Notes on the PLC(s)

Cubism - Braque's Bottle and Fishes, Paris c.1910-12

ArgonCube Engineering call
November 20th 2020
James Sinclair, LHEP

PLC systems

We have two PLCs, one from Fermilab and one from ArgonTube.

For fast testing, we have been modifying ArgonTube system.

We now need to transfer to the Fermilab system in preparation for 2x2. Ideally this would be ready for the March run.

New components to integrate

PID logic can be transferred over from the ArgonTube, but we will need help from Fermilab.
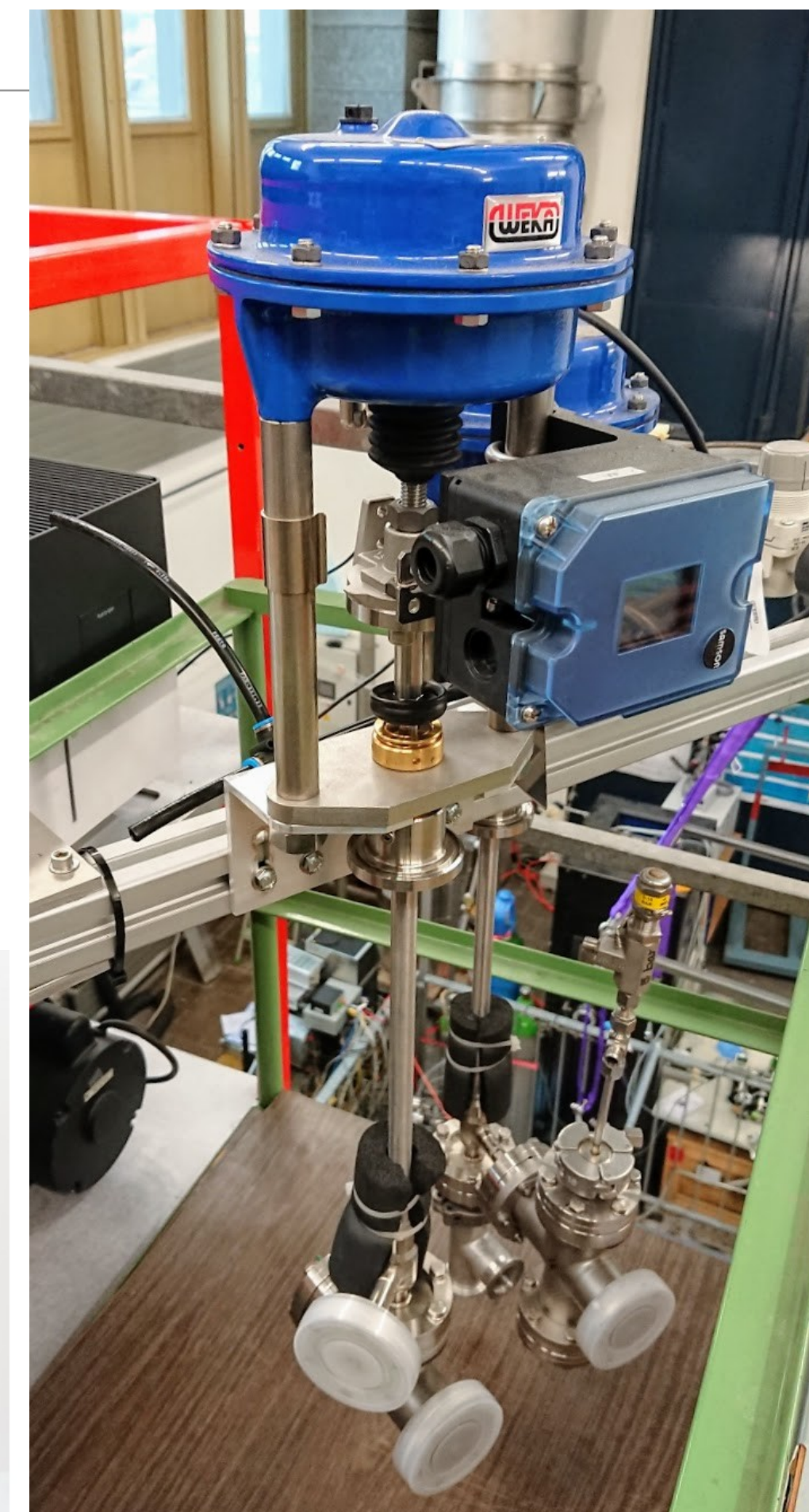
Systems to be integrated are:

LAr circulation:
BN HeP-36-000 pump and Toshiba VFS15S-2015PL-W1 VFD
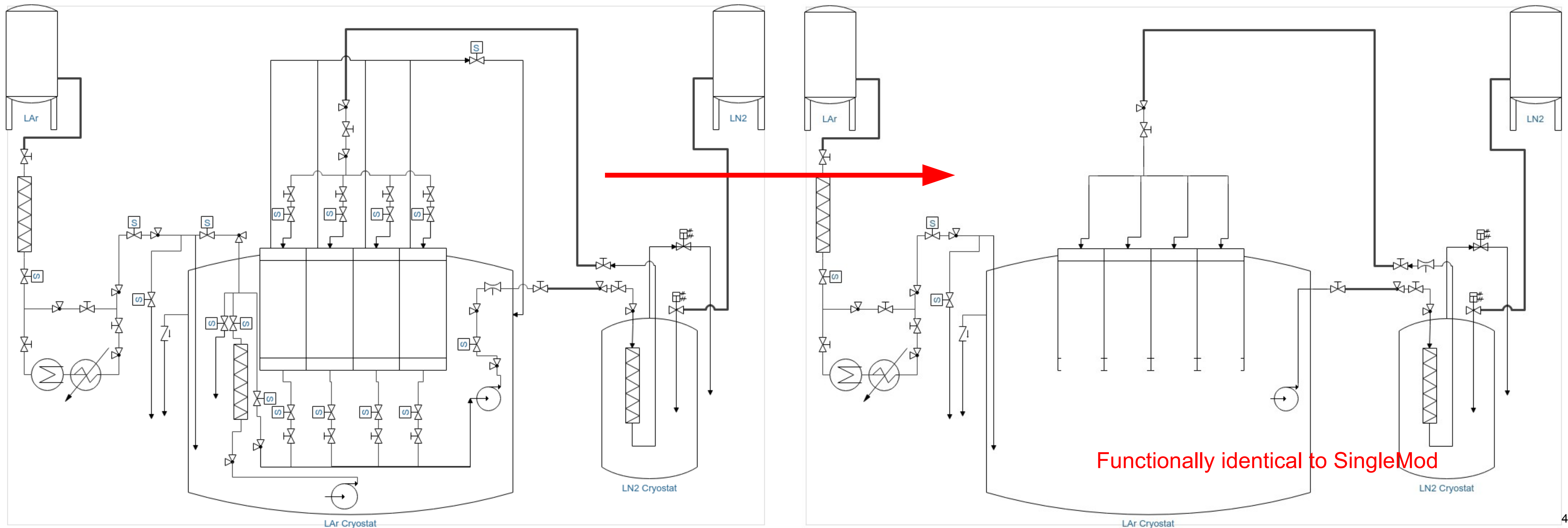8F5B25 Promass F 500 Coriolis Flowmeter

LN2 cooling:
Weka low pressure control valves PM-TEQV DN6/ PN25 C-Ps/Po

Fermilab PLC redesign

The Fermilab PLC was built for a significantly more complex system. The 2x2 cryo scheme is transitioning to something more inline with the ND. The PLC needs rebuilding.

Functionally identical to SingleMod

Summary

For the next SingleMod run in March/April we want to start using the FNAL PLC.

This PLC needs redesigning for the SingleMod cryo scheme, which is functionally the same as the new 2x2 and closer to that of the ND.

The PID loops for most components have been developed in the ArgonTube PLC, the logic should be transferable.

We need help form FNAL (Trevor Nichols)

🟢 Fermilab