

5 February 2009
10:00 am ~~Harbor View~~ Tank View Conference Room

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

Attending: David Caress, Rich Henthorn, Mark Chaffey, Paul McGill, Bill Kirkwood,
Gene Massion

Discussion with Gene regarding system design

- Borrowing hardware from Gene using labview to generate chirp source
- Want to achieve timing accuracy of data to 0.25 millisecond
- Options from Gene
 - Sync compact RIO chassis from National Instruments with GPS time
 - Add GPS time receiver to source hardware
- Mark – do we need time base in source hardware on ROV or topside?
 - Could put time base in source hardware to avoid possible variable delays in tether.
 - Better to sync time from GPS time on surface. Time keys sent down the tether should have delays of 10's of microseconds. Still have clock on the bottom, but discipline it from surface. Log the ping times from clock on bottom.
- Questions from Gene on National Instruments RIO chassis
 - Software kit (LabView) is available
 - Generated waveforms up to 12 kHz ok, but they started to fall apart around 20 kHz. Run the system at 100 kHz max sampling for all waveforms.
 - The Compact RIO has an FPGA – we should use this.
 - System has fast response to interrupts.
 - Paul – we can run the clock in the FPGA, disciplined from the surface.
 - Labview toolkits needed – Gene will let us know.

Lab Space

- Will use software engineering lab in Building B extension
- Will move Gene's hardware in there this week.

Syncing time on receivers

- GPS time is good to a microsecond, so any time source is ok to set time on receivers
- Can set receivers using Palm – will also need to set/sync time under water

Talking with Bill Burgess over iChat

- Tags use Infra Red Object Exchange standard format (IROE) commands

- Windows computers and Palm pilots use the IROE standard – an API for handling the handshaking exists
- Bill Burgess will come to our meeting next week.

Preliminary Design Review (PDR)

- PDR scheduled in two weeks