Demo on New Collaboration Capabilities for LCLS Remote Operations

LCLS ECS Team
Outline

*Overall goal is to enable remote experiment teams to be virtually present for their beamtime*

- Teleconference tools
  - Zoom
  - Owl and webcams
- Visibility into the running experiment
  - Desktop streaming
  - Desktop sharing
- Visibility into the instrumentation
  - Hands-free Remote Collaboration Tool RealWear HMT-1
- Future work
  - eLog expansion
- Q&A
Collaboration during beamtime

Users used to come onsite for their experiment: present in the control room and able to view the status of the control system and analysis.

Camera images, data displays available at fingertips, no latency communication between teams and staff.
Welcome to the Video Conferencing World

Owl

Webcams

slack

zoom
Visibility into the running experiment: desktop streaming

Conference consoles in the control room capture real time streams from the experimental consoles and make them available to the user through Zoom - in addition to the webcam and Owl streams.

Conference console(s)

Experiment console

Webcam(s)

Owl

LCLS user on Zoom
Visibility into the running experiment: desktop sharing

We plan to adopt NoMachine (NX) for desktop sharing

- Already used in LCLS for remote access to preserve status between sessions
- Cross-platform
- Unlimited desktops on a host
- Ease of use
- Several sharing tools and features:
  - File transfer
  - Session recording
  - Communication features: whiteboard, chat tool, and VOIP
Visibility into the running experiment: desktop sharing

Similar capability to capture streaming but in software
Cons: use resources on the experiment console
Pros: all screens at once; could be made interactive if needed
Sample preparation, end station setup

Before covid, users could be on-site to help establish interaction points, multiple people could work in close proximity to get things ready.
Visibility into the instrumentation: Hands-free Remote Collaboration Tool

RealWear HMT-1
eLog expansion (work in-progress)

Add more web capabilities, through the electronic logbook, for experiment monitoring and control, for example:

- Desktop streaming through the web
- EPICS Archive Viewer
- EPICS Screens
- Data Analysis Job Management

more on the way