

## HDice Controls Meeting Minutes

**Date: December 12, 2019**

**Time: 14:00 – 14:45**

Attendees: Peter Bonneau, Aaron Brown, Pablo Campero, Tyler Lemon, and Xiangdong Wei.

### 1. ZI UHF Lock-in Amplifier Scan Files

- 1.1. Data files generated by scans are saved as either .csv (Comma Separated Value), or .mat (MATLAB) files, or both.
  - 1.1.1. HDice is only interested in using the .csv file type
- 1.2. The .csv files can be read by LabVIEW or Excel and can also be reloaded into the Lock-in amplifier

### 2. Lock-in Amplifier does not average scans currently

- 2.1. The current LabOne software package in use does not have an averaging option, it is sold as an add-on feature (Boxcar) that can be field installed
  - 2.1.1. This add-on would be the easiest solution
- 2.2. Averaging can be done with Excel either “online” or “offline”
  - 2.2.1. Xiangdong will look into whether the file is appended or dumped after each run
  - 2.2.2. If the file is appended after each run, then the averaging can be done “online” (without having to stop to average between scans)
  - 2.2.3. If the file is dumped after each run and a new file is started at the beginning of each successive run, then the averaging will have to be done “offline” (between runs)
- 2.3. Xiangdong will look into how much it would cost to purchase the Boxcar add-on
  - 2.3.1. If purchasing Boxcar proves to be cost prohibitive we can move forward with averaging with Excel

### 3. What values need to be averaged

- 3.1. The four main values that need to be read from the data file are *phase*, *r*, *x*, and *y*
  - 3.1.1. The *x* values and *y* values need to be averaged for each scan
  - 3.1.2. Since the LabOne software already saves 100 scans, maybe there is a way to average them together?

### 4. In-Beam-Cryostat Computer Status

- 4.1. IBC computer currently has a network license for LabVIEW, but Mike would like to have a standalone license
  - 4.1.1. We will know more about the status of the LabVIEW license when we come back after shutdown