

# *Atlantis* Improvements Status

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# *Atlantis* Improvements

Dec. 2004 – Jan. 2005 in San Diego

- Installed High Seas Net
- Completed repairs to # 1 Generator
- Overhauled a big diesel engine
- Moved radar antenna to eliminate blind spot aft of the mast
- Installed components of the *Alvin* Rescue System



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# *Atlantis* Improvements

## Will Request DESSC Support for 2006 Shipboard Scientific Support Equipment Proposal

### Likely to Include:

1. New Kongsberg DP system for *Atlantis*
2. New isotope van for *Atlantis*
3. Winch slip ring system for *Atlantis*



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# Need for DP System Upgrade

- Existing Robertson system, used extensively for *Alvin*, *Jason* and *DSL-120* operations, is vintage 1980s design and is becoming obsolete and unsupported.
- Science demands better station keeping and track follow accuracies in far more challenging sea conditions than what the existing Robertson DP system can deliver.
- Limitations of existing Robertson System included:
  - No environmental inputs - reactive vice predictive solutions
  - Single vice multiple and controllable GPS inputs
  - Solution limitations add to wear and tear on propulsion equipment, increase fuel consumption and restricts effectiveness of the system to maintain station
  - Inability to optimize limited power available at bow contributes to loss of effectiveness in marginal conditions



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# Proposal to Upgrade DP System on *Atlantis*

- **Current system is original equipment Robertson Model SDP-600 DP system with a AP9MKII Autopilot unit**
- **Will propose the Robertson unit be replaced with a Kongsberg system similar to those installed on R/V *Knorr* and *Thompson* and being installed on the R/V *Langseth***



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# Proposal to Replace Isotope Van

- **Current van is structurally deteriorating past the point of repair**
- **Van was constructed in the 1980s and does not comply with current UNOLS standards for isotope vans**
- **New van will place premium on sufficient and flexible use of interior space with sufficient sized fume hood and ample storage**



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# Proposal to Procure Additional Slip Rings

- Will be requesting Focal Technologies Type 176/242 slip rings
- *Atlantis* currently has a single-mode slip ring with one optical pass. *Jason* operations requires at least two.
- We will likely request DESSC support in justifying need for a primary set of new slip rings for *Atlantis* with a spare for potential use on portable winches. The only existing source of the slip rings needed to support ROV operations is SIO.



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# Issues to be Addressed in 2005/2006

Support effort to overhaul the bow thruster in drydock in 2006. May need DESSC support to ensure *Atlantis* is drydocked in 2006.

## Additional Plans:

- Modify engine voltage regulator system in Dec 2005
- Replace HMSS systems in Seattle, July 2005
- Clean propulsion motors in Seattle, July 2005
- Continue making incremental HVAC mods
- Continue supporting lab drain modifications



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