



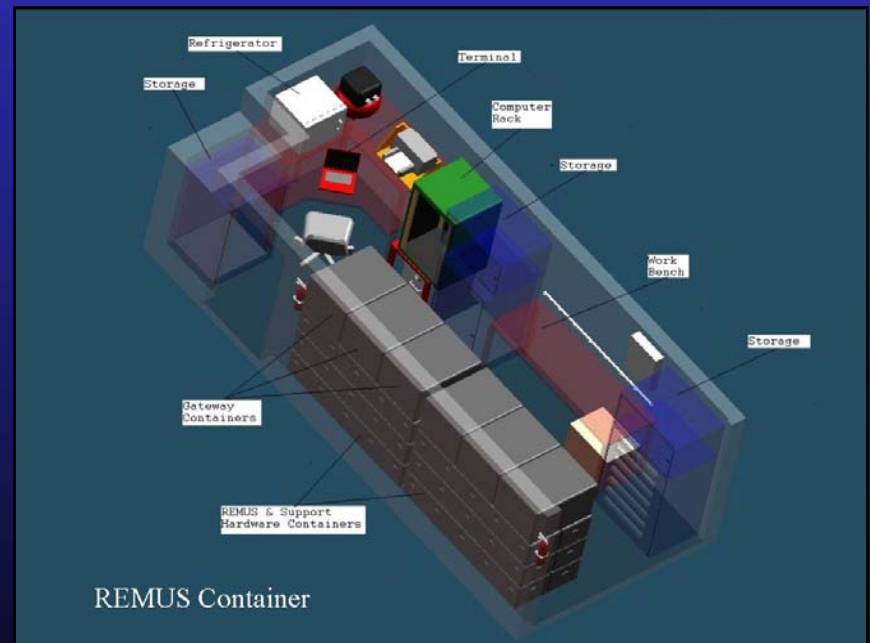
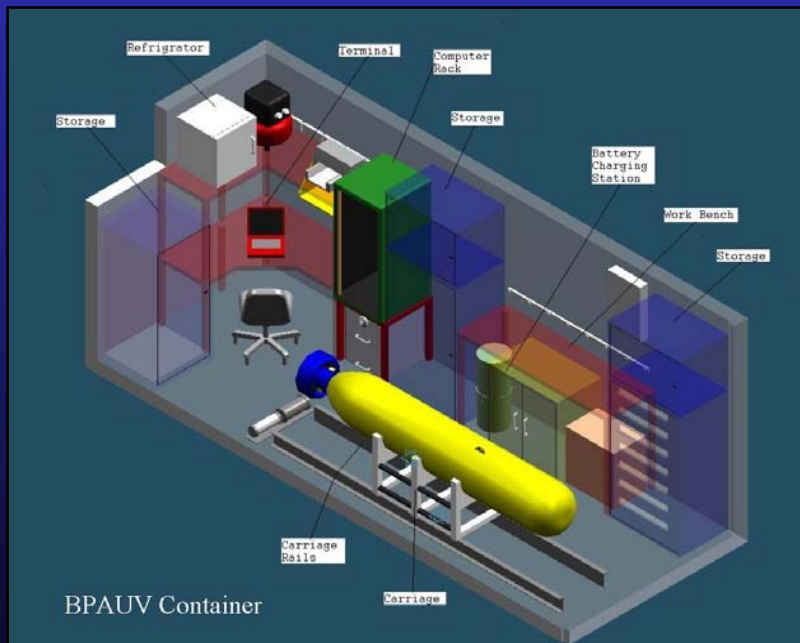
Successes in Combining Testing with Training in the Modular Mission Package (MMP) Program

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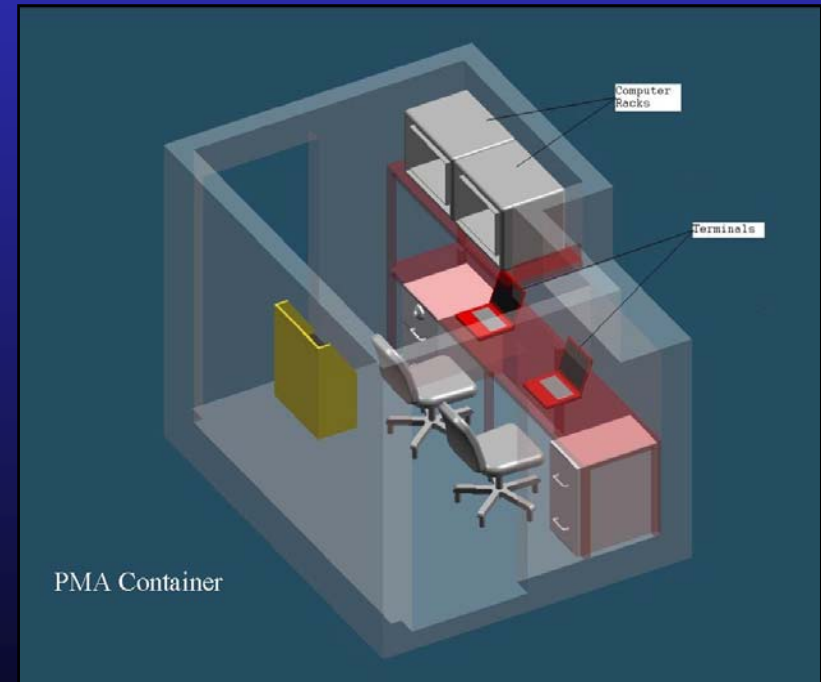


The Modular Mission Packages are milvans which house REMUS and BPAUV vehicles, and the equipment required to support missions.





The milvans are easily embarked and debarked from the host ship, and are adaptable to most ships.





Bringing Together the Military and R&D Cultures

What military operators like:

- The instruction and training aids provided on how to prepare the UUVs for a mission, and how to conduct Post-Mission Analysis (PMA) of the data.
- Being provided with a “window on the future” of new Navy technology.



Bringing Together Cultures, con't

What military operators dislike:

- The tendency of R&D personnel to tinker:
 - Software development done on the fly.
 - Vehicles constantly being reconfigured.
 - Each reconfiguration requires a time consuming navigation recalibration.



What R&D personnel like:

- Initially, R&D personnel prepared, launched and recovered the UUVs. Now, military operators have taken over the responsibility.





- They are developing procedures and hardware for BPAUV L&R on various platforms.





- REMUS vehicles are lifted over the side of the host ship and deployed from a RHIB.





- Military operators provide a seamless interface, from MCM tasking to reporting contacts to the MCM Commander via MEDAL.





What R&D personnel like, con't:

- The Navy takes responsibility for providing target fields with mine-like targets. This gives R&D personnel a means of quantifying improvements made to the UUVs as an MCM tool.
- Military operators focus on Tactics, Techniques and Procedures (TTP), such as:
 - Mission Profiles
 - Time Management
 - Manning Requirements



Improvements Made Based on Military Operators Recommendations:

- The operator interface has been simplified, with one task per window and less jargon.
- Improved battery management, particularly during “standby” time when vehicles are powered up and awaiting orders to deploy.
- Real-time tracking of the vehicles with an Over-The-Horizon communications link has been provided.



Improvements, con't:

- Maintenance levels have been defined, specifying which repairs can be done in the field and which require factory support.
- The ergonomic design of the milvans has been improved, with more efficient use of storage space and the ability to secure equipment during high sea states.



Recent Training and Exercises

- REMUS training, Panama City, 2/04
- BPAUV training, Panama City, 3/04
- Blue Game, Norway, 4/04
- CJTFEX, North Carolina, 6/04
- BPAUV training, Panama City, 7/04
- RIMPAC (Hawaii), 8/04
- REMUS training, Panama City, 11/04
- GOMEX (Florida), 12/04
- BPAUV training, Panama City, 2/05
- REMUS training, Panama City, 4/05



Questions?

