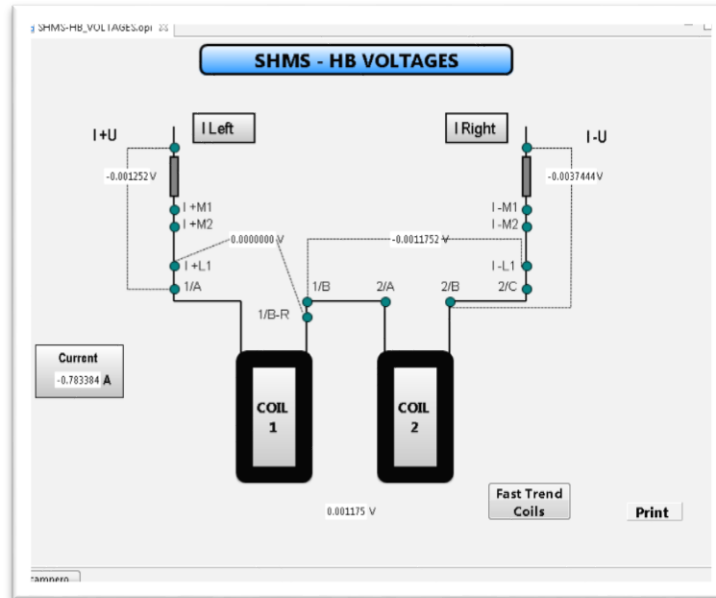


Summary

Hall C EPICS Slow Control Systems

- *SHMS HB Voltage Taps* OPI screen completed using EPICS-CSS Studio.
 - ★ New screen is based on PLC HMI Voltages screen, shows similar appearance and structure for the interface.
 - ★ OPI screen runs in real-time mode using PVs from accelerator host.



SHMS HB Voltages screen developed in EPICS-CS-Studio

- Spreadsheet generated with all SHMS PVs available on the PLC.
 - ★ These PVs are not available in the accelerator Host (129.57.255.12)
 - ★ Spreadsheet shows: PLC tag name, data type, scope, tag address, proposed PV name for EPICS, and description for each PVs.
- EPICS-IOC test server developed.
 - ★ PLC tag created on DSG PLC controller.
 - ★ Tag read by EPICS server running on dsg-linux2 PC (129.57.195.32).
- Python program created to convert CSS .opi files to EDM .edl files (opi2edl).
- Opi2edl program tested by converting SHMS HB Helium Temperatures CSS screen.
 - ★ Screen deployed to WEDM.
- Python program developed to convert CSV list of PVs to EDM screen (csv2edl).
- Hall C Cryogenics, HMS Cryo, and SHMS Cryo screens created using csv2edl program and deployed to WEDM.



Detector Support Group

Weekly Report, 2018-12-12

SHMS Cryogenics		
Helium Return Transfer Line	5.25	K
Helium Supply Transfer Line	6.08	K
LN2 Supply Temp	105.52	K
Particle Transport Vacuum	0.0000001	Torr
Transfer Line Vacuum	0.0000007	Torr
Dipole		
Average He Temp	4.65	K
LN2 Average Temperature	77.02	K
Warm He Return Temp	173.11	K
Cold Return Valve Position	95.53	%
Warm Return Valve Position	0.46	%
Nitrogen Supply Valve Position	-7.91	%
Supply Valve Position	20.05	%
Left Current Lead Flow	54.78	L/min
Right Current Lead Flow	55.01	L/min
Helium Pressure	1.47	mBar

Screenshot showing portion of SHMS Cryo WEDM screen created using csv2edl program. Screen lists all PVs provided for SHMS Dipole, HB, Q1, Q2, and Q3.

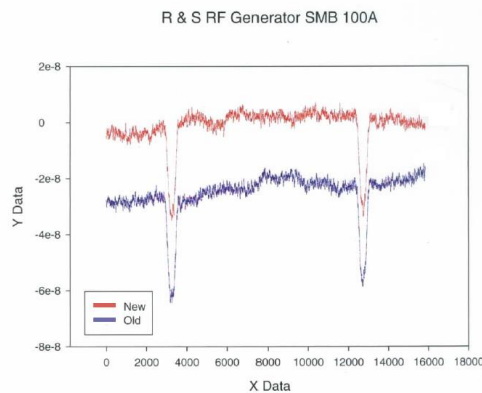
- HTML menu created for cryogenic WEDM screens for use during development.
- DSG group log-in set up on Hall C Linux server for EDM screen development.

Hall B Magnets

- Torus had controlled ramp-down due to unresponsive Fast DAQ cRIO.
 - ★ Couldn't ping or reboot cRIO remotely.
 - ★ Able to reboot using reset button on cRIO controller.
 - ★ Torus ramped back to full current after reboot.

HDIce

- New RF generator installed on rack and incorporated into FRS and NMR programs.
 - ★ Model name of RF generator changed in FRS to the correct name.



New RF generator signal compared to signal from old unit.

- Administrator privileges assigned for HDIce PC.

LTCC

- Wiring diagram for the LTCC Solenoid Power Chassis created.
- Forward Carriage GUI for gas system developed.



Detector Support Group

Weekly Report, 2018-12-12

Antonioli, Mary Ann

- Began LabVIEW code to test **cRIO** module 9239.
 - ★ Wrote dynamic range, gain error, integral nonlinearity, and offset error subVIs, added to overall test, and tested. Manual tests for module 9239 are completed.
- Removed labels from Hall A Hcal cables (22 cables x 2 ends = 44 labels).
- Made final edits to and posted Note 2018-29.
- Edited two presentations (Hall C EPICS and Solenoid Fast Dump Investigation).
- Attended Workers Safety Committee meeting.
 - ★ Supervisors are responsible for fire drill training.
 - ★ Sleep deprivation presentation going out to supervisors.

Bonneau, Peter

Hall C

Slow Control Systems

- Worked with Amrit, Amanda, Mary Ann, Pablo, and Tyler on the completion of an overall Hall C slow controls proposal talk.
- Held status and planning meetings on the implementation of EPICS in Hall C Control systems.

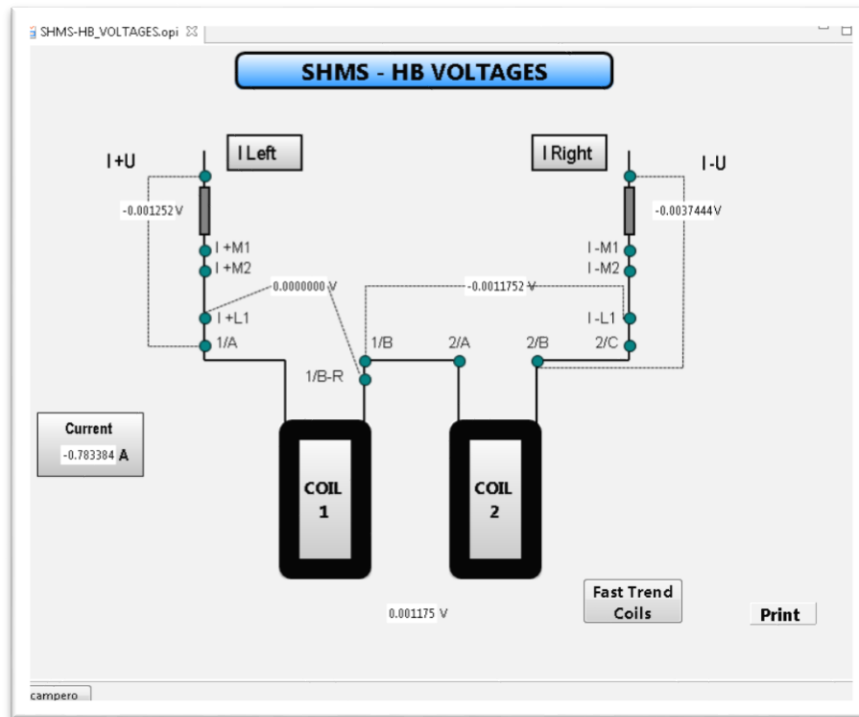
DSG

- Development of slow-controls system based on National Instruments single-board cRio (sbcRio) FPGA I/O.
 - ★ Code for the sbcRio's 3.5V FPGA DIO bus is under development as a direct interface to integrated Sensirion SHT75 temperature / humidity sensors.
 - ★ With 96 DIO channels, the FPGA bus could support 48 sensors with a single
 - ★ The Sensirion sensor uses a derivation of the I2C serial communication protocol.
 - ★ FPGA clock driver sub-vi's were developed and debugged for I2C serial protocol.
 - ★ Completed FPGA data decode sequence for humidity measurements

Campero, Pablo

Hall C

- Completed *SHMS HB Voltage Taps* OPI screen using EPICS-CSS Studio.
 - ★ New screen based on PLC HMI Voltages screen, shows similar appearance and structure for the interface.
 - ★ Successfully ran OPI screen in real time mode using PVs from accelerator host.



SHMS HB Voltages screen developed in EPICS-CS-Studio

- Generated spreadsheet with all SHMS PVs, which are not available in the accelerator Host (129.57.255.12)
 - ★ Table shows: PLC tag name, data type, scope, tag address, proposed PV name for EPICS, and description for each PVs.
 - ★ Completed with the addition of missed PVs on *SHMS-HB_He_Temp* screen.
- Collaborated with Amanda to test new EPICS-IOC server developed.
 - ★ Created PLC tag on DSG PLC controller to run test; PLC tag successfully read on EPICS server running on *dsg-linux2* PC (129.57.195.32).

Hall B – Solenoid

- Presented talk about the summary of the *MPS Water Flow Investigations*.

Eng. Brian

Absent

Hoebel, Amanda

HDIce

- Corrected FRS program to accept new RF generator.
 - ★ New RF generator was installed in Rack 1.
 - ★ FRS program was looking for previous version of RF generator.
 - ★ Model name of RF generator changed in FRS to the correct name.
- Debugged FRS program run-mode.
 - ★ Couldn't get the program to run. Appeared to lock up.



Detector Support Group

Weekly Report, 2018-12-12

- * Found the program was not locked up, it was searching for a higher power than what it was set to.
- * Noise was also too high to pick up signal.
- * Corrected parameters by increasing signal power.
- * Ran FRS program with the following parameters:
 - Power level -25 db.
 - Frequency range 1,000-5,000 KHz.
 - 100 events.
- Received admin privilege for HDIce PC.
 - * Started installing LabVIEW 2017.
 - * Will install LabVIEW 2018 after 2017 installs.

Hall C

- Installed VisualDCT to set alarm values for IOCs.
- Created database to read from and write to a test PLC tag and convert it to a PV useable by EPICS.
- Loaded read/write PVs in CSS.
- Wrote instructions on how to install and run ether_IP.
- Made corrections to current regulation routine from comments given by Hall C.

Jacobs, George

No report

Leffel, Mindy

Hall B

LTCC

- Started populating solenoid power chassis.
 - * Attached terminal blocks and connectors.
 - * Soldered wires to all eight three-contact connectors.

Hall A

Hadron Calorimeter

- Cabling project.
 - * Sorted two bundles, removed old labels, tested, and attached new labels.

Engineering Division

- Finished populating first VME FSD board for Machine Protection System, returned to fab group for inspection.

Lemon, Tyler

Hall C EPICS

- Developed Python program to convert CSS .opi files to EDM .edl files (opi2edl).
 - * Added ability to convert colors of widgets.
 - Colors of widgets in EDM depend on EDM's color configuration file.
 - In text of .edl file color of widget denoted by color palette index number.



Detector Support Group

Weekly Report, 2018-12-12

- Color palette index number is determined by what color palette configuration is used by host PC.
- ★ Program placed on GitHub for backup and version control.
 - <https://github.com/tmlemon/EPICS-conversions>
- Tested opi2edl program by converting Pablo's SHMS HB Helium Temperatures CSS screen.
 - ★ Screen successfully deployed to WEDM.
 - https://epicsweb.jlab.org/wedm/screen?edl=/cs/opshome/edm/hlc/spectrometers/test-SHMS-HB_HELIUM_TEMP.edl
- Developed Python program to convert CSV list of PVs to EDM screen (csv2edl).
 - ★ Each row of CSV contains PV, label text, and units.
 - ★ Program creates a text indicator for the PV, a label for the text indicator, and a label for the indicator's units.
 - ★ Program also allows PVs to be automatically grouped together on final EDM screen.
 - ★ Program placed on GitHub for backup and version control.
 - <https://github.com/tmlemon/EPICS-conversions>
- Created Hall C Cryogenics, HMS Cryo, and SHMS Cryo screens using csv2edl program and deployed to WEDM.
 - ★ Screens display cryogenic PVs given to DSG by Steve Wood in a list format.
 - ★ Screens (hms-cryo.edl, shms-cryo.edl, and cryo.edl) listed and can be viewed at:
 - <https://epicsweb.jlab.org/wedm/browse?dir=/cs/opshome/edm/hlc/spectrometers>

SHMS Cryogenics		
Helium Return Transfer Line	5.25	K
Helium Supply Transfer Line	6.08	K
LN2 Supply Temp	105.52	K
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Average He Temp	4.65	K
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Helium Pressure	1.47	mBar

Screenshot showing portion of SHMS Cryo WEDM screen created using csv2edl program. Screen lists all PVs provided for SHMS Dipole, HB, Q1, Q2, and Q3.

- Created HTML menu for cryogenic WEDM screens for use during development.
 - ★ Currently, the only way to get to WEDM screens is through a lengthy URL.
 - ★ For production version of screens, a menu option will be added to Accelerator's menu page.
 - ★ HTML menu temporarily hosted at userweb.jlab.org/~tlemon/wedm
 - ★ Also created a redirect page hosted at userweb.jlab.org/~tlemon/wedm/redirect to get to WEDM .edl file browser.



Detector Support Group

Weekly Report, 2018-12-12

- DSG group log in set up on Hall C Linux server for EDM screen development.
 - * Log in configured to use accelerator's EDM color palette rather than default to allow screens to be developed for WEDM without issues.

Hall B Magnets

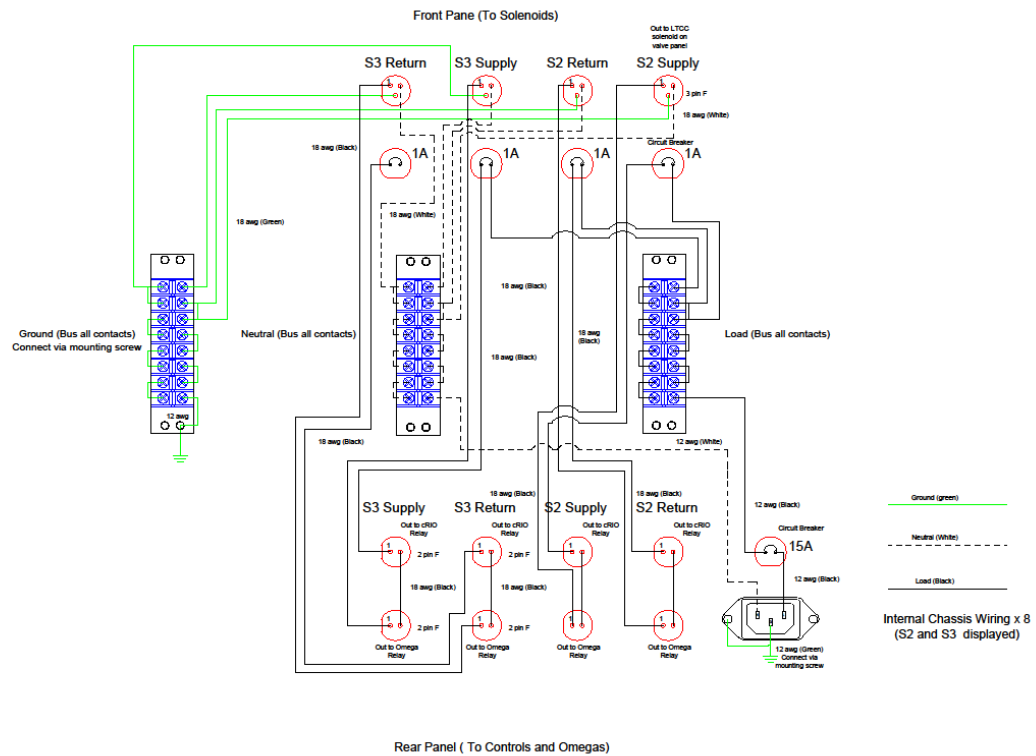
- Torus had controlled ramp-down due to unresponsive Fast DAQ cRIO.
 - * Couldn't ping or reboot cRIO remotely.
 - * Able to reboot using reset button on cRIO controller.
 - * Torus re-ramped to full current after reboot.

McMullen, Marc

Gas System

LTCC

- C4F10 supply scheduled to ship on 11/30 (delayed due to bad weather). Expected arrival to New York early to mid-December. Delivery to Jlab TBD.
- Made a new wiring diagram for the LTCC Solenoid Power Chassis. Test fitted the connectors and circuit breakers. Turned over the chassis to M. Leffel for fabrication.



- Continued work on LTCC controls software upgrade. Developed new Forward Carriage GUI. This GUI will contain all controls for the LTCC gas system. Started testing and debugging the LTCC FC GUI with the solenoid logic software.

DC

Moved SFL3 gas controls power from an extension cord to the local utility power outlet. Requested back-up utility power to be extended to that area.