RVTEC Feb 2013 – UHDAS/ADCP

primitive data

ocean velocities
UHDAS Goals

• Acquisition: reliable, robust, duplicate feeds
• Monitoring and remote troubleshooting
• Processing
  – Balance real-time output and post-cruise recovery
  – Minimal effort to “touch up”
  – Portable code and documentation
• Happy Scientists
• Happy Techs
UHDAS Installations

• **13 UNOLS ships**: Atlantic Explorer, Atlantis, Endeavor, Kilo Moana, Knorr, Langseth, Melville, New Horizon, Oceanus, Point Sur, R.Revelle, R.G.Sproul, T.G.Thompson, F.G.Walton Smith

• **3 polar ships**: Healy, L.M.Gould, N.B.Palmer

• **2 NOAA ships**: Hi`ialakai, Ron Brown

• **1 “other” ship**: Ka`imikai O Kanaloa
Improvements since last RVTEC

- Operating System upgraded to 12.04 Xubuntu
- UHDAS Installation
  - Require: streamline multiple install methods
  - Goal: 'UHDAS' install CD (more work to do)
- Monitoring:
  - At-sea figures include beam velocities, signal return
  - Email sends calibration values, ping rate, location, depth
Improvements (continued)

• Processing
  • More diagnostic plotting tools (ADCP and inputs)
  • Improved single-ping algorithms (wh300)
  • Include offsets
    – Transducer-gps
    – Between heading devices
  • Allow 3 beams only (one missing beam)
  • In progress: partial profiles (bad weather)
Installations since RVTEC

- All ships now running with Python (no Matlab)
- Ships updated to Xubuntu 12.04:
  - Atlantic Explorer, Kilo Moana, Hi`ialakai, Healy, Knorr, KOK, Ron Brown, Walton Smith, Oceanus
- New UHDAS Installations
  - Point Sur
  - Walton Smith (BB600)
Problems

• Bad attitude
  • Ashtech (often) needs to be reset
  • Phins (occasionally) uncalibrated; or fails
  • Seapath (rarely) needs to be reset
  • Coda-f185 (firmware bug) reset when leaving port
  • POSMV (some are) unhealthy

• GPS
  • Wandering baseline
ADCP Problems

- KM wh300 (switch opened when warm?)
- Healy: electrical noise
- Melville: OS150 (died after re-installation)
- KOK wh300 (ground loops)
  - LESSON: bad power supply can affect data
Expectations for 2013

- Update more ships to Xubuntu 12.04
- 1+ new installation
  - Sikuliaz
- Work with R2R+NOAA regarding ADCP data
- Revisit Documentation
- Continue to streamline installation process
Continuing Request: Keep us in the loop regarding

- New ADCP (requires configuration, calibration)
  - Includes special needs by Science
- Changes in serial feeds
- New attitude devices (we like to evaluate them)
- Changes in networking
  - route to ship
  - infrastructure on ship
Protocol

- Always run “End Cruise” before archiving
- If rsync (regular backup)
  - **ALWAYS** use complete cruise name
Final request

... as always:

Send your needy scientists to Jules