HDice Controls Meeting Minutes

10/06/2015

Present: Xiangdong Wei, Peter Bonneau, Brian Eng, Mary Ann Antonioli, and Sahin Arslan.

- **Hardware Status**
  - Test Station Hardware
    - Added to the Oxford power supply current loop, the DC Current Transducer provided by CAENels for their Current Transducer-Box.
      - The Oxford power supply, RF generator, Lock-in amplifier, and RF Attenuation/Switching chassis were repositioned to support the addition of the Current Transducer-Box.
      - The CAENels DC Current Transducer head fits the power-supply-output cable to the magnet correctly. For installation, the cable must be fed through the DC Current Transducer head prior to the crimping the high-current-rated lug at the end of the cable.
    - Received 2nd replacement computer.
      - Configuration, setup, and software installation is under way.
- **Software Status**
  - Rotation of Target Polarization Program
    - Testing the old VI drivers, which support communication with the magnet supply (Oxford), revealed instabilities in status read back.
    - Updating of code to support the sweep/hold function on the Oxford Power Supply is under way.
    - Updated program to include detailed error handling and status read-backs.
    - Added, for the operator, progress indicators to all steps of the rotation of polarization program.
    - For the final phase of testing of the rotation of polarization program, we must use two power supplies, one for axial and the other for transverse axis.
  - NMR Program - CAENels Current Transducer-Box System
    - The new fast-mode controls for the data acquisition program were reviewed.
    - Developed data processing sub-Vi's for the binary Current Transducer-Box data.
    - Added data file storage capabilities to the "Oscilloscope" mode of the data acquisition program.
    - Programmed calibration offset mode into to the data acquisition program.
    - Developed decoder code for current measurement, sequence number, and the status output.
    - Resolved Issues
      - The OFFSET: ZERO command is now working in the data acquisition program. This command is used to calibrate the DC Current Transducer head at zero current.
    - Next Steps
      - Start development of a test program using the Oxford power supply and the Current Transducer-Box. Program will compare power supply output current vs. current measured by the Current Transducer -Box.
      - Develop detailed system status and error handling capabilities.
      - Investigate triggering schemes for the Current Transducer -Box.
  - Mathematica analysis code
    - We have sufficient files to work on two of the seven notebooks. A video teleconference meeting with Craig from BNL is scheduled for this week.

- Next meeting: Tuesday, October 20th at 11:00 AM in DSG Control Room (EEL R121C).