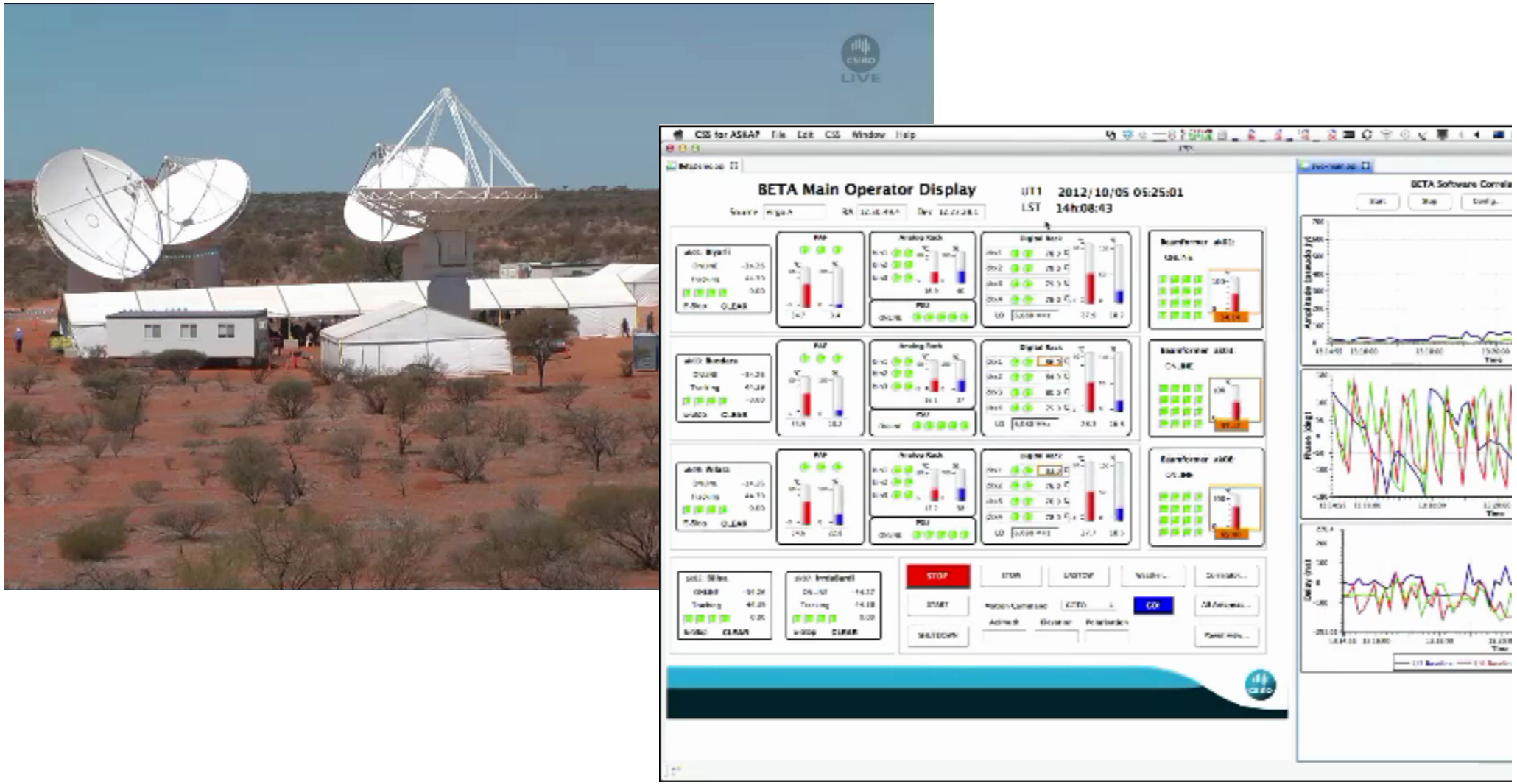
Also

- Archive system
- Alarm Handler
- Site-Specific support for logbook, IOC and channel information, ..

.. combined into an integrated, site-specific user-interface tool for Windows, Linux, OS X

What does CS-Studio look like?

Australian Square-Kilometer Array Pathfinder (ASKAP)

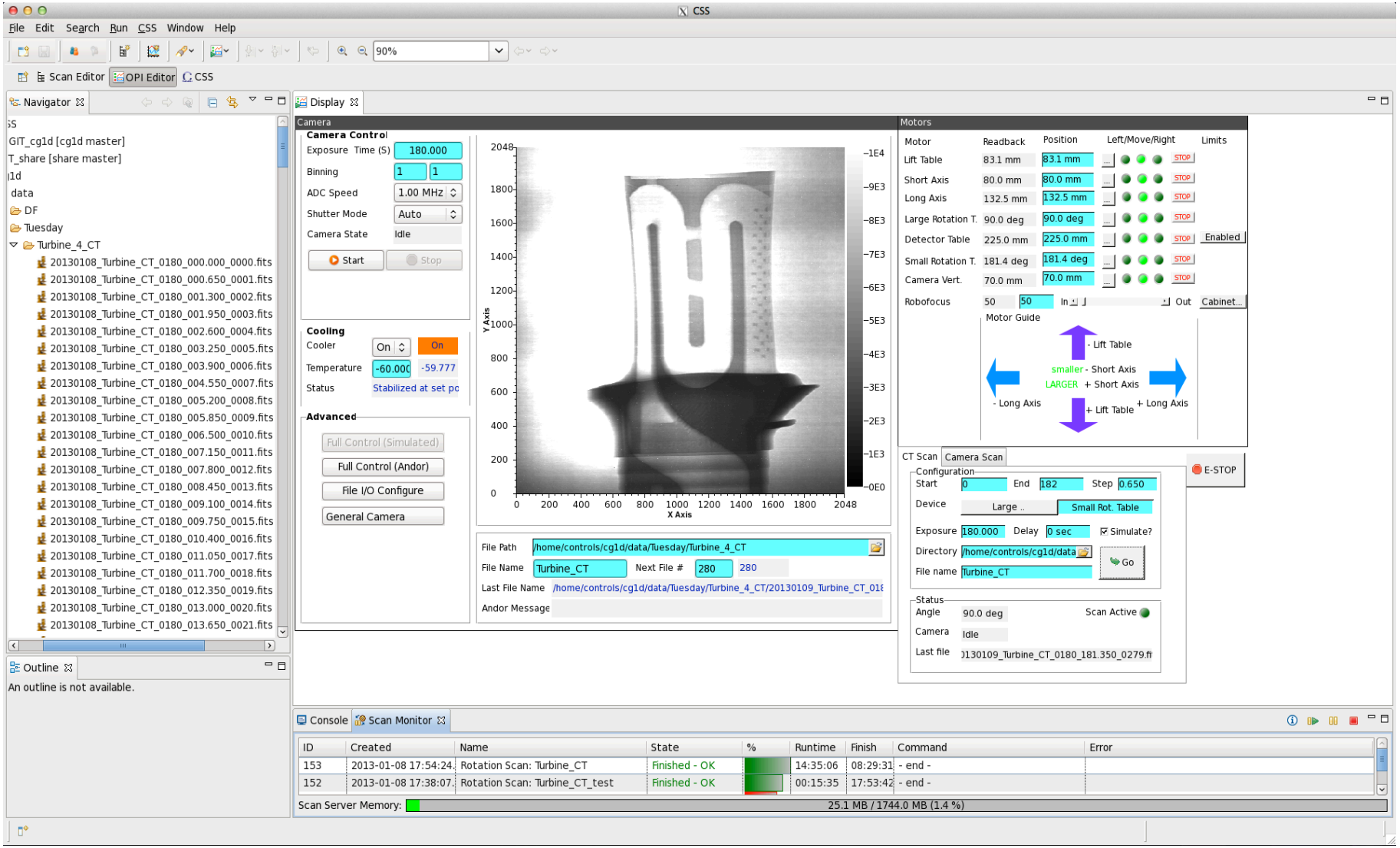


Oct. 2012, Juan Guzman, http://www.aps.anl.gov/epics/tech-talk/2012/msg02113.php

ITER

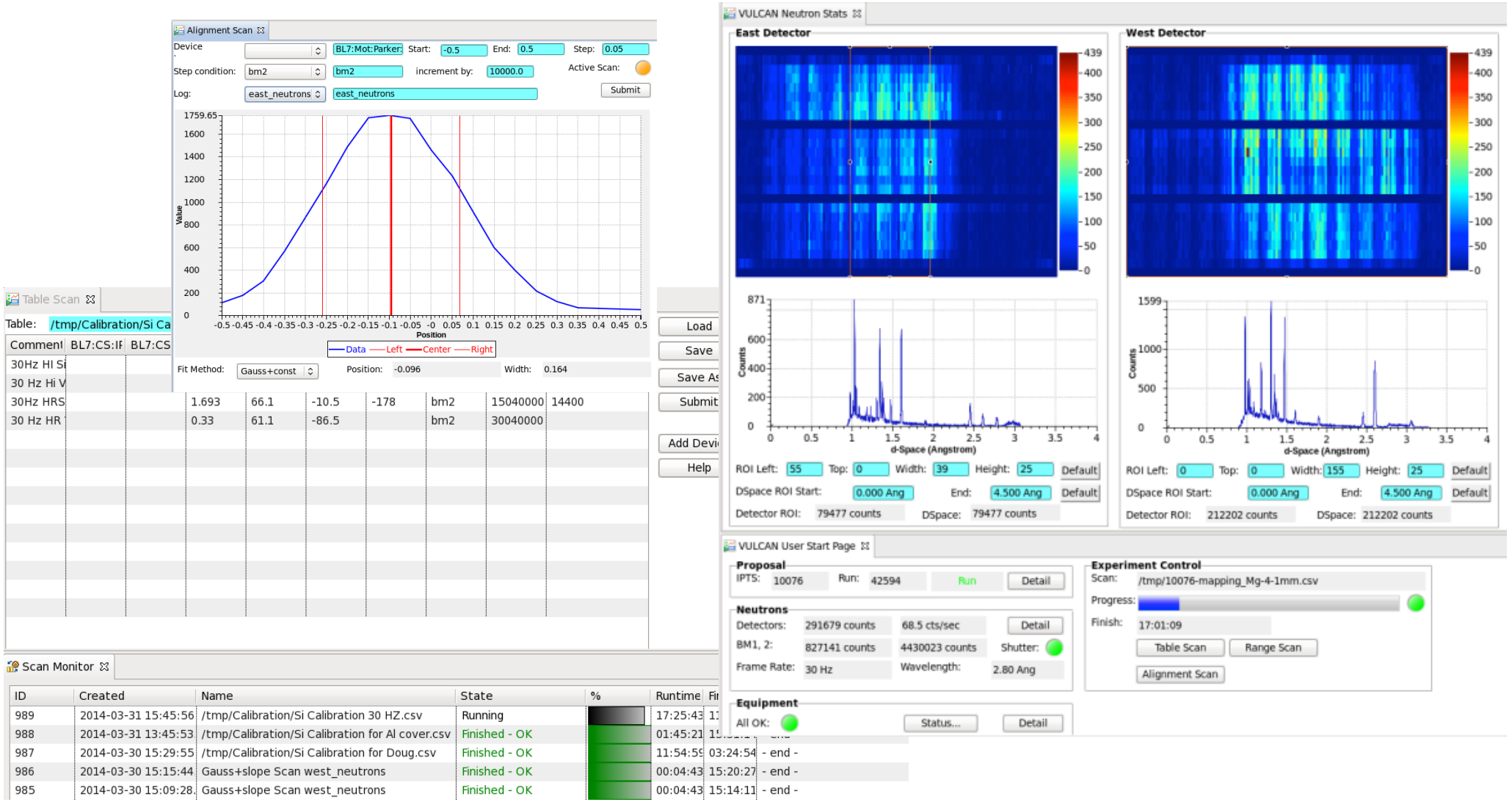
ITER-FPSC-vBetaVersionPanelsOPI-UserManual.doc, Nadine Utzel, 2011

ORNL ‘CG-1D’ Beam Line



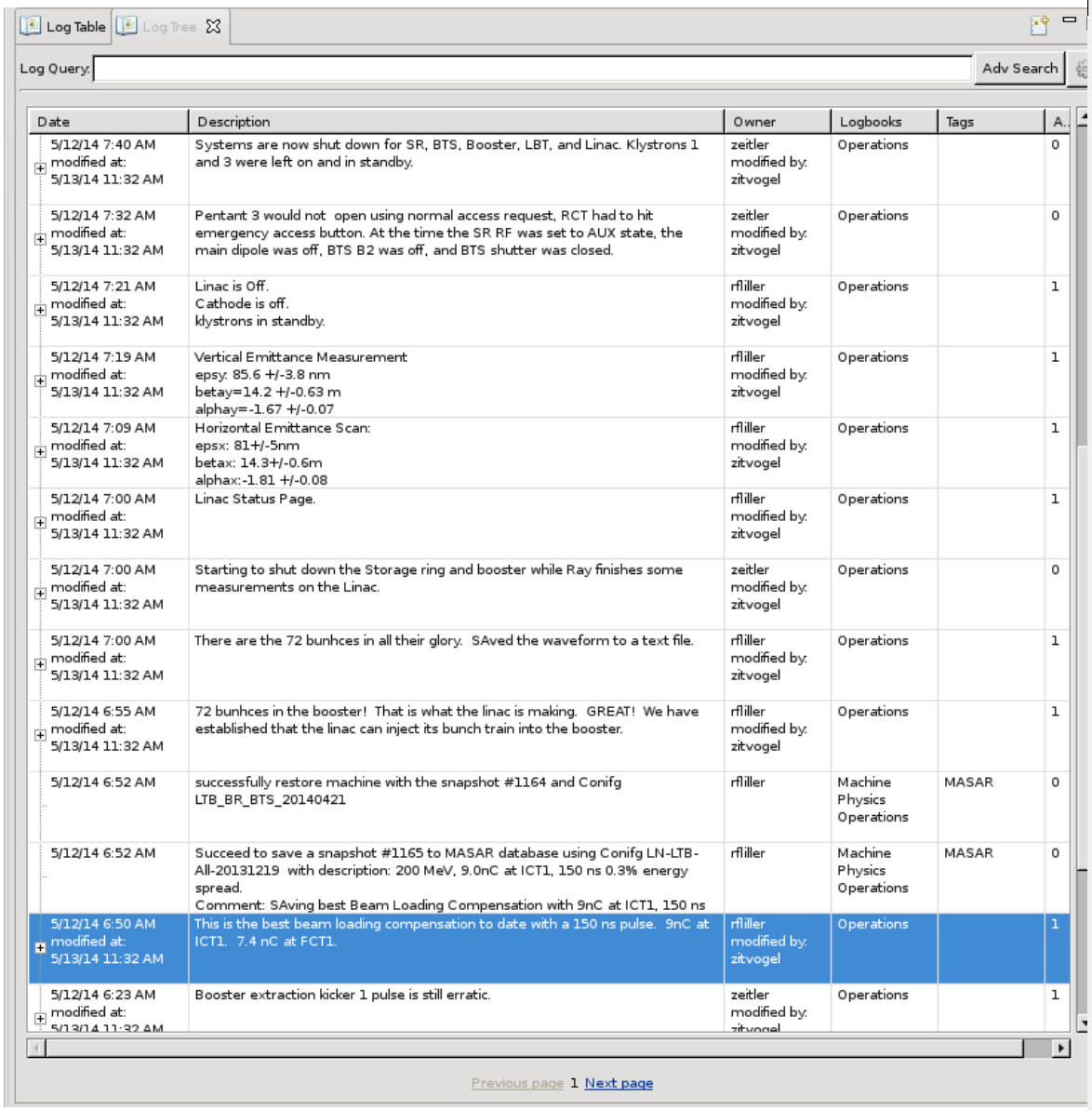
Neutron Tomography, EPICS/CSS since Jan. 2013

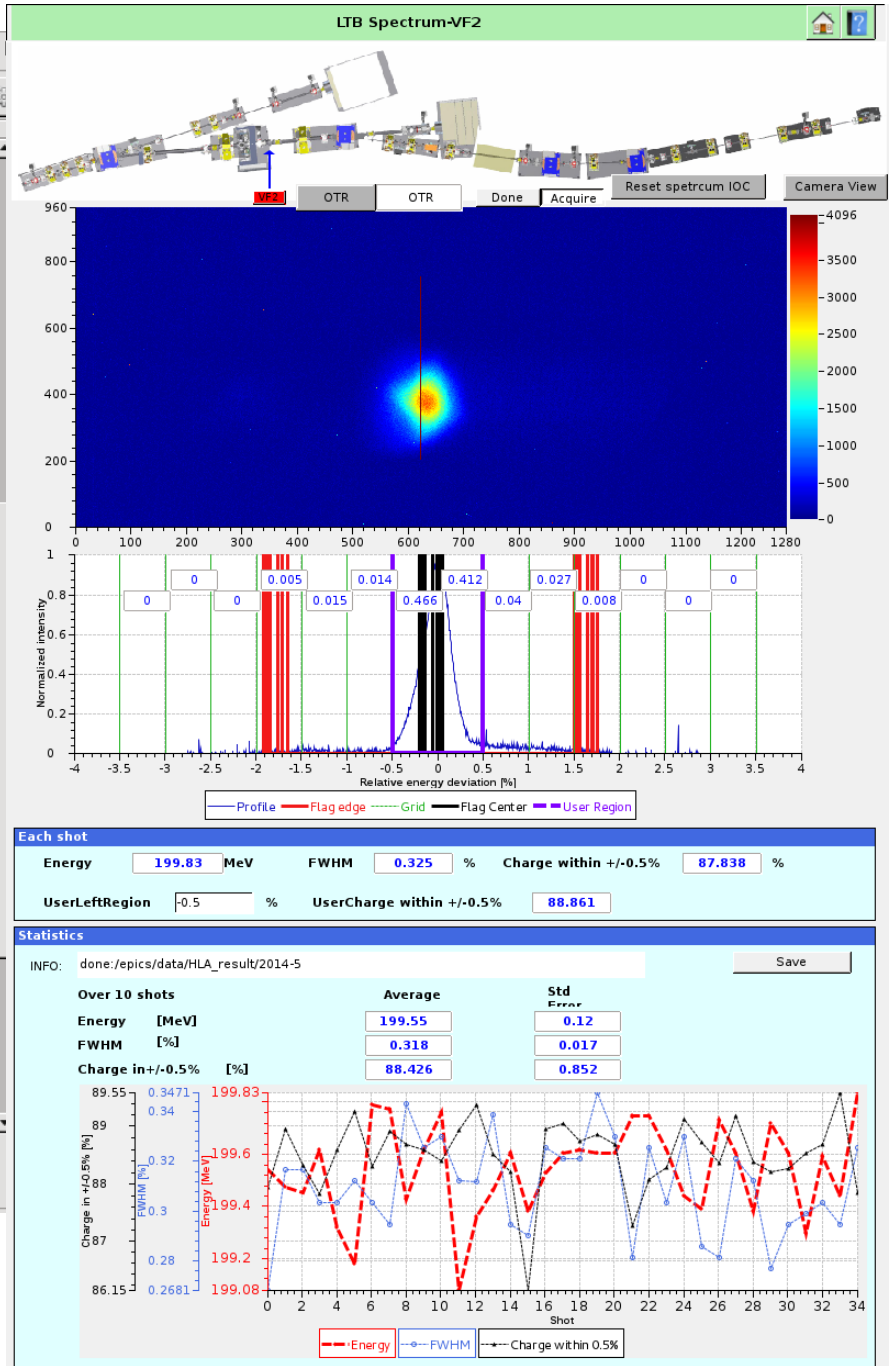
ORNL SNS ‘VULCAN’ Beam Line



Engineering Diffractometer, EPICS/CSS since March 2014

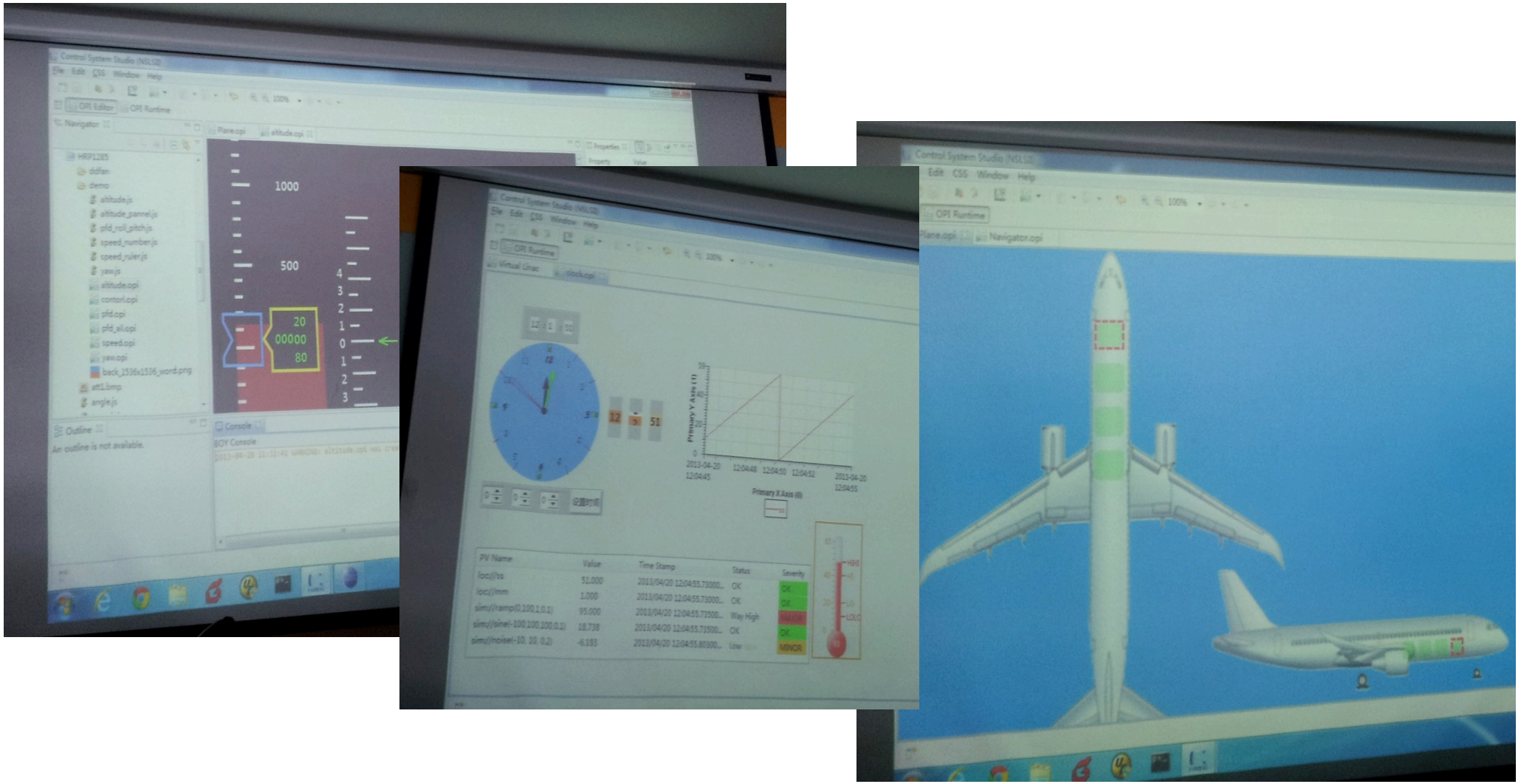
BNL NSLS2





Kunal Shroff, May 2014

Airplane Simulator/Test



Somewhere …

What is CS-Studio?

CS-Studio Components

Common Use

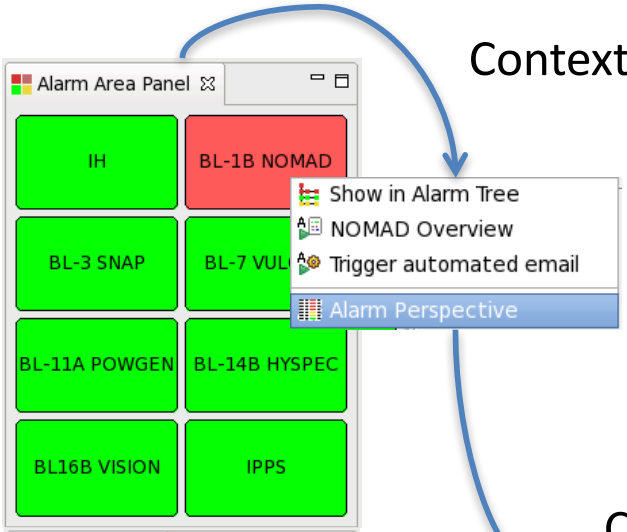
- BOY Display Builder
- Data Browser
- Probe
- PV Table
- EPICS PV Tree
- Channel Access
- PV Autocomplete from History

Selected Use

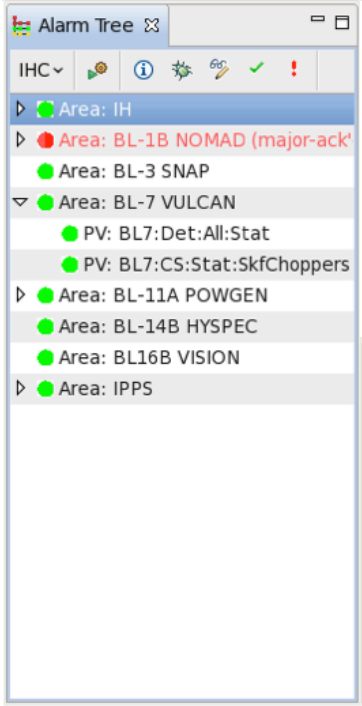
- Alarm System
- Channel Archiver, RDB Archiver, Archive Appliance
- ChannelFinder
- Olog, SNS ELog
- DDS, EPICS V4 PVA
- Autocomplete from Channel Finder, SNS PV database, Archive
- SNS MPS Bypass Table
- Therapist

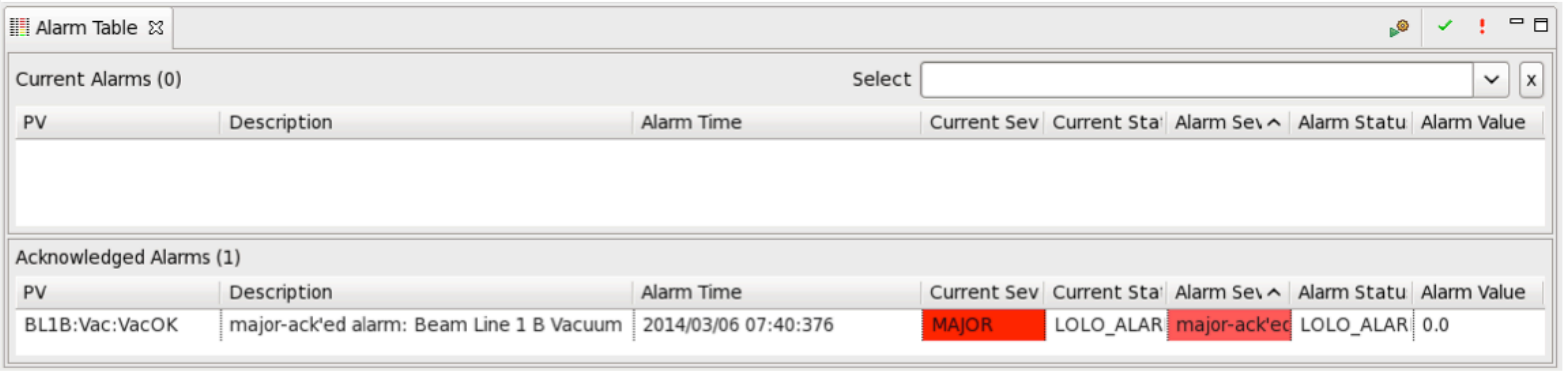
Integration: Alarm…

Context-Menu

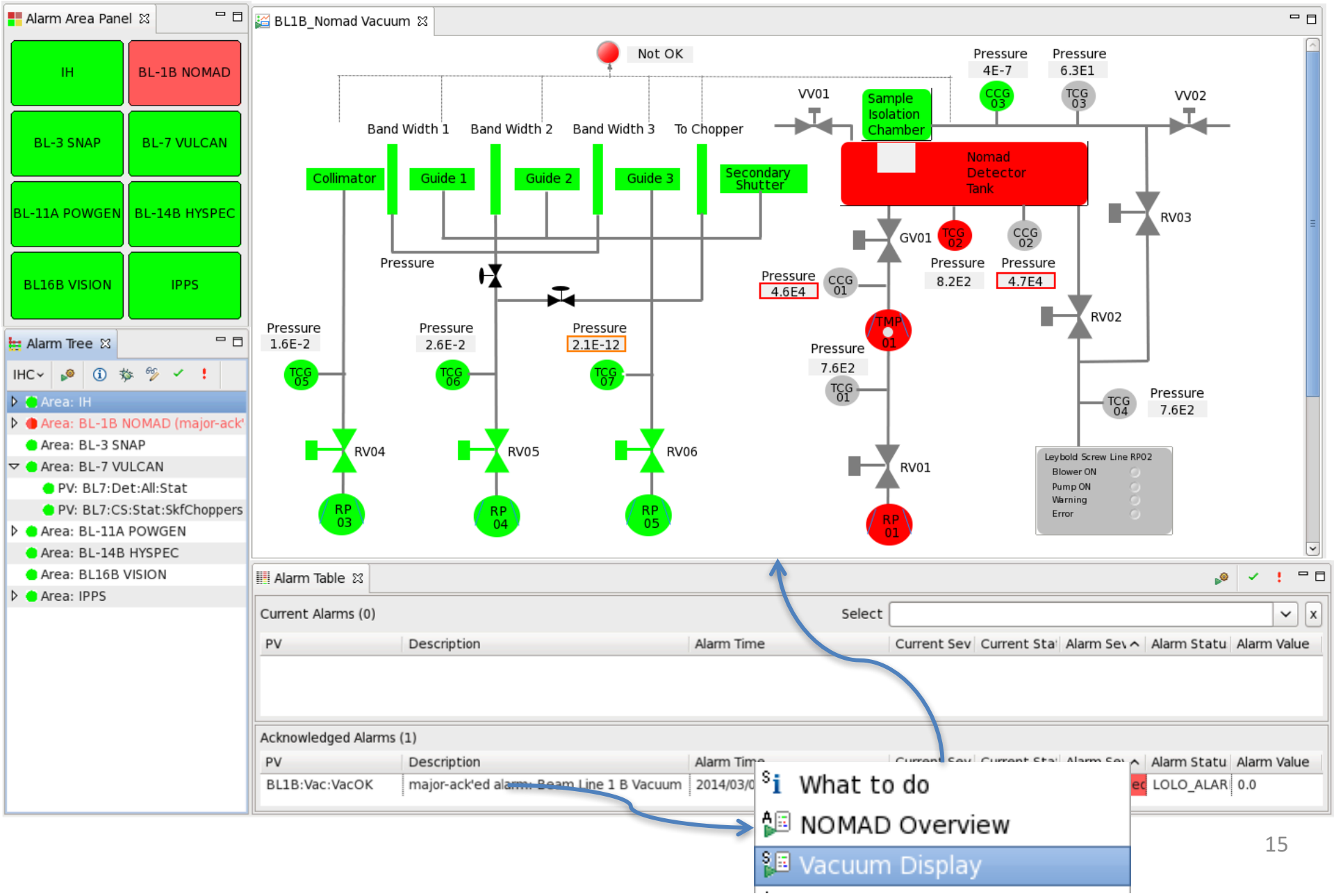


Complete Alarm Perspective:
Tree view, Table of current alarms





Integration: Alarm…



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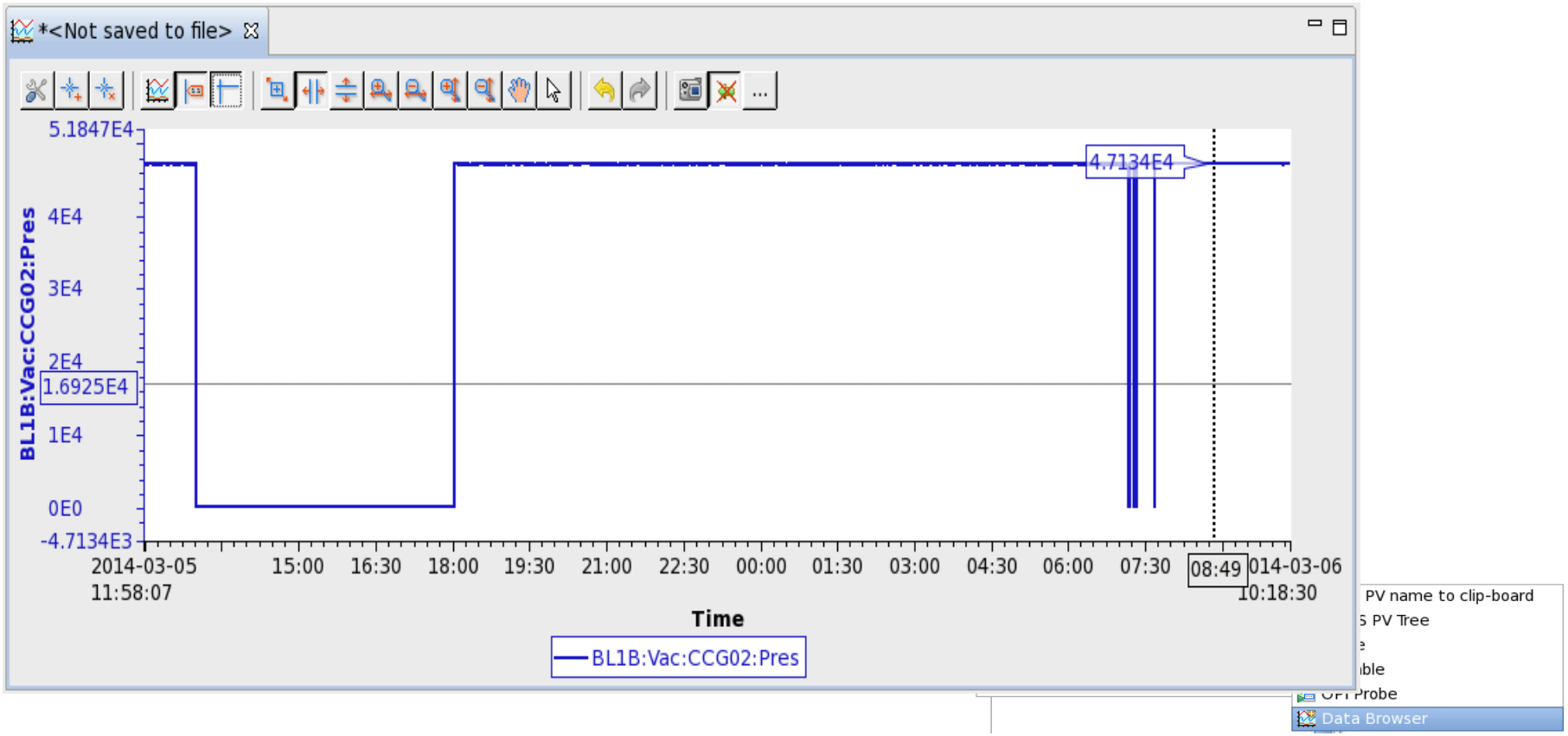
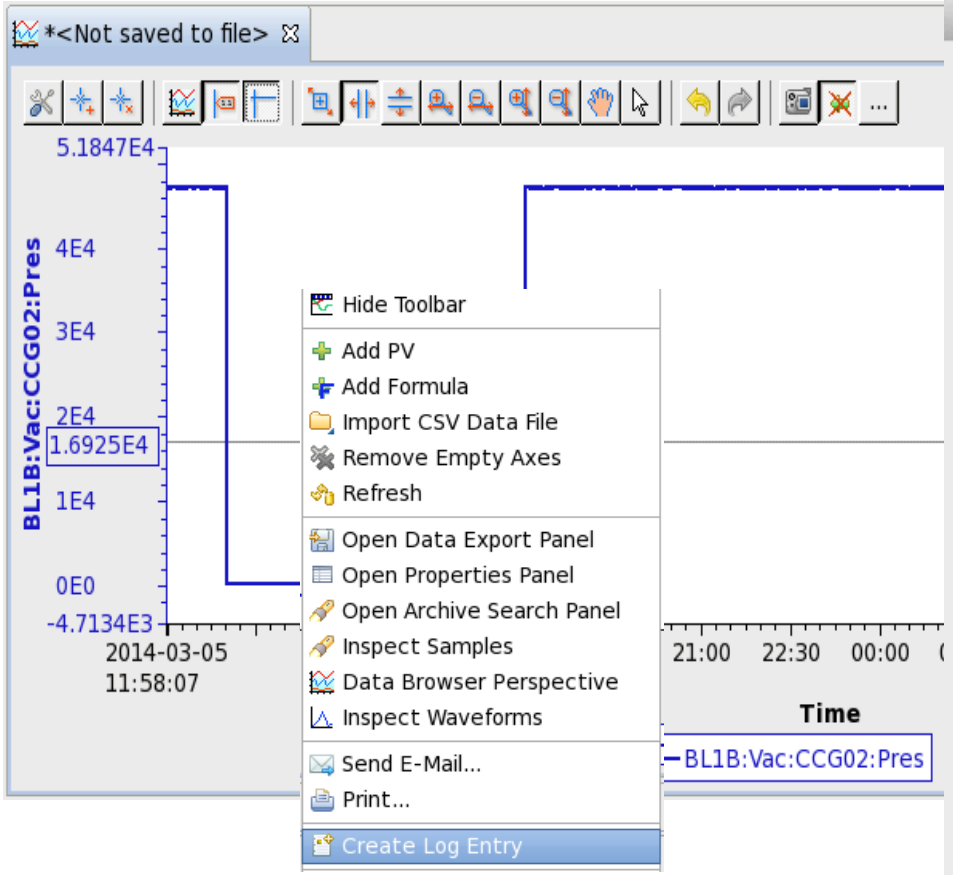
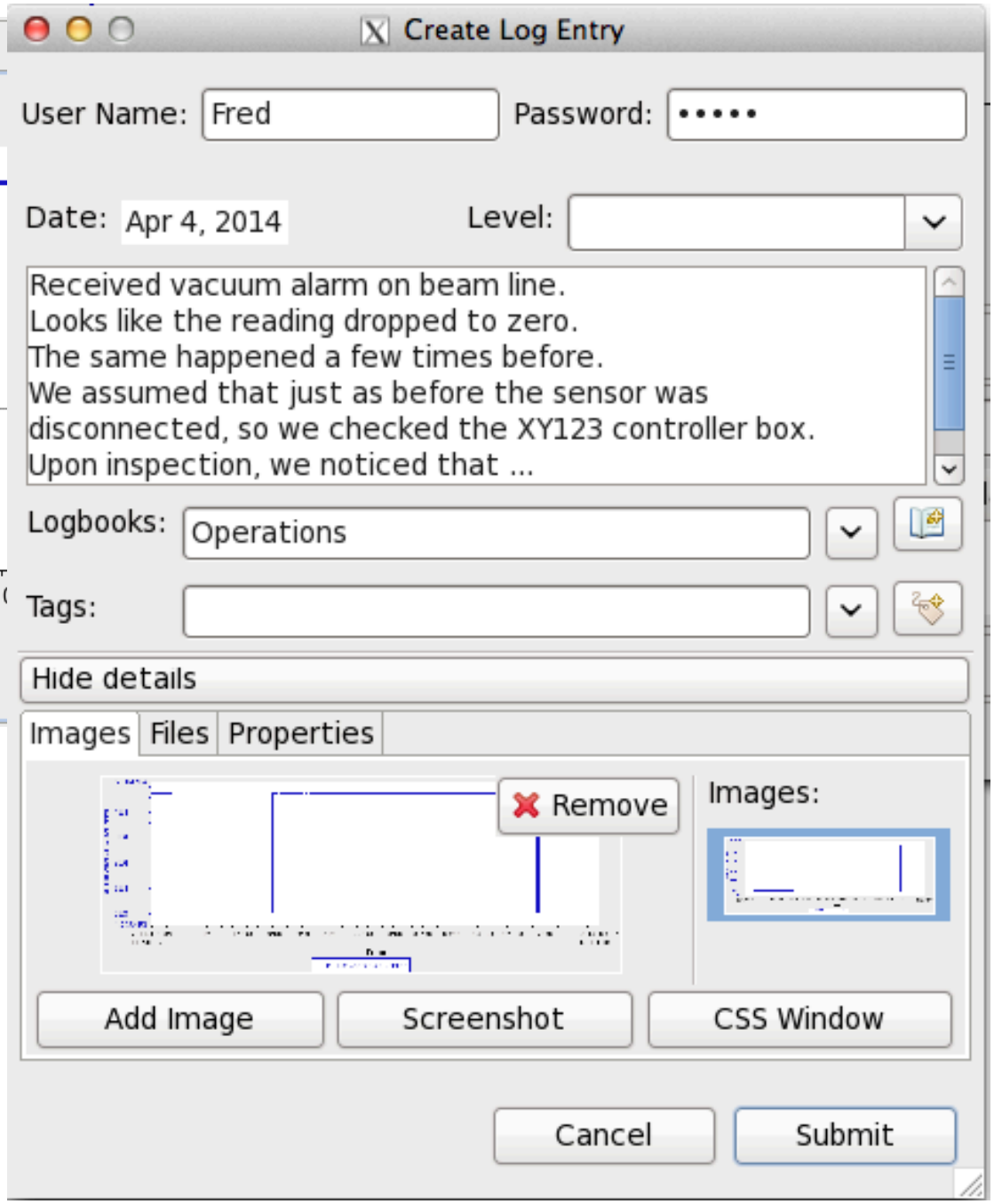


Integration: Alarm…





CS-Studio

is a collection of components.

Many of them. Confusing to get started as a developer/integrator.

To end user:

One tool, integrated Workflow

- Alarm display
- BOY Displays (Channel Access)
- Data Browser (with RDB Archive)
- Logbook (SNS Elog)

Result: