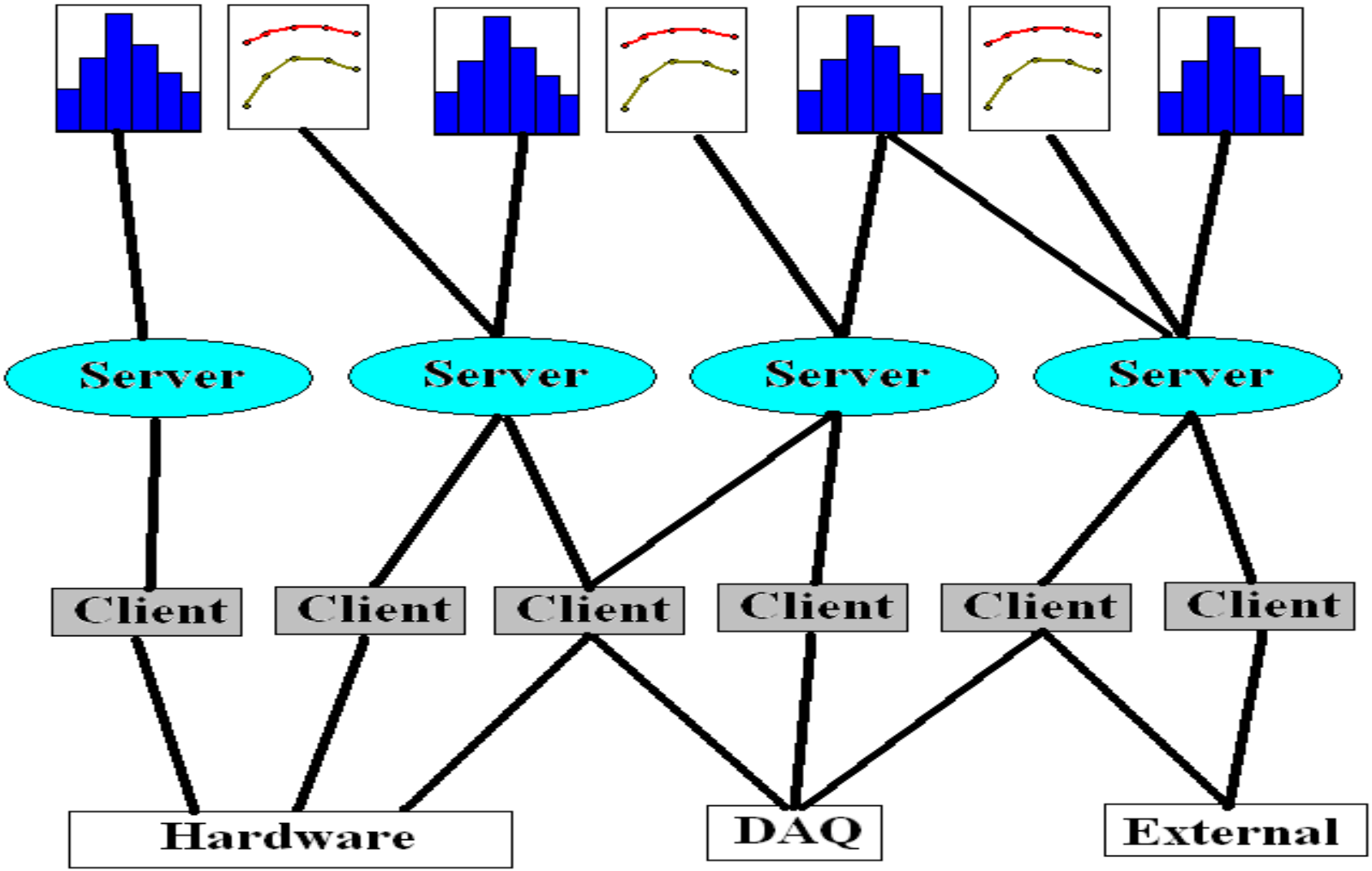
HERMES-like Slow Control software scheme @ OLYMPUS?

Anton A. Izotov, PNPI

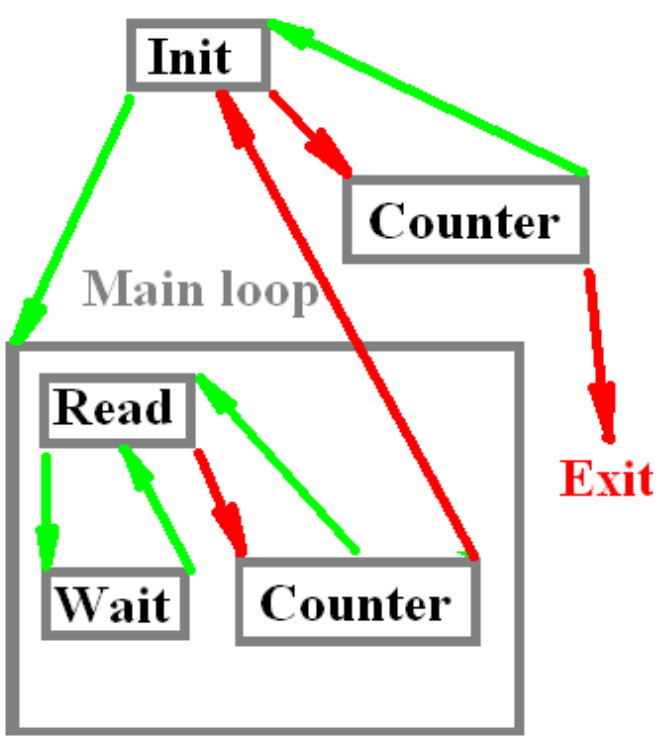
Client-server ideology

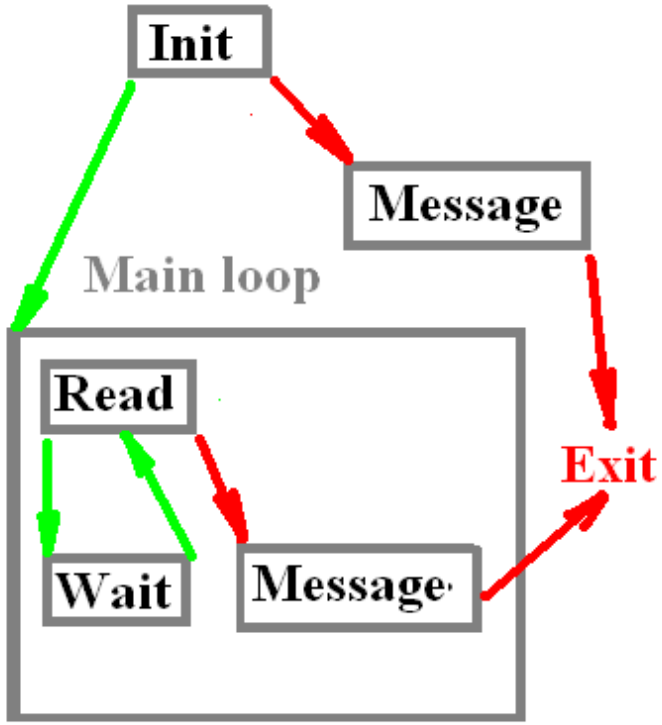


Jobctrl

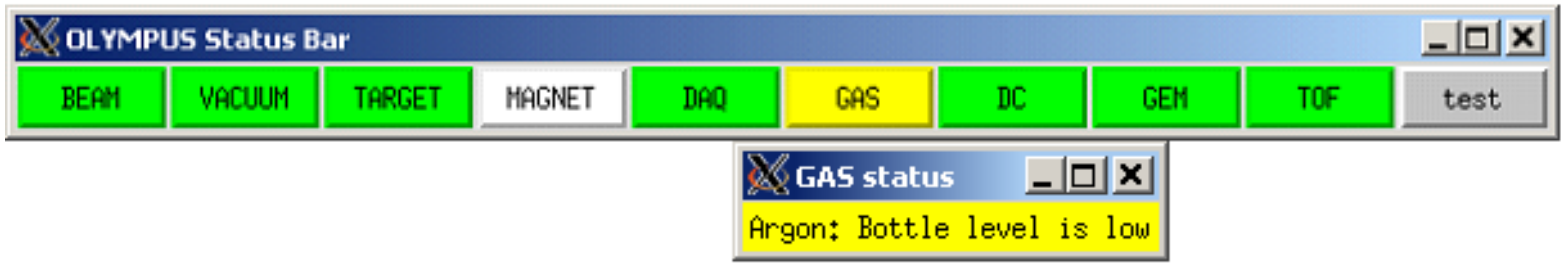
- JOBS – shows list of tasks
- START list/all – starts tasks
- STOP list/all – stops tasks
- STATUS list/all – runing, stopped, restarting
- LOG list/all – tasks output
  - E-mails log
  - Zips log
  - Restarts task with new log

Client structure

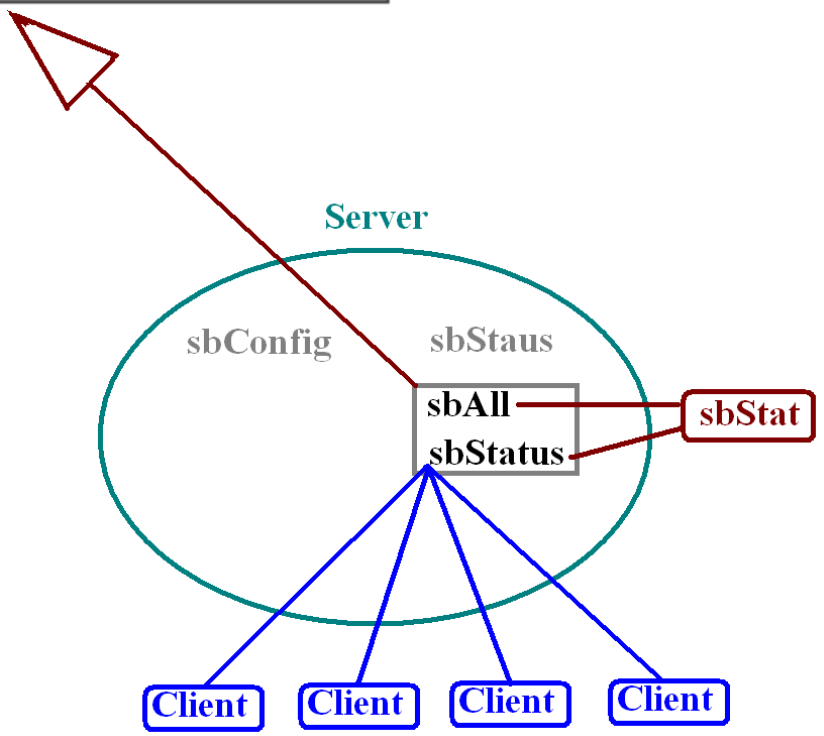




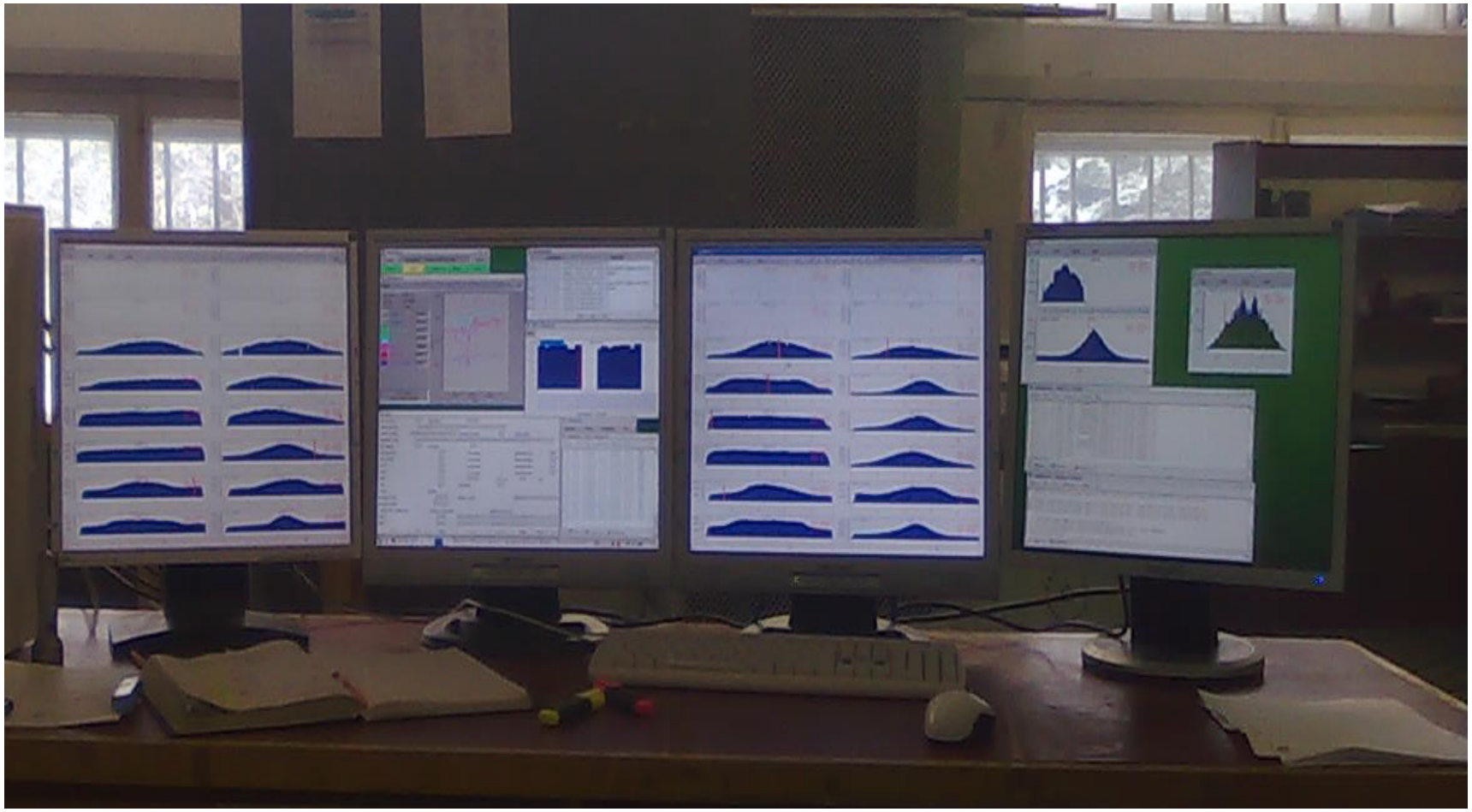
Status Bar



- **WHITE** – off and OK,
- **GREEN** – on and OK,
- **YELLOW** – warning,
- **RED+Alarm** – alarm,
- **GREY** – no info



PNPI Control Computer



Experimental Physics and Industrial Control System

Argonne NATIONAL LABORATORY

About EPICS

EPICS is a set of software tools and applications which provide a software infrastructure for use in building distributed control systems to operate devices such as Particle Accelerators, Large Experiments and major Telescopes. Such distributed control systems typically comprise tens or even hundreds of computers, networked together to allow communication between them and to provide control and feedback of the various parts of the device from a central control room, or even remotely over the internet.

EPICS uses Client/Server and Publish/Subscribe techniques to communicate between the various computers. Most servers (called Input/Output Controllers or IOCs) perform real-world I/O and local control tasks, and publish this information to clients using the Channel Access (CA) network protocol. CA is specially designed for the kind of high bandwidth, soft real-time networking applications that EPICS is used for, and is one reason why it can be used to build a control system comprising hundreds of computers.

At the Advanced Photon Source, **EPICS** is used extensively within the control system for the accelerator itself as well as by many of the experimental beamlines. There are about 250 IOCs (mostly Motorola VME boards using MC680x0 and PowerPC CPUs that run vxWorks, but we have a growing number of IOCs now on Linux, MacOS and RTEMS) that directly or indirectly control almost every aspect of the machine operation, while 40 Sun workstations and servers in the control room provide higher level control and operator interfaces to the systems, and perform data logging, archiving and analysis.

A Channel Access Gateway allows engineers and physicists elsewhere in the building to examine the current state of the IOCs, but prevents them from making unauthorized adjustments to the running system. In many cases the engineers can