

Undersea Technology

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Presentation Outline

- Recap from Last Year
- Technology Focus Areas
- Deep Dives
- Points of Contact
- Questions

Focus Areas

- Energy storage solutions for JMMS, submarines and adjunct capabilities
- Unmanned Undersea Vehicles
- External Payloads / Sensors
- Advanced Sensor and Platform Integration
- Advanced Weapons
- Reduced Total Ownership Costs – Submarine and Undersea Systems

Focus Areas (cont.)

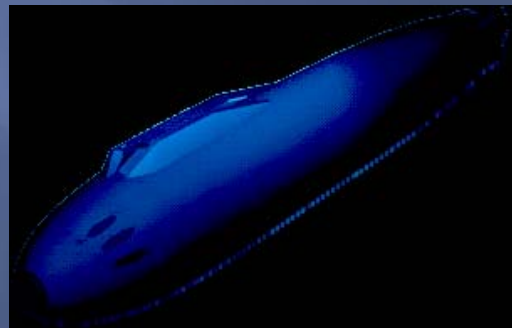
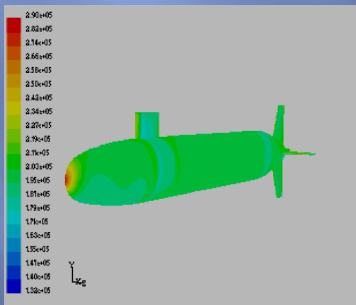
- Data Triage, Information Display, Tools that Aide Decision Making
- Photonics
- Corrosion
- Submerged Communications

Landing Pads:

Sea Based Strategic Deterrent and Future Block Upgrades of the VIRGINIA Class

Deep Dive

- Modeling and Simulation
 - Hydrodynamic flow noise/hull shape
 - Propulsor and platform radiated noise
- Expand use of composite materials
- Improved shallow water stealth, including non-acoustic effects



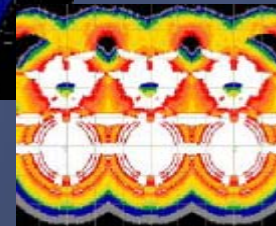
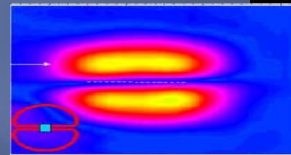
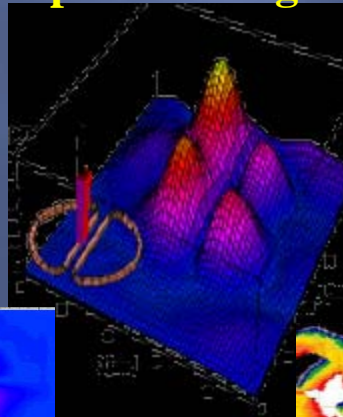
Deep Dive (cont.)

- Hull shape / Hull forms
- Full spectrum signature control (acoustic and non-acoustic)
- New hull materials

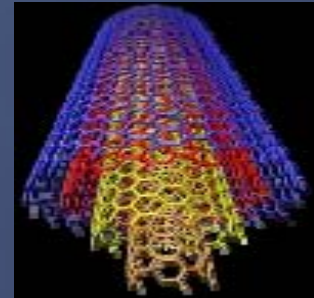
Non-Traditional Concepts



Full Spectrum Signature



New Materials



Deep Dive (cont.)

- Exploitation of full spectrum signatures of vessels
- Improved non-penetrating photonics masts and sensors, including outboard digitization of antennas
- Improved towed systems reliability and operational availability
- Data / C2 / power exchange with external payloads
- External payload/sensors in-situ processing to reduce data transfer requirements to host platform
- Payload/weapons deployment enablers
 - Improved/alternate propulsion, including low-noise operations
 - Improved sensors for slow moving targets

Deep Dive (cont.)

- Increase bandwidth/functions (out-board digitization) of submarine antennas and lower counter detection vulnerability
- High bandwidth through water communications (VTC-like) while maintaining tactical speed and depth with low counter detection vulnerability
- Advanced sensors and processing
- Enhanced information fusion and decision making, including design tools to improve human/system-level interfaces
- Integrated Detect To Engage (DTE) capability
- High endurance power supplies for off-board vehicles, (UAS, UUV) sensors & weapons

Key Points of Contact

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