



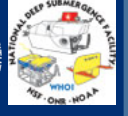
# Jason Upgrades Overview



- Active winter maintenance period
  - ✓ Rebuilt electrical plenum, *Jason* and *Medea*
  - ✓ New stators in thruster motors
  - ✓ Rebuilt Kraft arm
  - ✓ Added FO connector to telemetry end cap for Super Scorpio
- Additional pan and tilt on light bar
- Super Scorpio



# Jason Upgrades Insite Super Scorpio Camera



- Prototype
- 16:9 aspect ratio
- 4672 x 2628
- 12.3 MP DSC
- 10X optical zoom
- 64G internal flash
- Real time video
- Image download via Ethernet

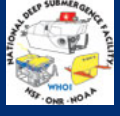




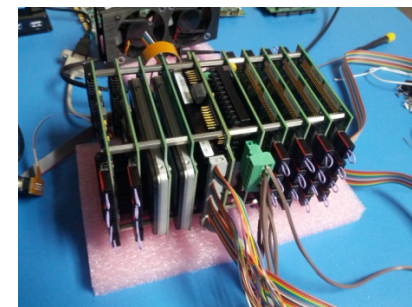




# Sentry Upgrades Van & Data

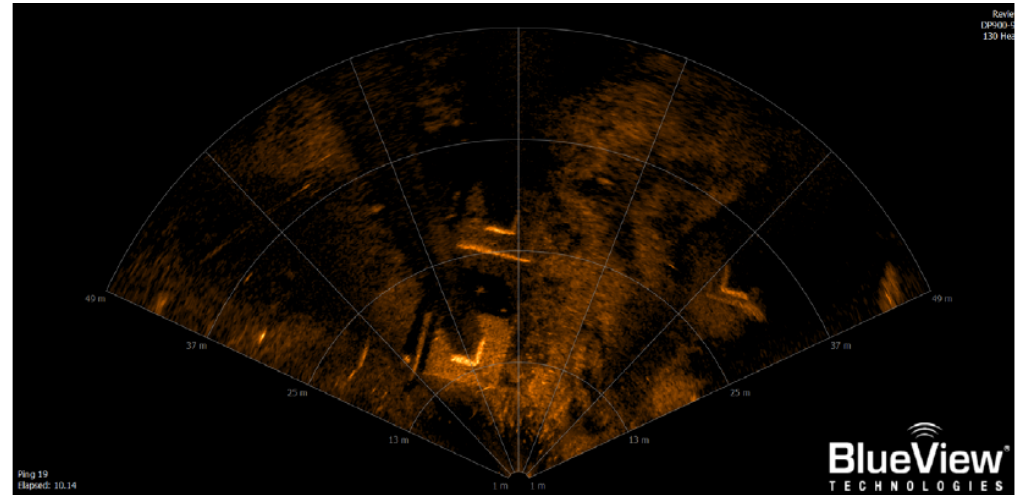
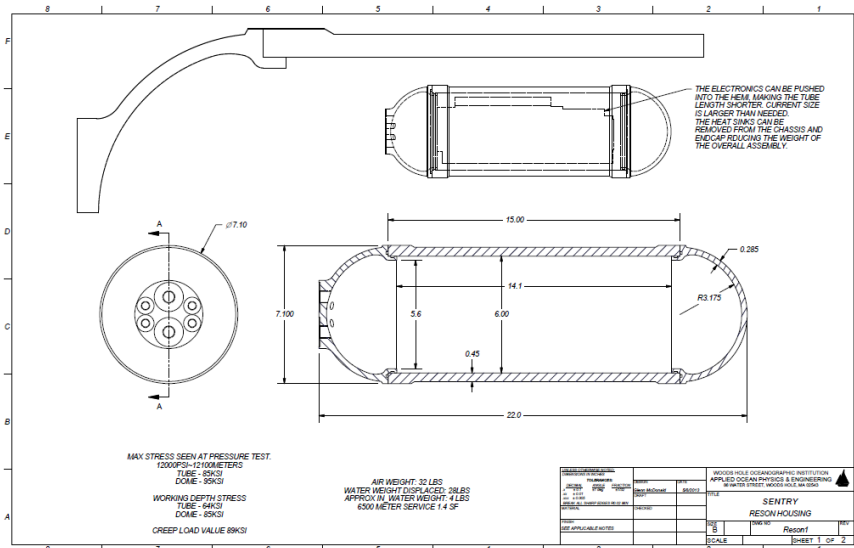


- **New racks in van**
  - Easier mob
    - Battery charger
    - USBL
    - Vehicle coms
    - DP machines
    - Lots of other stuff
  - New time server => less risk of error/better nav
  - Storage and processing greatly increased
- **Data Pod**
  - Installed August
  - 6TB per dive
  - effectively instant download of data
  - With hot swappable batteries (see later) will give 3 hour turn around time
- **New main stack this summer** - Replaces old computer from 2005
- **New wireless launch interface**





# Sentry Upgrades Sonar



Screen capture of the P900-130 showing bridge footers taken from an ROV in motion.  
From Blueview Data Sheet

## Reson Upgrade

- Dual Freq 200/400
- Much lighter
- Much lower power
- Substantial new signal processing
- Electronics due July 2013
- Housing underway

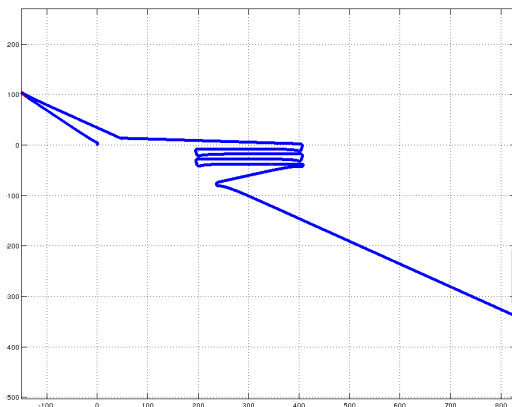
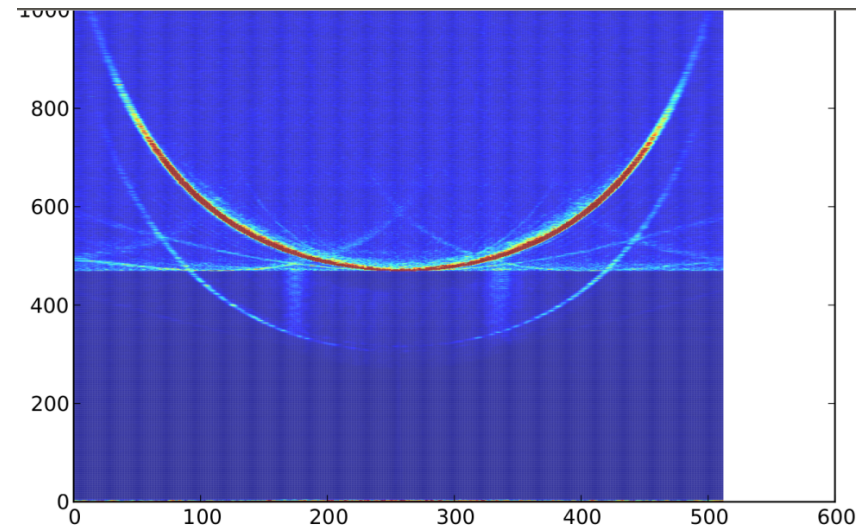
**Routed precision time base to Reson and Edgetech => improved data**

## Blueview P900

- Purchased without NSF/NDSF funds
- Available for some *Sentry* cruises – when other conflicts not present
- 900kHz Forward Looking – hopefully better obstacle avoidance
- Known to be useful for finding plumes
- Collaborating with OET on data pipeline



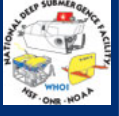
# Sentry Upgrades Software



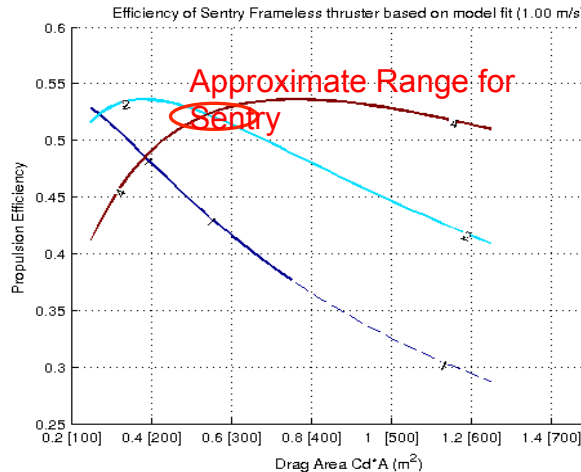
- **Sentry Sitter GUI** – integrated GUI for vehicle ops
  - Fewer errors
  - Built for telepresence
- **Reson water column records**
  - Reson water column images on vehicle in real time
- **Acoustic Trackline Loader** – on bottom mission changes way easier



# Sentry Upgrades Thruster & Payload



- Further progress mostly due to PROV
- > 50% end to end efficiency measured
- Should yield around a 2.5 kt top speed and a 15 – 20% increase in bottom time at 2 kts over current system
- PROV is finalizing design changes and durability testing then will place bulk order for both vehicles
- 30lbs additional payload: new foam in nose and wings
- Reduced 15lbs: combined backup release and LBL

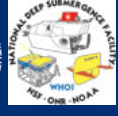








# Sentry Upgrades Summer/Fall



In addition to above ...

## •Anchoring

- Proof of concept studies started
- Detailed design starting this fall

## •Science User Interface

- Fledermaus scene using vessel manager
- Can include previous data, accoms data in near real time, and vehicle position
- Display with mission time, battery, other status
- Built to be telepresence friendly

## •Hot swappable battery concept study

- If implemented will provide 3-hour turn around!!
- Will do the majority of the design work this fall and seek hardware funding for 2014

## •AIS hardware under design – replaces obsolete RDF

## •Still working on **new mission controller software** (largely non-NDSF \$)

- Now planned to include active flyaway mode to work better with joint ROV/ AUV ops