CURRENT AND FUTURE DEVELOPMENT OF
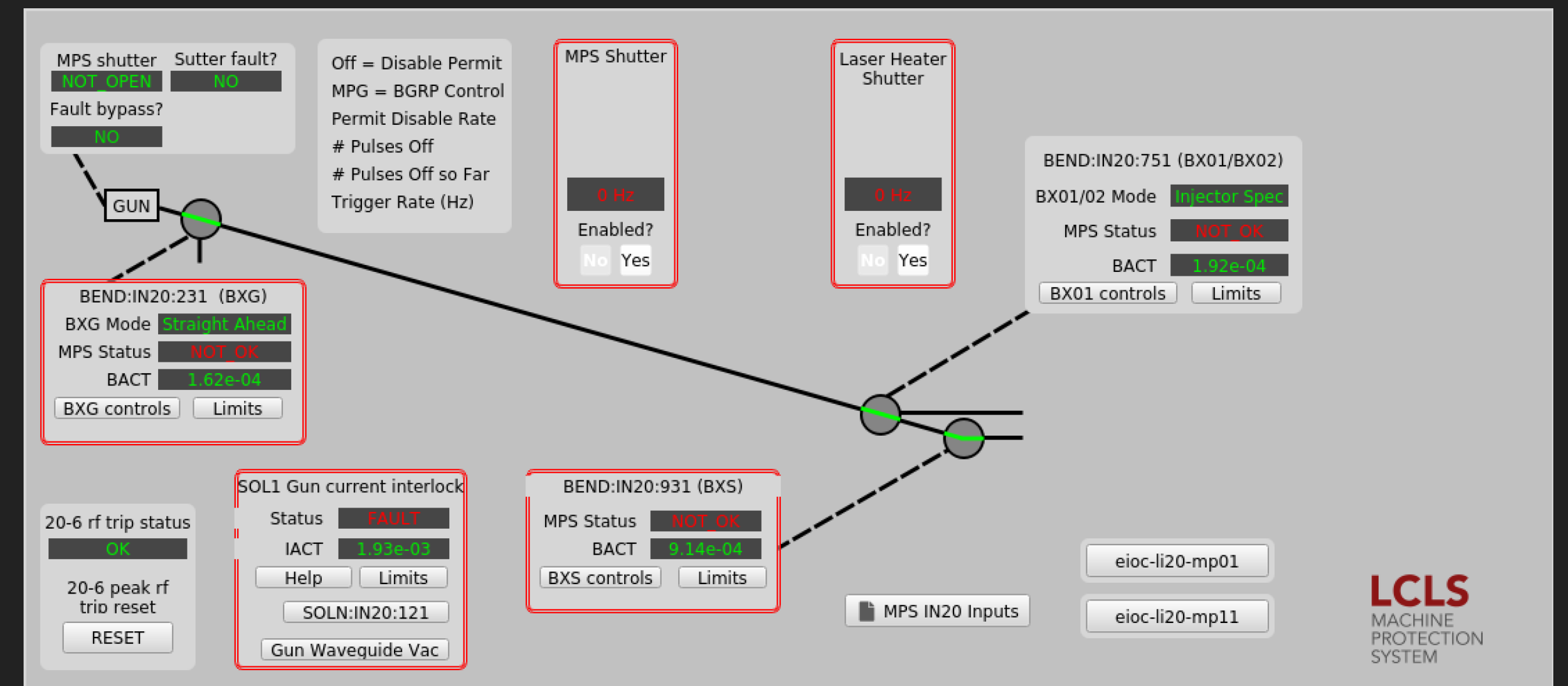
PYDM

U.S. DEPARTMENT OF **ENERGY** | Stanford University

SLAC NATIONAL ACCELERATOR LABORATORY

WHAT IS PYDM?
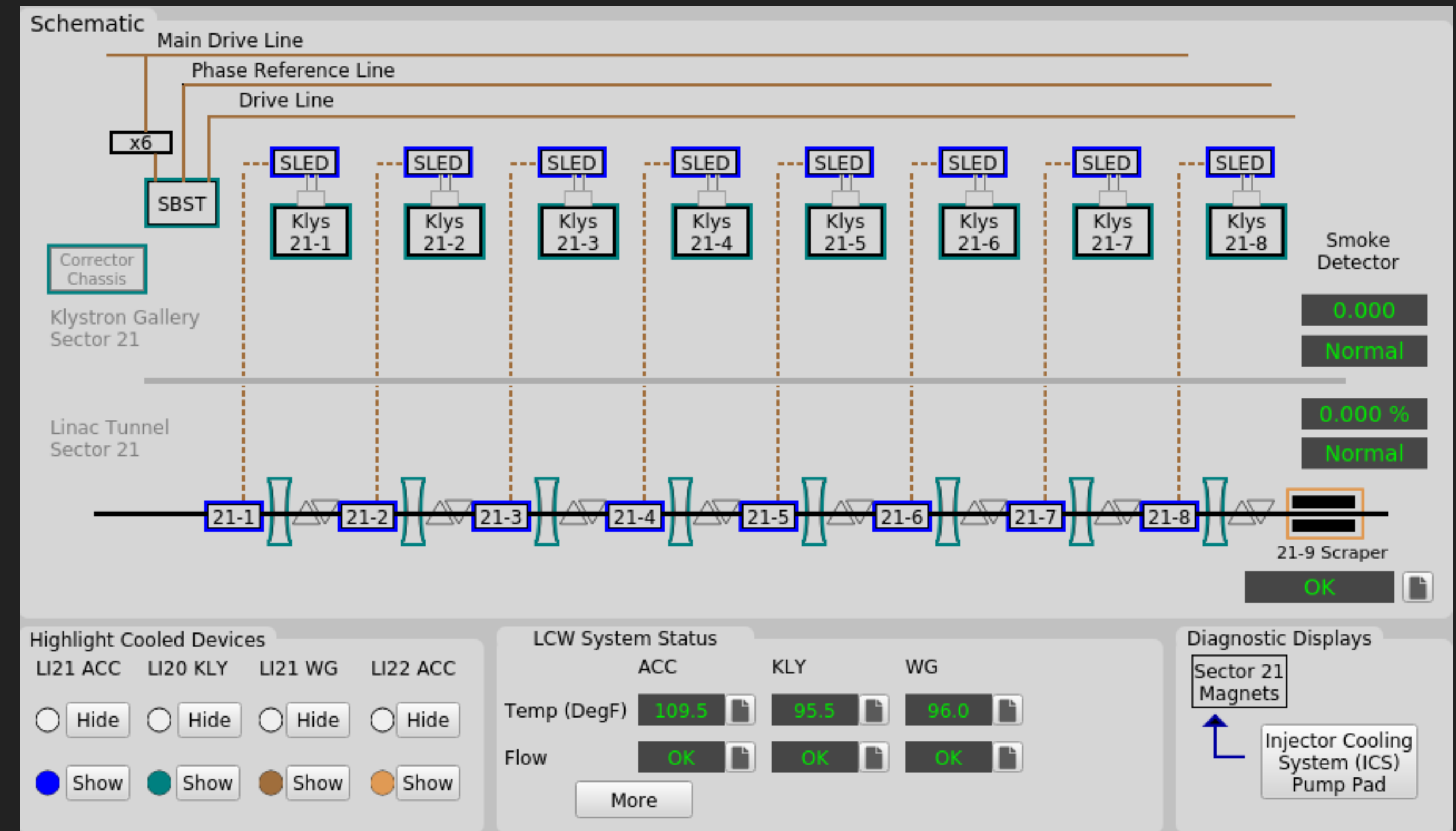

▶ Python Display Manager - PyDM

▶ PyDM is an open-sourced PyQt-based framework for building user interfaces for control systems.

▶ Actively being developed and deployed at SLAC National Accelerator Laboratory since 2016

▶ SLAC began developing PyDM as a single tool to build physics applications and replace EDM

A PyDM Screen for the Machine Protection System in LCLS

BENEFITS OF PYDM

- ▶ Python has a large developer base and large standard library and 3rd party library support

- ▶ Built on QT, an established industry solution to graphical interfaces

- ▶ Open-source

- ▶ Screens can be made in pure python, in QT Designer or a hybrid of both

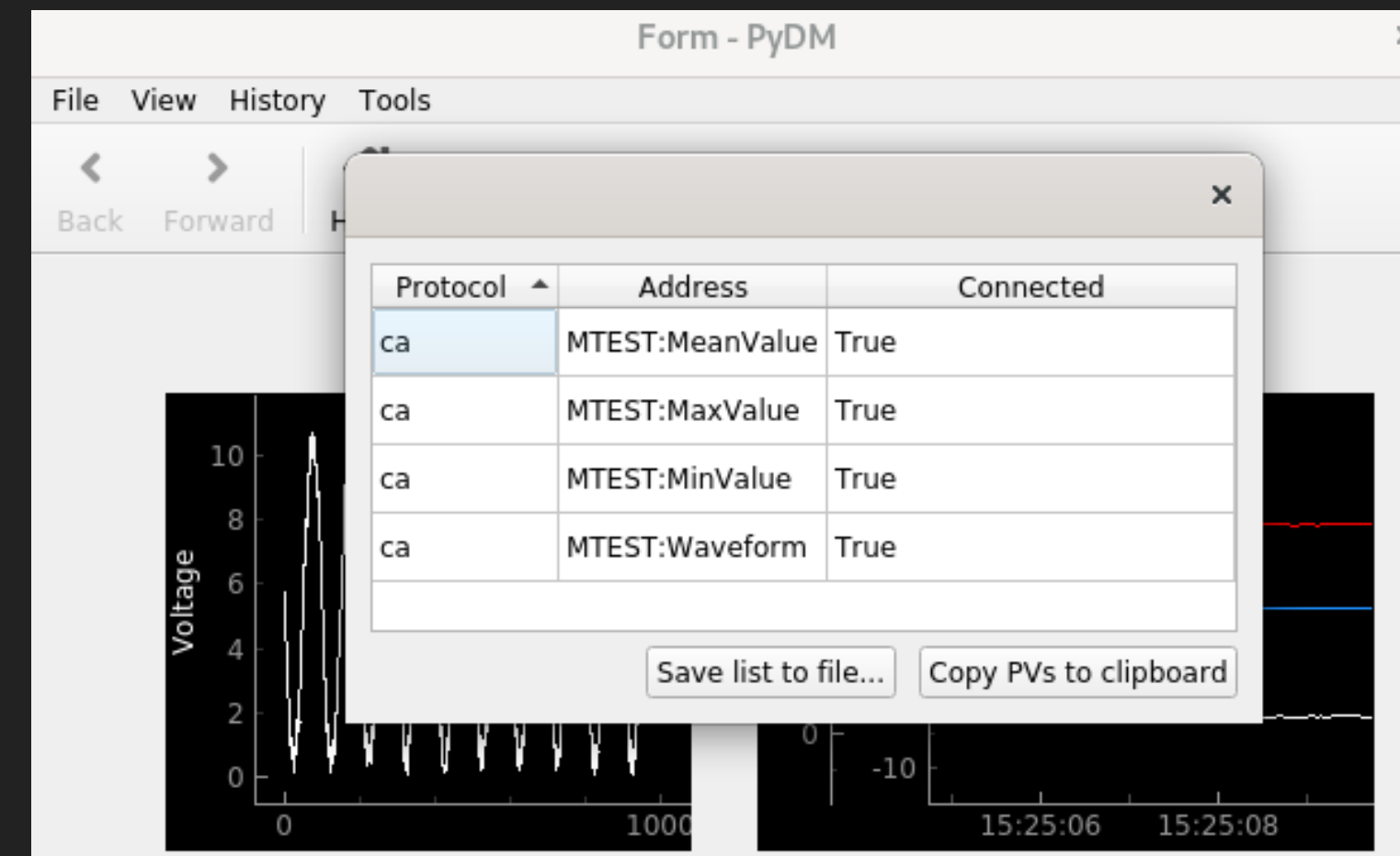Utility screen detailing water cooling for LCLS
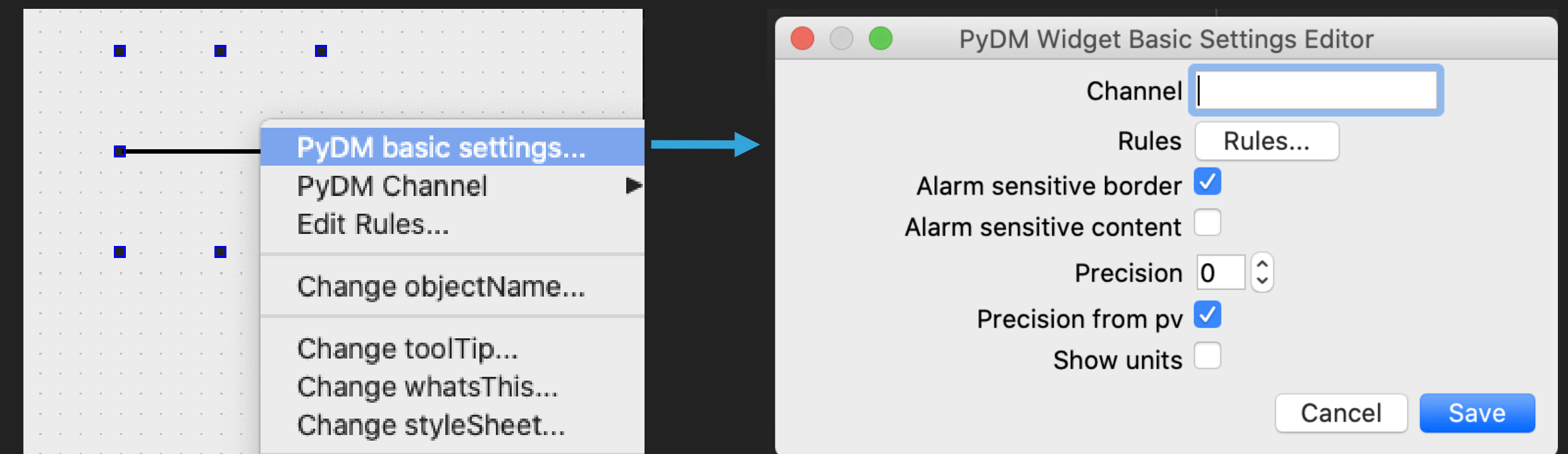
RECENT DEVELOPMENT

▸ New Calc and Local plugins

- Enables the ability to do some logic and mathematical calculations within the GUI

▸ New custom editors in QT Designer

- Creating a more user friendly approach to modify widget properties in QT Designer

▸ Discontinued support for python 2

- Support Python 3.6 and above

▸ Addition of PVAccess

- P4P Package

- Image viewer, passes a NTNDArray
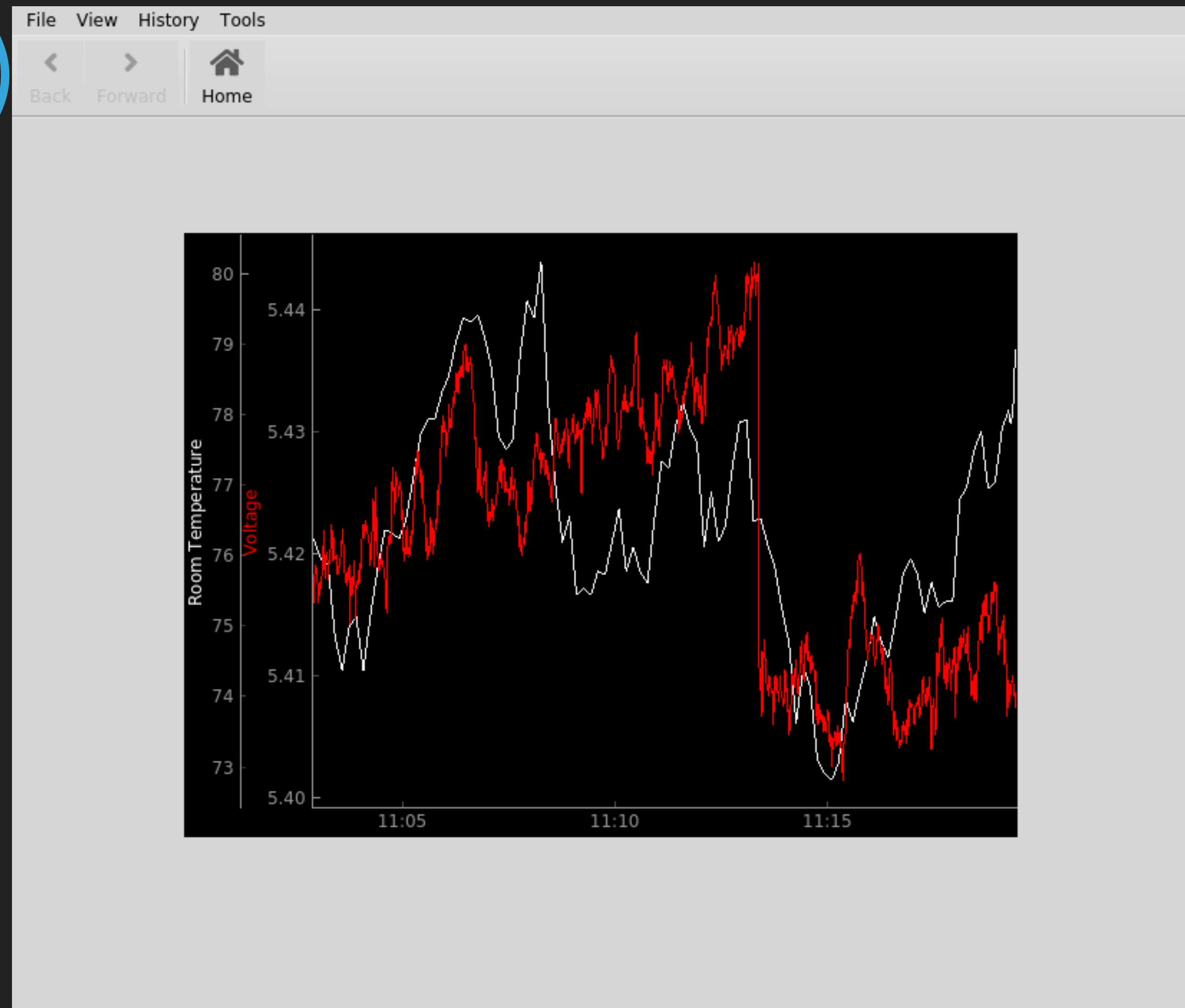

Copy all PVs from connection inspection menu

Basic Settings Editor

RECENT DEVELOPMENT (CONT.)

▸ New and improved graphing widgets

- Added zooming, multiple y axis, among other new functionality for the graphing widgets

- Ability to display time and waveform graphs as bar graphs

- Ability to display archiver data on time plots

▸ New and improved custom widgets

- PYDMAnalogIndicator, PYDMDrawingIrregularPolygon

- Usability improvements to PYDMSlider, PYDMDrawingLine

Archiver data will fill in on a time plot

FUTURE OF PYDM

▶ Custom widgets which better provide utilization of PVAccess

▶ Expand collaborators

▶ Looking into building a custom editor

　　● Slimmed down, more intuitive for users to learn

THANK YOU FOR 5 MINUTES OF YOUR TIME

▸ Online Resources:

  ▸ PyDM Documentation:

  • https://slaclab.github.io/pydm/

  ▸ PyDM GitHub - To report bugs, request or submit new features, and get the project source code

  • https://github.com/slaclab/pydm
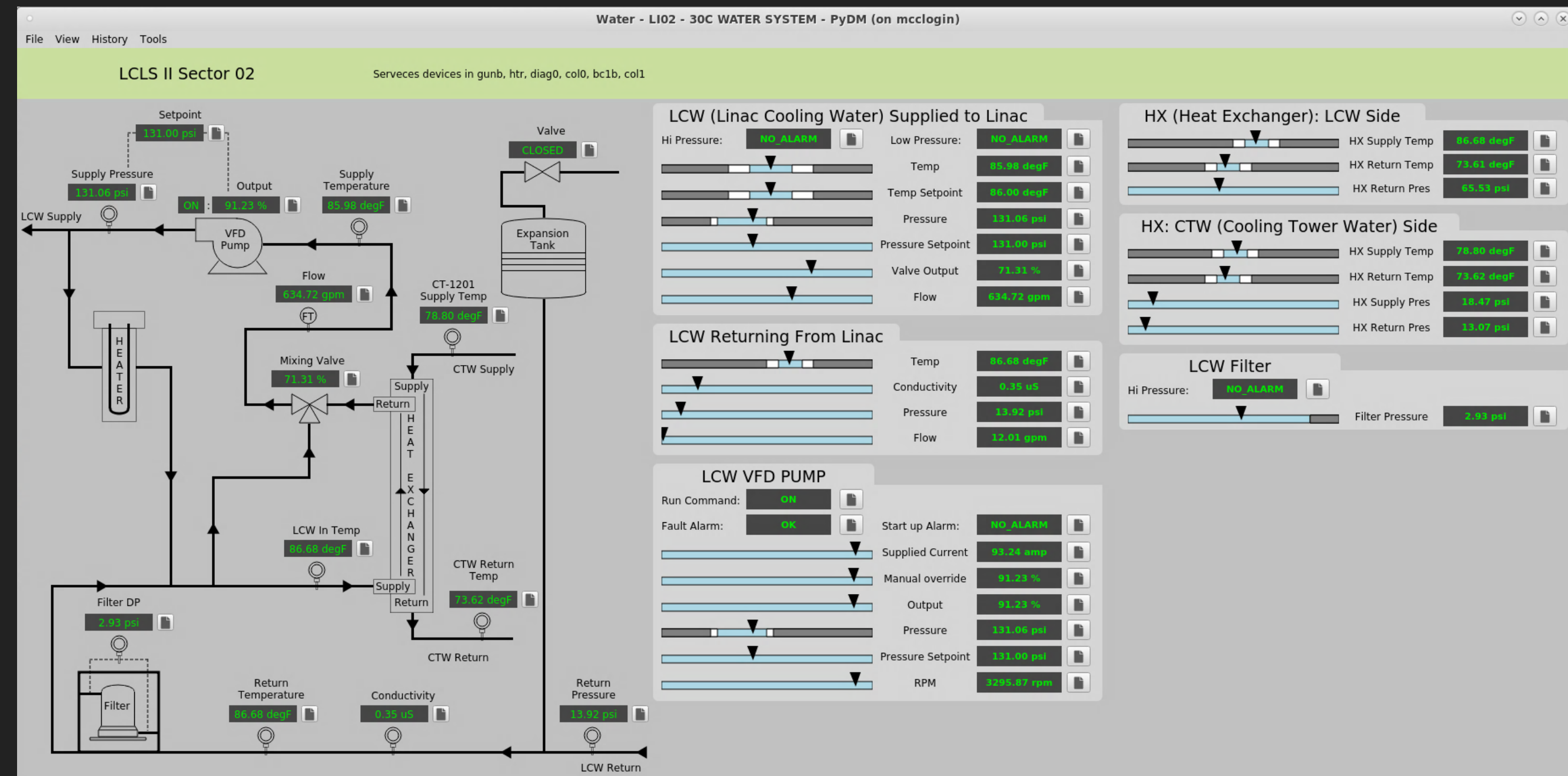
▸ Reach out to the PyDM team to ask any question about PyDM or learn more about the project:

  ▸ Current PyDM Developers at SLAC

  • Jesse Bellister, jesseb@slac.stanford.edu

  • Matt Gibbs, mgibbs@slac.stanford.edu

  • Yekta Yazar, yazar@slac.stanford.edu

Low connectivity water diagnostic display for LCLS II