DSG-R&D Phoebus Meeting Minutes

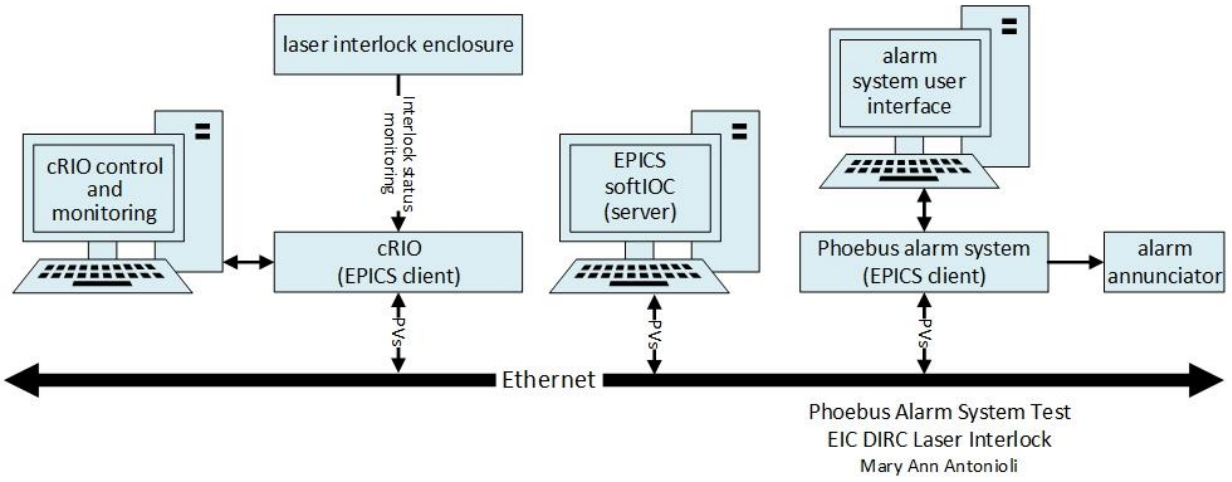
Date: October 13, 2023
Time: 2:00 PM – 2:20 PM

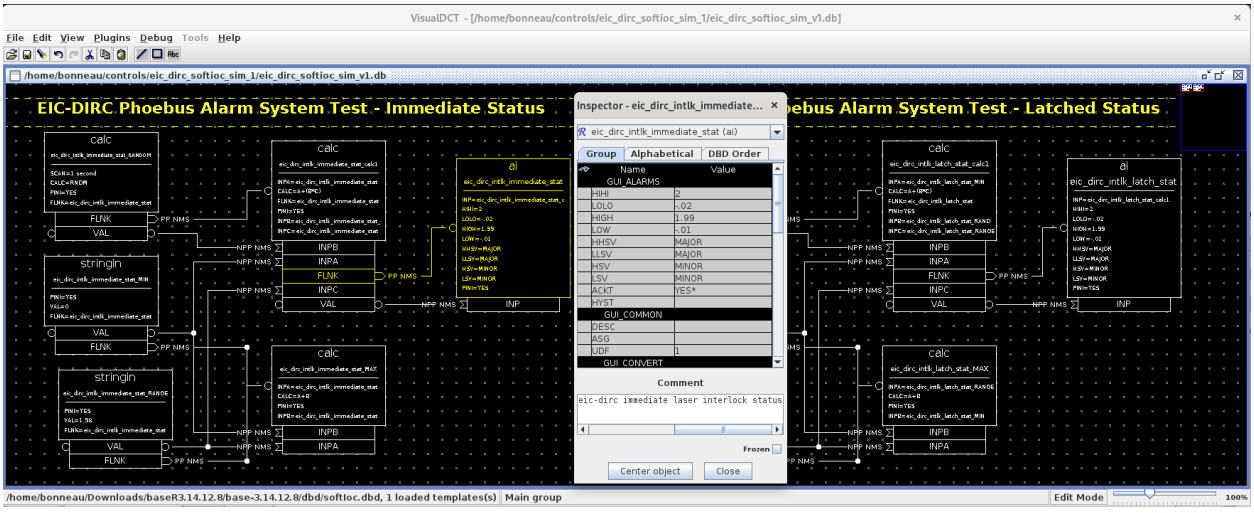
Attendees: Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, and Marc McMullen

1. Development of EPICS softIOC for EIC-DIRC Phoebus alarm system test

Peter Bonneau and Tyler Lemon

1. Discussed softIOC required to test the Phoebus alarm system software packages developed for the EIC-DIRC laser interlock
    - SoftIOC simulates the laser interlock monitoring PVs received from the NI cRIO
    - SoftIOC generates alarms when interlock PVs meet or exceed user-defined limits
    - Tests the Kafka Zookeeper and Kafka server programming developed specifically for the Phoebus alarm system test with the EIC-DIRC laser interlock
    - Tests the programming developed for the Phoebus alarm server
    - Tests the Phoebus alarm system user interface developed for the EIC-DIRC test
    - EPICS EIC-DIRC softIOC developed with VisualDCT



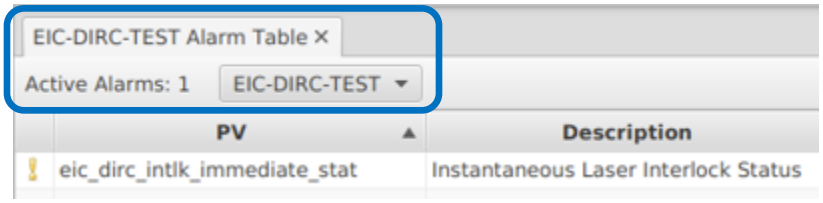


EPICS SoftIOC Database Developed with VisualDCT for Phoebus Alarm System Test with EIC-DIRC Laser Interlock

2. Development of user interface for EIC-DIRC Phoebus alarm system test

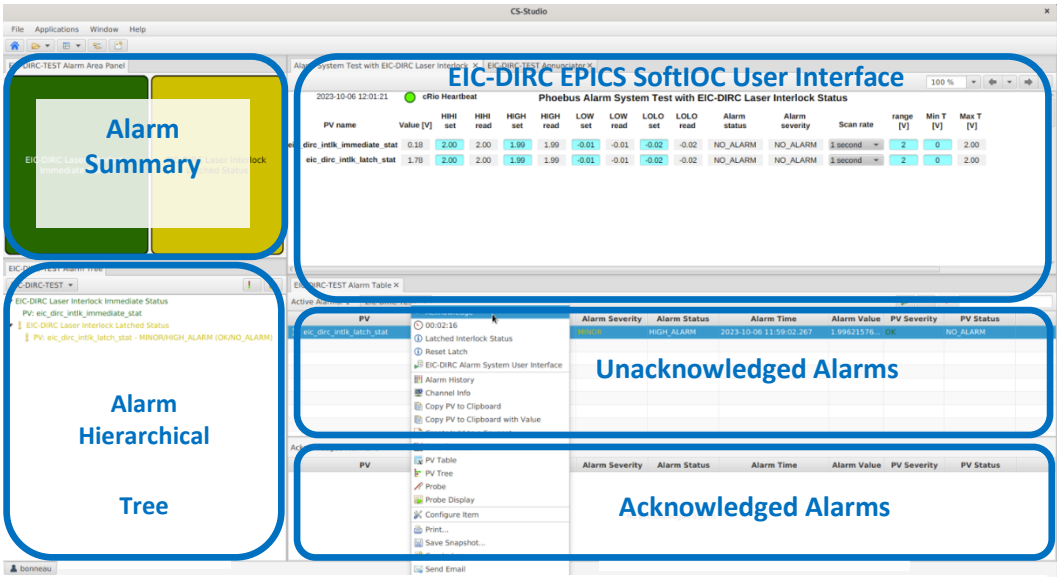
Peter Bonneau

1. Discussed Phoebus alarm system configuration for EIC-DIRC Kafka message streams
   - Pull-down menu for alarm app configuration is set to EIC-DIRC as the default
   - Required the recompiling of the Phoebus application from source code



Configuration of User Interface for the Phoebus Alarm System Test with EIC-DIRC Laser Interlock

2. Reviewed Phoebus user interface for EIC-DIRC softIOC control
   - Sets the random number or fixed value generation limits for the simulated laser interlock PVs
   - User control of PV alarm limits – levels are the simulated TTL voltage levels from the NI ADC
   - Sets scan rate (generation frequency of simulated PV)
   - Reads the PV value of simulated laser interlock status values (volts)
   - Reads the PV alarm status for instantaneous and latched laser status signals
   - Same user interface screen and PVs can be used for the real-time signal test



Phoebus User Interface for the Phoebus Alarm System Test with EIC-DIRC Laser Interlock

3. Discussed Phoebus alarm system user interface
   - Displays status of current PV alarms
   - User acknowledgement of alarms
   - Configuration of alarm parameters for each EPICS PV

3. Revision of Phoebus alarm system Kafka message streams

Peter Bonneau

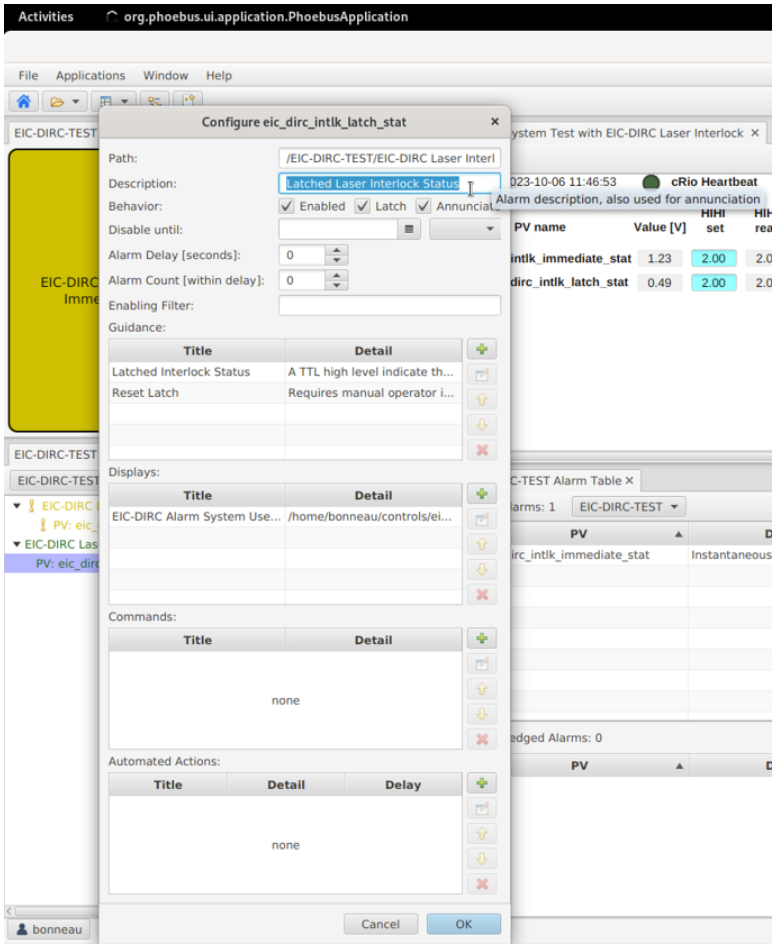
1. Discussed dual mode developed for Kafka message streams on test system

- Allows running of the NPS simulation and the new EIC-DIRC laser interlock alarms
- Capable of running either EIC-DIRC alarm system or NPS or both at the same time
  - Successfully tested running of multiple alarm systems concurrently

4. Phoebus alarm system operation with EIC-DIRC softIOC laser interlock simulator

Peter Bonneau

1. Demo of the operation of the Phoebus alarm test system with EIC-DIRC softIOC
   - System will be run in manual mode
     - System core programs started via terminal windows
     - Terminal windows display program status for new application debugging
   - Manual startup core program sequencing
     - Kafka Zookeeper (specific to EIC-DIRC simulation)
     - Kafka Server (specific to EIC-DIRC simulation)
     - EPICS EIC-DIRC simulator softIOC startup and initialization
     - EIC-DIRC Phoebus alarm server
     - Phoebus user interface for EIC-DIRC test
     - Monitoring of the three EIC-DIRC alarm system Kafka message streams (optional)
   - Operation and monitoring of user interfaces: softIOC, alarm acknowledgement, alarm tree, and alarm area panel



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