

## **HDice Controls Meeting Minutes of 2/24/2015**

**Present: Xiangdong Wei, Peter Bonneau, Dave Butler, Brian Eng, and Werth Teachey.**

- Both HDice computers are currently running Windows XP and Labview 8.5. These computers will require upgrading since XP is outdated and no longer supported or allowed on any Jlab networks. The LabVIEW version is also outdated and needs to be upgraded. Discussions on the details of the upgrade pointed out issues that need to be resolved.

Having the computers on the Jlab CUE (Common User Environment) is undesirable because of Computer Center controlled updates & reboots. In addition, CUE machines have single user auto-lock after only 15 minutes and auto-sleep in the evenings. We will explore several options regarding the computer upgrades including:

- Obtaining exceptions for the HDice computers from the Computer Center regarding the auto-updates, reboots, and single user auto-locking.
- Running the machines off CUE using a stand-alone dedicated HDice network.
- As requested by the HDice group, running LabVIEW on Linux will be explored.
- For the computer upgrade, new RS-485 hubs will also be needed since updated drivers are not available for the current hubs. A proposal for new hubs manufactured by National Instruments will be presented to the HDice group.
- Several systems for independent current measurements were presented. The first was an intelligent shunt system manufactured by ISAscale. This unit featured +/- 300A current range with built-in 16 bit data acquisition system with approximately .1% accuracy and a RS485 interface for ~ \$1K.

For higher accuracy, a DCCT (Direct Current Control Transformer) based system by CAEN was presented. This system featured a +/- 200 Amp range, 24 bit DAq, < .005% accuracy, built-in temperature compensation, integral power supply, local readback display, and multiple communication interfaces including USB, RS232, and Ethernet for ~ \$4600.

Xiangdong preferred the higher accuracy of the DCCT system for HDice. DSG will further investigate the CAEN and other DCCT systems.

- The status of the Mathematica analysis code effort was discussed. To test the NMR analysis code, an example of a data file is needed. Craig Thorn at BNL was contacted and he is looking for the correct file type.
- The NMR cables were discussed. In order to improve on the cables, a good understanding of the specifications and application of the current cables is needed. The cables originally came from BNL.
- Next HDice controls meeting will take place Tuesday, March 10th at 9:30 AM in the DSG Control Room (EEL R121C).