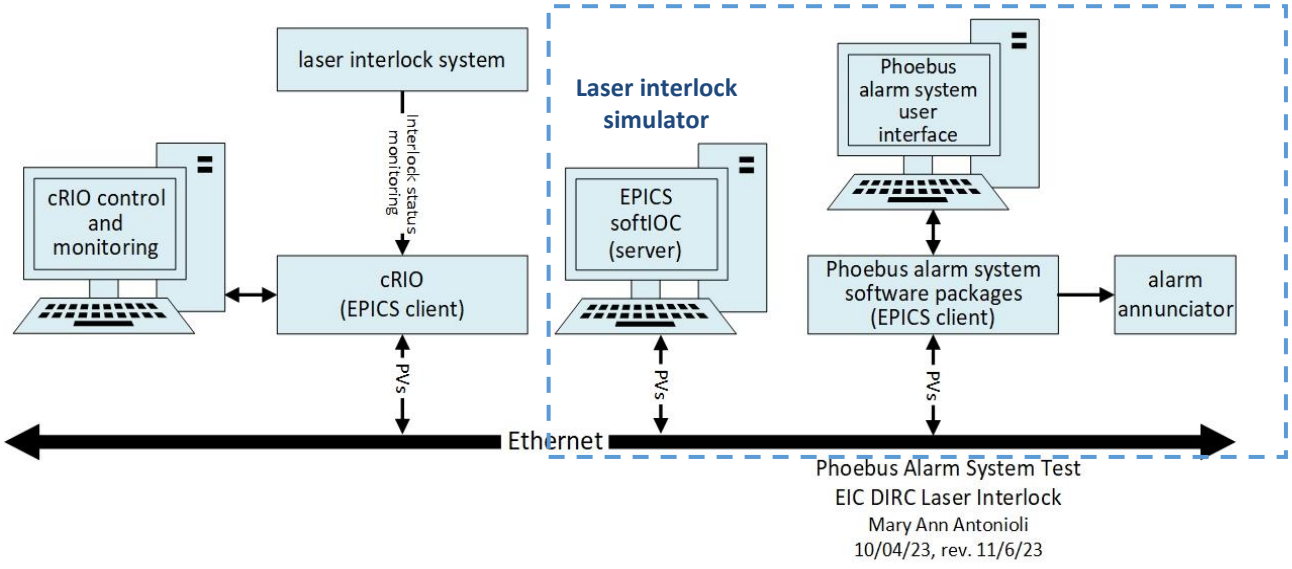
DSG-R&D Phoebus Meeting Minutes

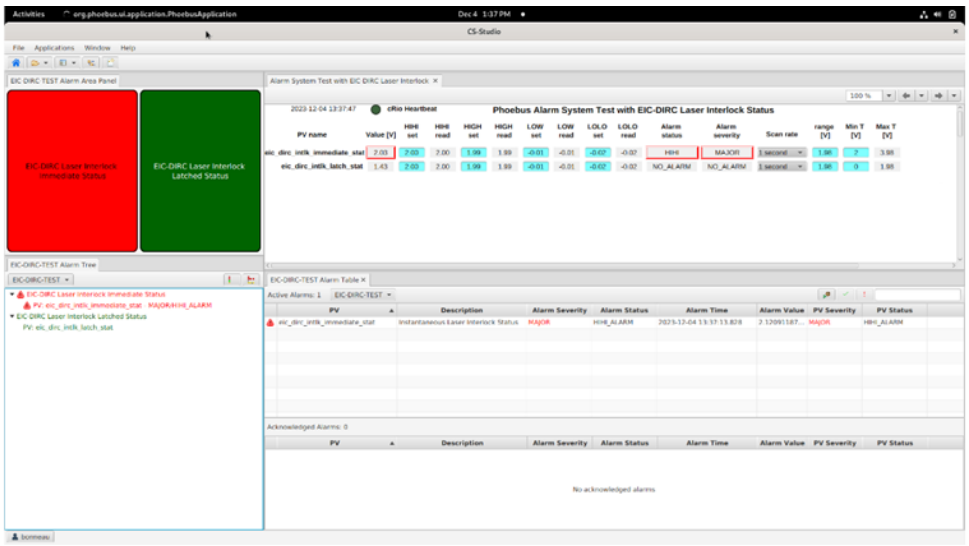
Date: December 08, 2023
Time: 2:00 PM – 3:00 PM

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

1. **EIC-DIRC Phoebus Alarm System Test with Laser Interlock Signal Simulator**
   Peter Bonneau and Tyler Lemon
   1. Discussed Phoebus alarm system stability test
      - On EIC-DIRC alarm system development computer, an extended test is being run to check system stability
      - The system has exhibited unstable operation at times using external SSD
        – DSG Note 2023-06, DSG Note 2023-03
        – Corruption in Phoebus 4.6.10 files was suspected, possibly due to computer/disk
      - EIC-DIRC laser signal simulator softIOC generates EPICS PVs
        – The softIOC generates simulated laser interlock signal PVs at 1 Hz
        – In the test setup (DSG Note 2023-43, DSG Note 2023-49), the simulator is replaced with a standard EPICS softIOC using analog records using the same PVs
      - Phoebus alarm system monitors the simulated EPICS PVs
        – Alarm system reports on PVs that are in an EPICS alarm state
      - System has run without errors for 12 days as of 12/05
      - Alarm system correctly reported the PVs that were configured to generate alarms
      - Phoebus alarm table, alarm tree, and alarm area panel working correctly



Verification of Phoebus alarm system software using EPICS softIOC simulator

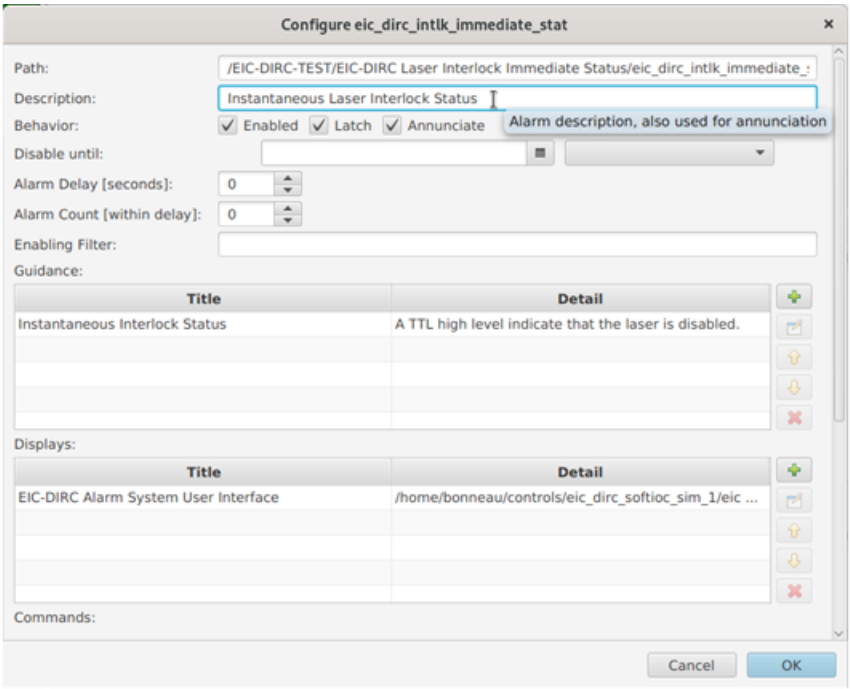


Phoebus Alarm Stability Test – EIC-DIRC Laser Interlock Simulator Controls & Monitoring / Alarm Table /Alarm Tree / Alarm Area Panel Nodes

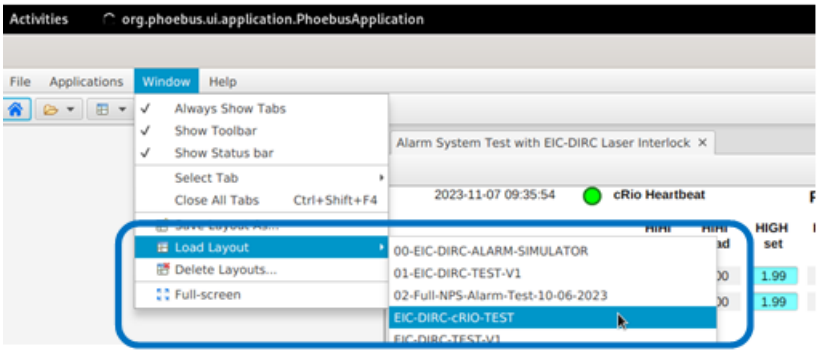
2. Phoebus Alarm System Operation with EIC-DIRC EPICS SoftIOC Laser Interlock Simulator

Peter Bonneau

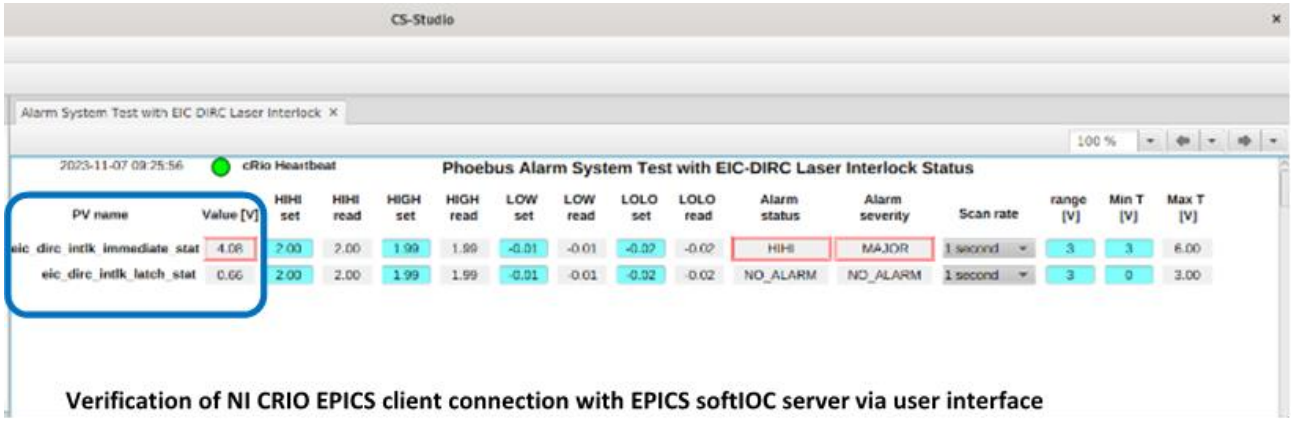
1. Demonstrated the use of the program terminal windows for debugging, observation of common errors, and system recovery of the Phoebus alarm system software packages after network outages and other system issues
   - System was run in manual mode
     - Phoebus and alarm system software packages started via terminal windows
     - Terminal windows display program status for application debugging
   - Terminal windows used for Phoebus software packages
     - Kafka Zookeeper
     - Kafka Server
     - Simulator EPICS softIOC/EPICS softIOC server
     - Phoebus alarm server
     - Phoebes main application (terminal and user interface)
     - Test program for monitoring the EIC-DIRC alarm system Kafka message streams
   - Recovery of the Phoebus alarm system software packages after network outages, etc.
     - Phoebus alarm server
     - Phoebus main application
   - Phoebus main application layout files developed
     - *EIC-DIRC-ALARM-SIMULATOR*
     - *EIC-DIRC-cRIO-TEST*



EPICS PV Alarm Parameters User Interface Configuration Menu for EIC-DIRC Laser Interlock



Loading the Phoebus Layout: *EIC-DIRC-cRIO-TEST*



Verification of NI CRIO EPICS client connection with EPICS softIOC server via user interface