

26 March 2009
10:00 am Ocean View Conference Room

MBARI Project 900907 Meeting High Resolution Near-Surface Seismic Refraction Tomography

Attending: David Caress, Rich Henthorn, Mark Chaffey

Schedule

Initial schedule put out on March 16:



Status:

- Develop software architecture diagram
 - Rich is working on this
- Develop labview source drive state diagram
 - Rich now has Gene's labview code working on his PC and talking to CRIO and downloading chirp to the FPGA.
 - Need to change chirp definition to allow us to download a chirp we define.
 - We will be using a chirp that has tapering applied before and after the frequency sweep to periods of constant frequency.
 - Need to go to sea with predefined options for both chirp and CW pulses.
 - Suggested chirp definition parameters:
 - Amplitude

- Start frequency
 - End frequency
 - Chirp duration
 - Ramp up/ramp down duration
 - Ramp up/down will not be linear – might be half-Hanning or half-Gaussian
- Caress will provide chirp definition code.
- Develop labview realtime clock functions state diagram
 - Need to log ping time period. Times can be less precise on first dive, but need to meet 0.25 ms spec by second dive. This means making use of the precision clock counter timing board on the CRIO.
- Pressure housing
 - In fabrication
 - Chaffey doing detailed schematic of electronics in the housing
- Port irOBEX to laptop
 - Will just install on a Mac and use a Mac
- Borrow Sonde test board
 - Done, but switching it tomorrow for an up to date version
- Characterize Sonde input filter and set sample rate
 - Chaffer found plots of performance of the part used in the Sonde – there is a large phase change over the frequency sweep – we will use an observed source function (the direct arrival) as the basis for match filtering for refractions. For subsequent years we might want to change the Sonde to have different, zero phase analog input filtering.
- Build IR pulser
 - Have schematic and parts on order, arriving this week.
 - Identified 5 C cold room in building B for bench testing.
- Clock testing
 - Test clock stability at temperature and possibly pressure
- Design IR housing for unit on ROV arm
 - To be done
- Test jitter in ROV telemetry link on Ventana
 - To be done

Major Issues and Worries:

- Cables connectors – need to get ordered to make sure they arrive in time
- High speed counter time board integration
- Defining custom pulses to be used through the labview interface to CRIO – either calculating through an arbitrary algorithm or reading predefined files
- Schedules:
 - Caress at sea in Lau Basin May 2-15
 - Henthorn gone May 11-15
 - Chaffey gone for first week in April
 - McGill gone until April 20