Hall C-CAEN-SY4527 Test Results Shared with CAEN Support

Date: August 23, 2019 **Time:** 9:30 – 10:30

<u>Attendees</u>: Aaron Brown, Alberto Lucchesi, Greg Kibilko, Marc Mcmullen, Pablo Campero, Peter Bonneau, and Tyler Lemon

- 1. *HVCAEN-SY4527 EPICS Test Station* talk presented by Pablo Campero to show issues found during the mainframes and A7030/A1535 HV boards.
 - 1.1. Discussed about test conditions, procedure, and test parameters for CAEN HV boards.
 - 1.2. Explained EPICS-CSS screens developed to test SY4527 mainframes/HV boards.
 - 1.3. Form the test conclude that mainframe model SY4527, service name *hvcaentest2*, S/N 400 has CAEN software issues while is carrying A7030 or A1535 HV boards.
 - 1.3.1.Discrepancies between GECO2020 and EPICS PVs.
 - 1.3.2. Some board channels' parameters (*Vset, Iset, VRUp, VRdwn, and VMax*) arbitrarily changed from its pre-set values (set values at test time) to random values.
 - 1.3.3.Voltage vs time plots for all 36/24 channels showed in *Voltage Ramp Test* EPICS-CSS screens showed the random changes in above-mentioned parameters.
 - 1.4. Future task for DSG will be the development of a code by using CSS-Scan System to automate and speed up the test on the boards.
- 2. Discussion about the three users at Jlab who have experimented similar issues indicated in *HVCAEN*-SY4527 EPICS Test Station talk.
 - 2.1. User 1: Used CSS screens (EPICS client) to set/read PVs from CAEN EPICS server.
 - 2.2. User 2: Used cRIO EPICS clients to set/read PVs from CAEN EPICS server.
 - 2.3. User 3: Ran test by using only GECO 2020 to set/read parameters in SY4527 systems.
- 3. Marc Mcmullen presented his results with the issues found during CAEN-SY4527 hardware test performed for same mainframe S/N 400 and A7030/A1535 HV boards.
 - 3.1. Basic test stand setup for the test uses NI cRIO as EPICS client to write/read PVs in CAEN EPICS Service (running in CAEN SY4527) and external measurement devices (Keithley) to compare voltage/current readouts.
 - 3.2. Showed GECO2020 screenshots indicating the changes for *VRup* and *Iset* parameters during the test.
 - 3.3. Indicated the difficulties to work with *Radiall 52* connectors at CAEN-A7030 boards.3.3.1.The pin retention is not the adequate.
 - 3.3.2. Pins pushed in during Installation process.
 - 3.4. Noticed random changes for the channels' parameters.
- 4. CAEN support (Alberto Lucchesi/ Greg Kibilko) answered CAEN software questions
 - 4.1. SY4527 Control Firmware runs in the CPU (Mod. A4528).
 - 4.1.1. There is no changes for EPICS Service between 2.0.1 and 2.0.2 firmware versions.
 - 4.2. HiVoCS software runs in the CPU. Latest available version is 1.0.5.
 - 4.3. Secure Shell connection runs internally/locally in the mainframe and HV boards.

- 5. Suggestions by CAEN support to test SY4527 systems
 - 5.1. Test CAEN-SY4527 systems with only one board connected.
 - 5.2. Run test by using Secure Shell connection via SSH protocol to monitor if the mentioned parameters change randomly.
 - 5.2.1.For this test, CAEN recommended leaving the EPICS Server enable.
 - 5.3. Test results will be documented and shared with CAEN support.
- 6. CAEN support will look into more details of the DSG's presentation showing the issues mentioned and will contact DSG members with the solutions.
 - 6.1. Web links for DSG's presentations provided to CAEN support.