DSG-R&D CS-Studio Phoebus Meeting Minutes

Date: February 16, 2024
Time: 2:00 PM – 3:00 PM

Attendees: Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, Tyler Lemon, and Marc McMullen

1. Demonstration of the EIC DIRC Phoebus Alarm Distributed System Test with Interlock Simulator

Peter Bonneau

1. Discussed the initial development and testing of the Phoebus alarm system software packages
   - The signal simulator is a host-based EPICS softIOC and the Phoebus alarm applications all integrated onto a single computer
2. Reviewed alarm system integration
   - The distributed system tests are used for debugging and verifying the connections between applications
   - The EPICS IOCs and the alarm system are on separate computers and communicate via the network
3. Discussed the setup for the demonstration of the Phoebus alarm system, Fig. 1
   - A standalone computer runs the laser interlock simulator, separate from the Phoebus alarm system software packages computer
   - The laser interlock signal simulator is used as the EPICS PV source for alarms
   - Since the Phoebus alarm system monitors PVs on the network sourced by software and hardware IOCs via EPICS channel access, this demo closely mimics the hardware and software used in the EIC DIRC Phoebus alarm system test

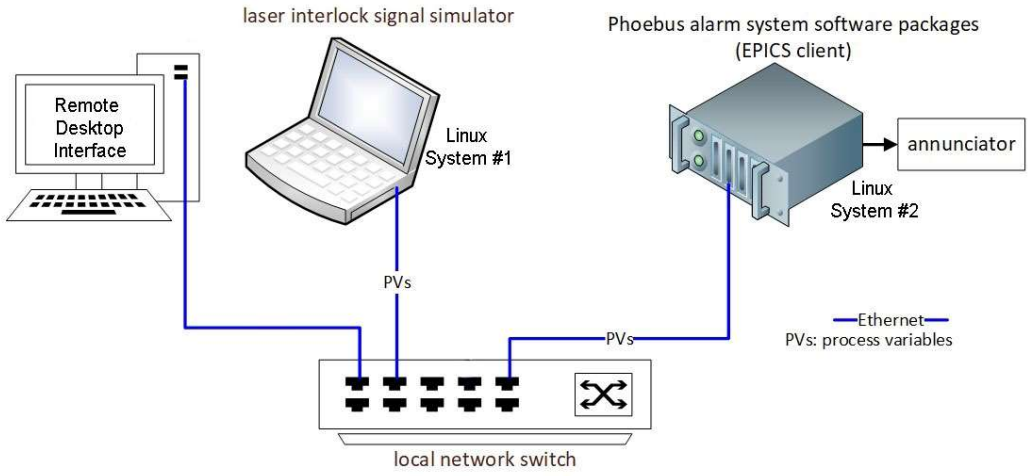

FIG. 1. Demonstration of the Phoebus Alarm System Test with EIC DIRC Laser Interlock Signal

- For the demo, Fig. 1, an MS Windows computer running ZOOM connects via dual remote desktop connections to the laser interlock signal simulator computer (Linux System #1) and the Linux development computer with the Phoebus alarm system software packages (Linux System #2)

2. Test of the EIC DIRC Startup Procedure and Applications

Peter Bonneau

1. Demonstrated via remote desktop connection to the Linux System #1, Fig. 1, the laser interlock signal simulator was started via a Linux terminal window
2. The Phoebus main application window was started, and the layout file *EIC-DIRC-SIMULATOR*, Fig. 2, was run

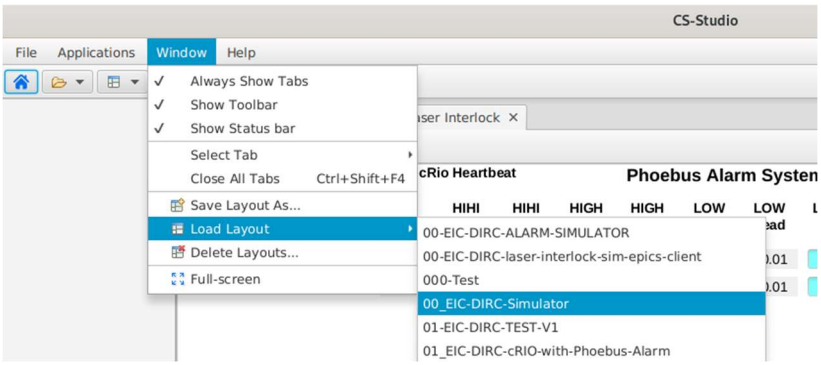

FIG. 2. Load the Phoebus layout *EIC-DIRC-SIMULATOR*

3. The layout file started the Phoebus user interface for the laser interlock signal simulator. The PVs and EPICS alarm limits were checked for correct operation, Fig. 3, via a Phoebus EPICS client connection to the simulator

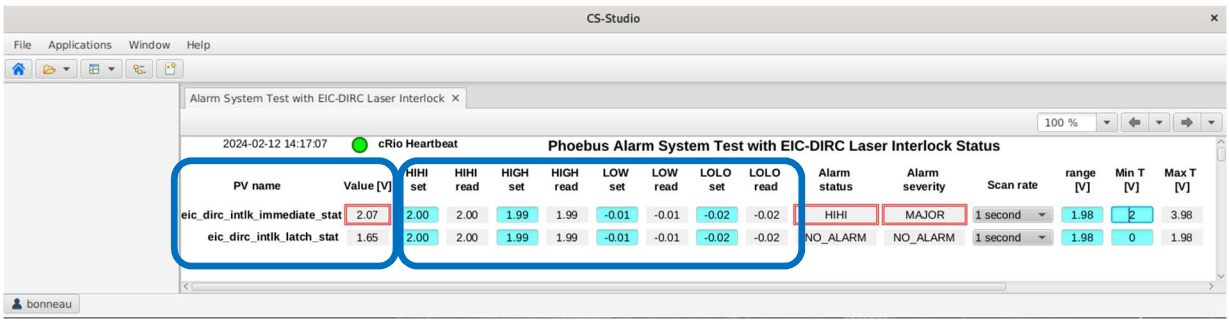

FIG. 3. Verification of Laser Interlock Signal Simulator and EPICS PV Alarm Limits via Phoebus user interface

4. Demonstrated via the remote desktop connection to the Linux System #2, Fig. 1, the Phoebus alarm system software packages were started
   - Phoebus alarm system software packages are run in manual mode
   - System software packages were started via four Linux terminal windows
     Terminal software packages sequencing:
     - Kafka Zookeeper (pre-configured and tested specific to EIC DIRC simulation)
     - Kafka Server (pre-configured and tested specific to EIC DIRC simulation)
     - EIC DIRC Phoebus alarm server
     - Program monitoring the three EIC DIRC alarm system Kafka message streams
5. Phoebus main application window was started and ran the layout file *EIC-DIRC-TEST-V1*
6. The layout file automatically started the Phoebus alarm system programs:
   - Phoebus display for the laser interlock signal simulator monitoring and control
   - Phoebus alarm system table

- Phoebus alarm system status tree
- Phoebus alarm system signal summary
- User interface for the laser interlock signal simulator and the PVs and EPICS alarm

7. Verifed the alarm generation and detection by the Phoebus alarm system when interlock PVs meet or exceed EPICS user-defined limits, Fig. 4

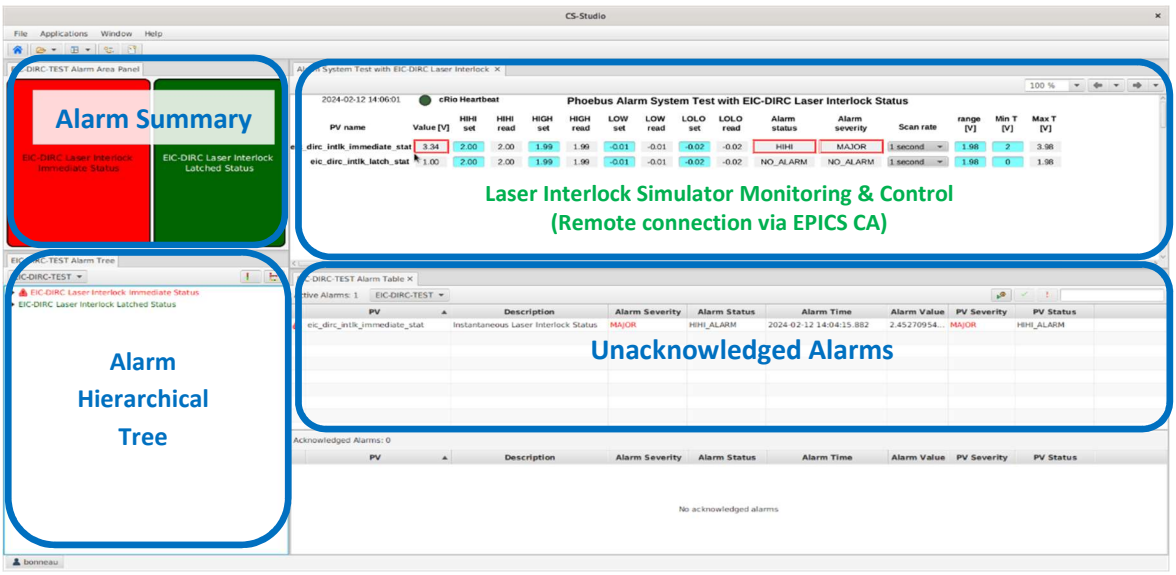

FIG. 4. Phoebus user interface for the Phoebus Alarm System Test with EIC DIRC Laser Interlock

3. EIC DIRC Phoebus Alarm System Test

Tyler Lemon and Mindy Leffel

1. The cable for the connection between the EIC DIRC laser interlock enclosure and the Phoebus alarm system cRIO has been ordered
2. LabVIEW has been loaded onto the EIC-DIRC cRIO