

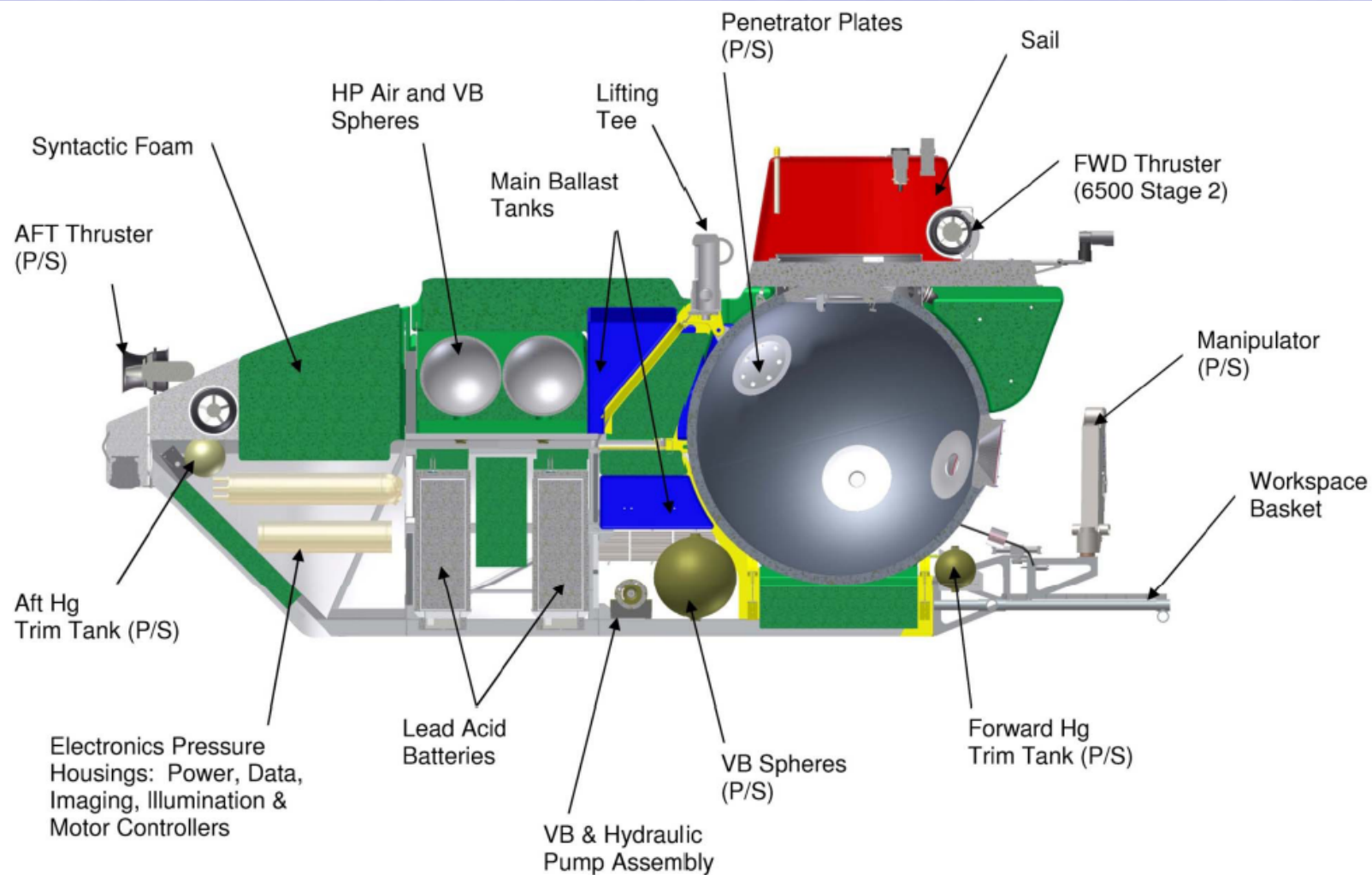
Replacement Human Occupied Vehicle *Alvin* Upgrade



UNOLS Council
March, 2011

Brian Midson

Phase-I Vehicle (4500m)



Dimensions - similar to existing *Alvin* to fit *R/V Atlantis*

27' long

12' tall

8.5' wide

Design	DSV <i>Alvin</i>	Stage 1 Upgrade
Operating Depth	4500 meters	4500 meters
Sphere Rating	4500 meters	6500 meters
Interior Volume	144 ft ³	171 ft ³
Pressure Housings	4500 meters	6500 meters
Syntactic Foam Rating	4500 meters	6500 meters
Foam Density	38 lb/ft ³	<36 lb/ft ³
Air Weight	35,000 lbs	45,000 lbs
Dive Time (normal)	8-10 hours	8-10 hours
Science Payload	200 lbs	400 lbs
Cruising Speed	.5 knot	.5 knot

New System Designs

- Personnel sphere (6,500m)
- Penetrators (6,500m)
- Syntactic foam (6,500m)
- Forward frame section
- Pressure vessels (6,500m)
- Video and lighting system
- Command & Control
- Electrical system

Cross-Deck Systems

- Mercury trim
- Variable ballast
- Main hydraulics
- Main ballast
- Main batteries
- Instrumentation
- Propulsion

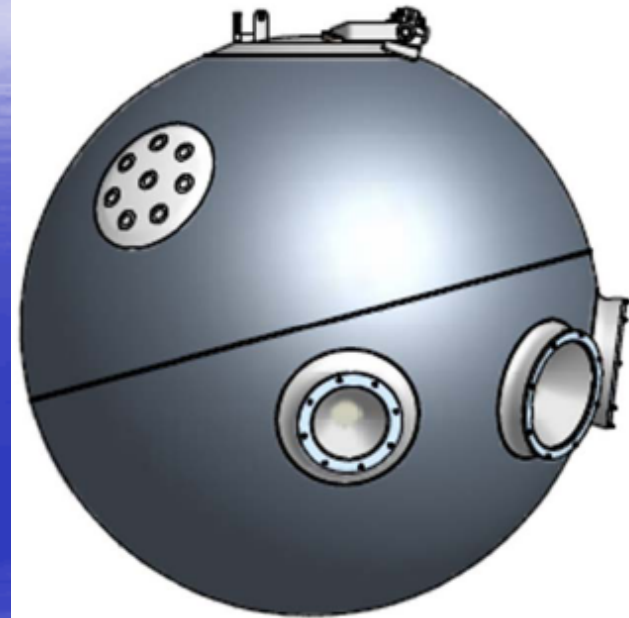
Sphere

Front View



Pilot & observer 7" viewports

Side View



Observer 5" viewport & penetrator reinforcement



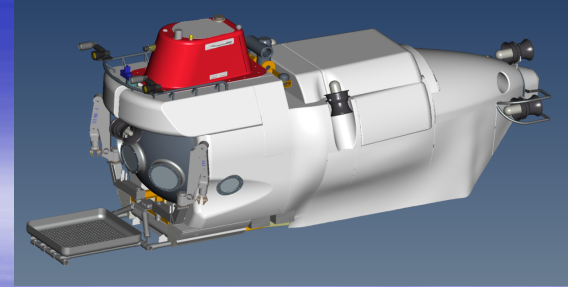
Existing sphere = 144 ft³



New sphere = 171 ft³



Milestones



- Sphere Delivery, May 2011
- Hydrostatic Test, October 2011
- Initial Sea Trials, April 2012
 - NAVSEA Certification
 - ABS Classification
- Science Trials, May 2012



Show
the
Movie!

Frame Modification

