

SERDP and ESTCP Program on Munitions Response

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DoD's Environmental Technology Programs



Science and Technology

- DoD, DOE, EPA Partnership
 - ◆ Advanced technology development to address near-term needs
 - ◆ Fundamental research to impact real world environmental management

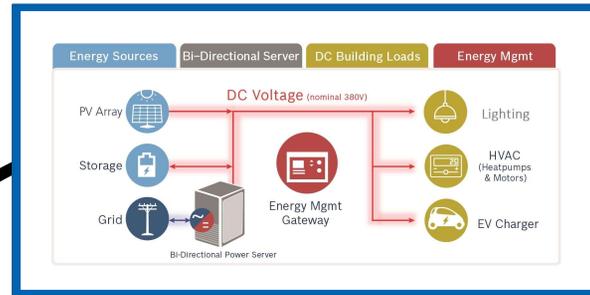


Demonstration/Validation

- Demonstrate Innovative Cost-Effective Environmental and Energy Technologies
- Promote Implementation
 - ◆ Direct Technology Insertion
 - ◆ Partner with End User and Regulator

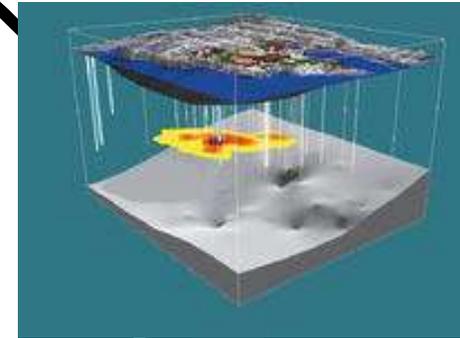
Program Area Management Structure

Weapons Systems & Platforms



Energy & Water (ESTCP only)

Environmental Restoration



Resource Conservation & Resiliency

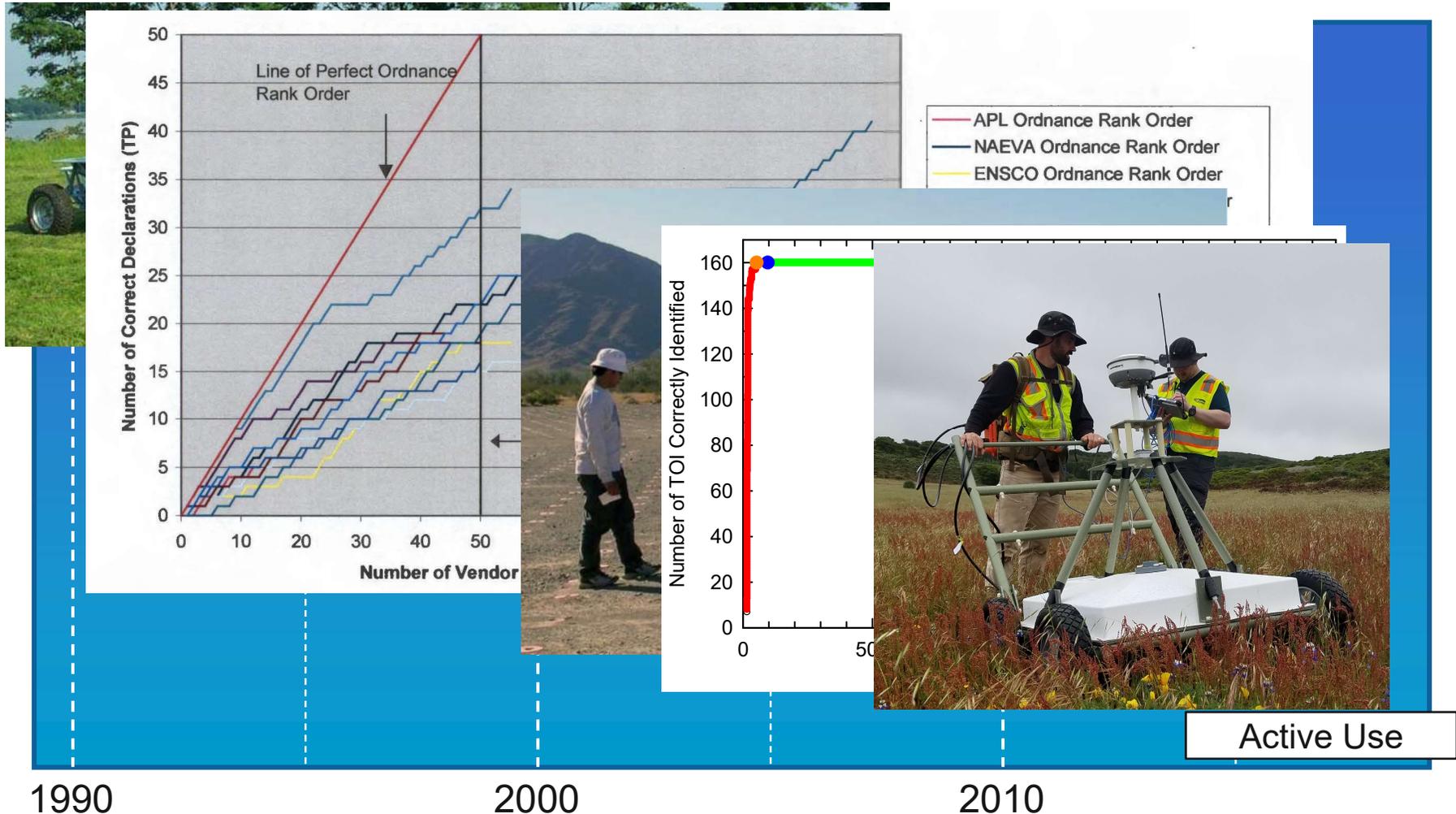


Munitions Response

Rough Breakdown of the MR Program

- Terrestrial Munitions Response
- Underwater Munitions Response
- Underwater Munitions Mobility
- Support Tools

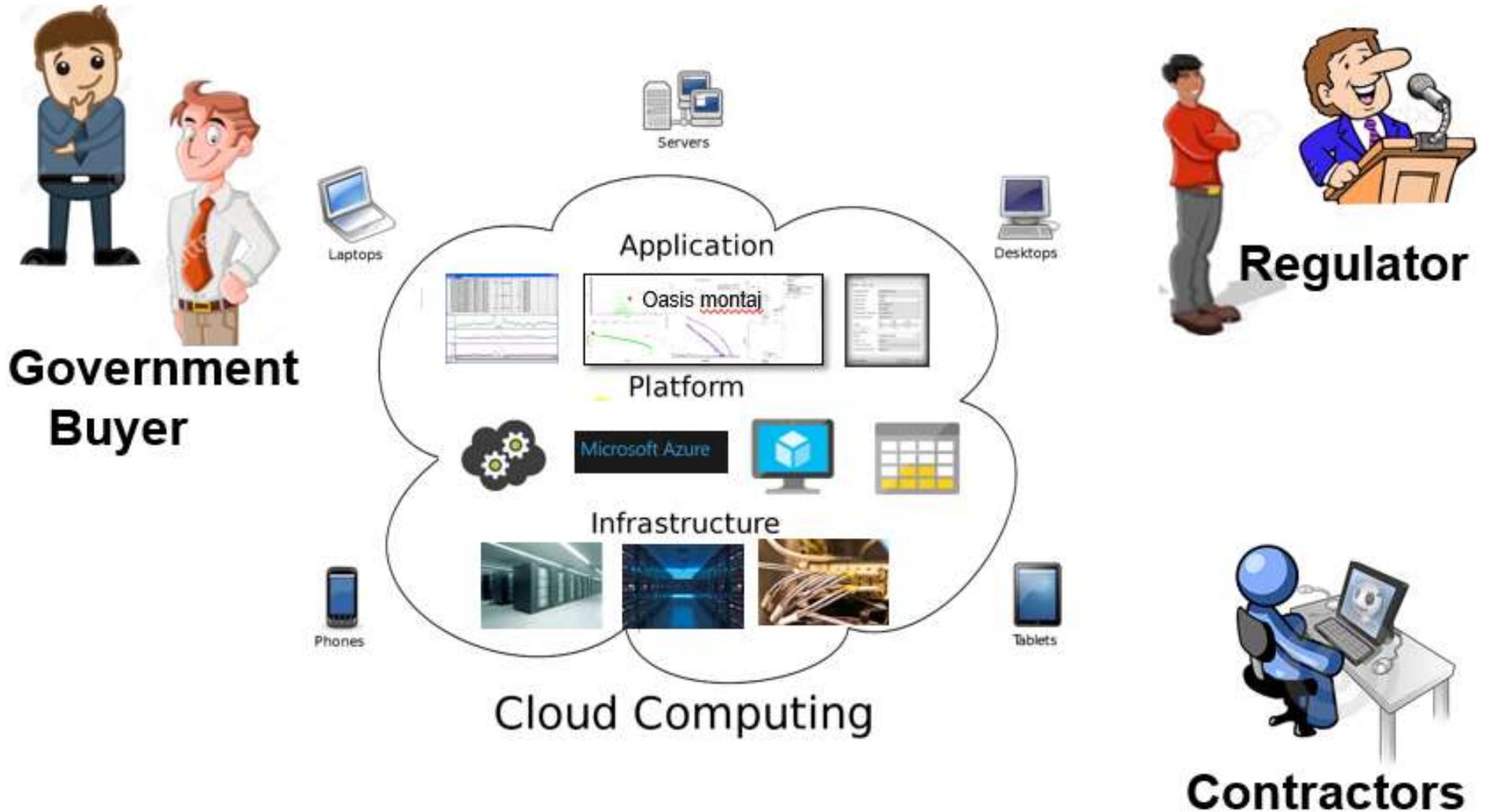
Terrestrial Munitions Response



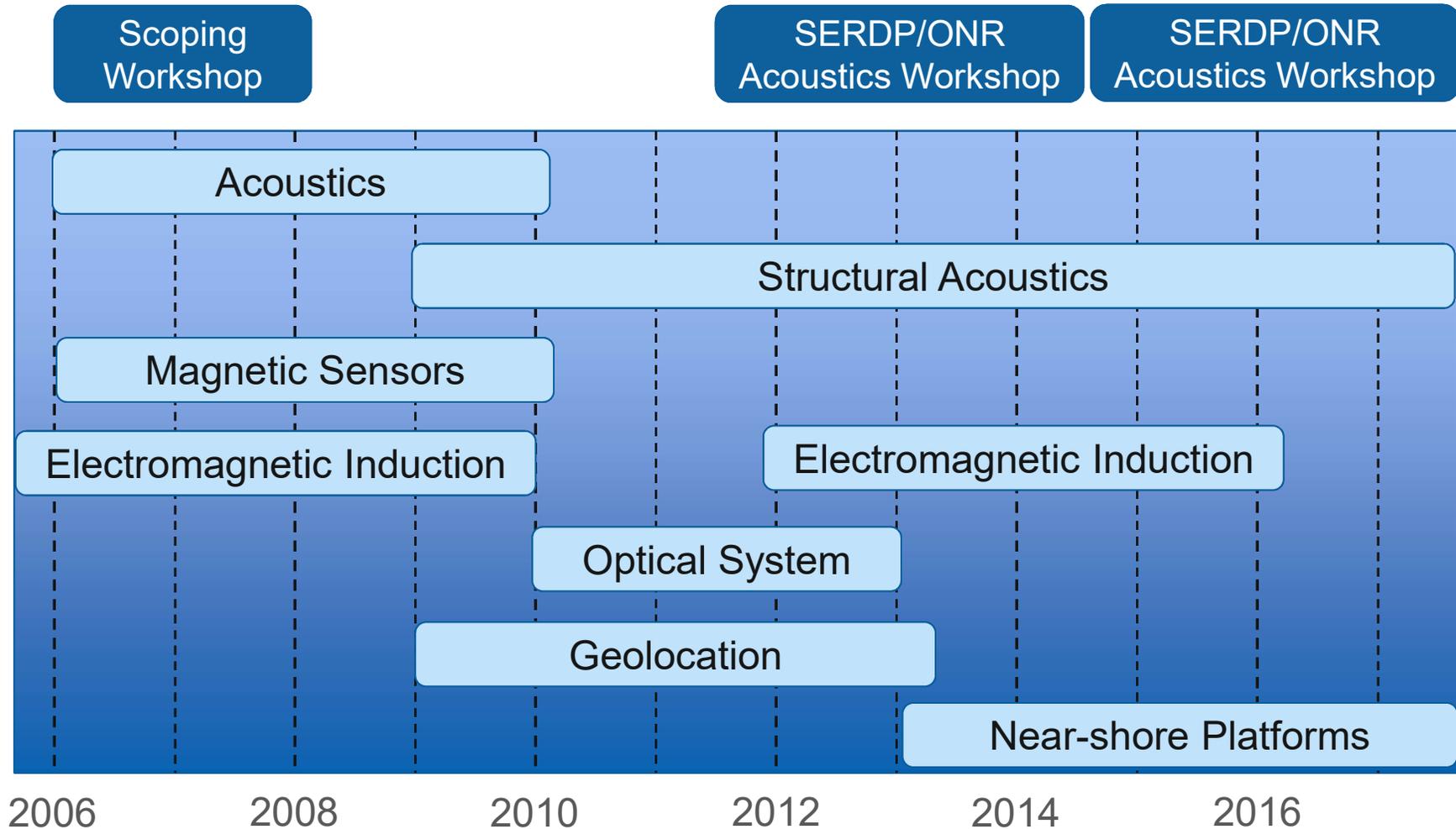
Where Are We Going?

- Continued support for implementation
 - ◆ DAGCAP
 - ◆ MR Quality Assurance Project Plan
 - ◆ validation of new instruments
 - ◆ UX-Analyze development
- Munitions penetration depth modeling
 - ◆ support for risk management decisions
- Geolocation in GPS-compromised environments

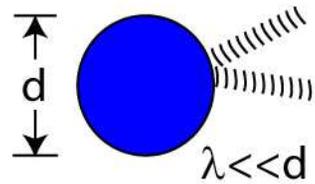
“Efficient and Secure Cloud Computing for UXO Classification and Project Management”



Underwater Munitions Response

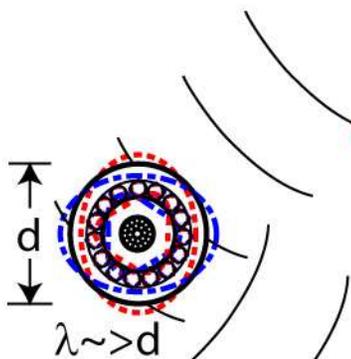


Structural Acoustics



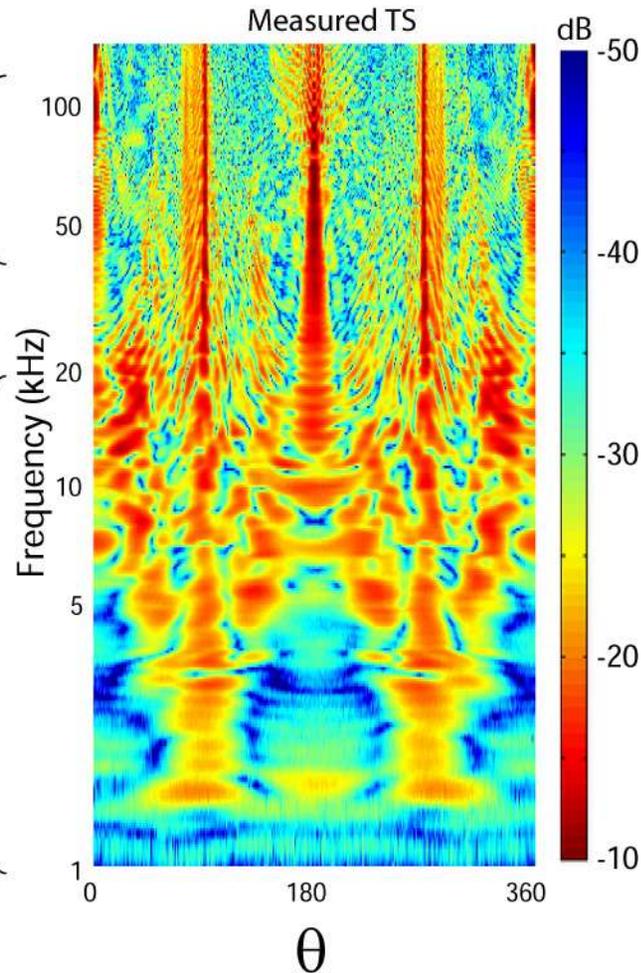
Acoustic Imaging Regime

Acoustic scattering "specular" in nature used to form image of the external shape of the target.



Structural Acoustic Regime

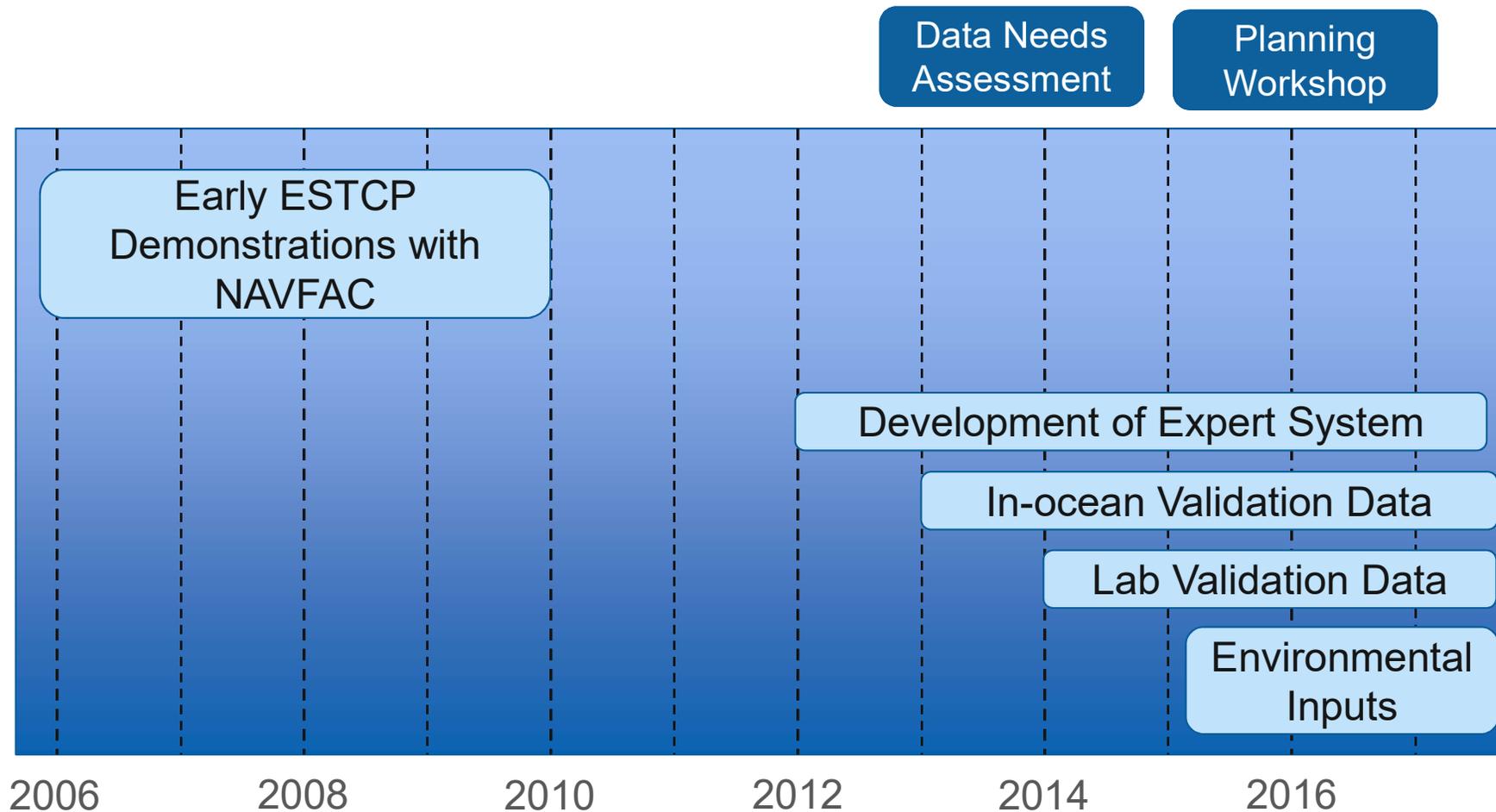
Acoustic scattering related to vibrational dynamics of the object both whole-body and internal structure. Resulting time-frequency features used to "fingerprint" target.



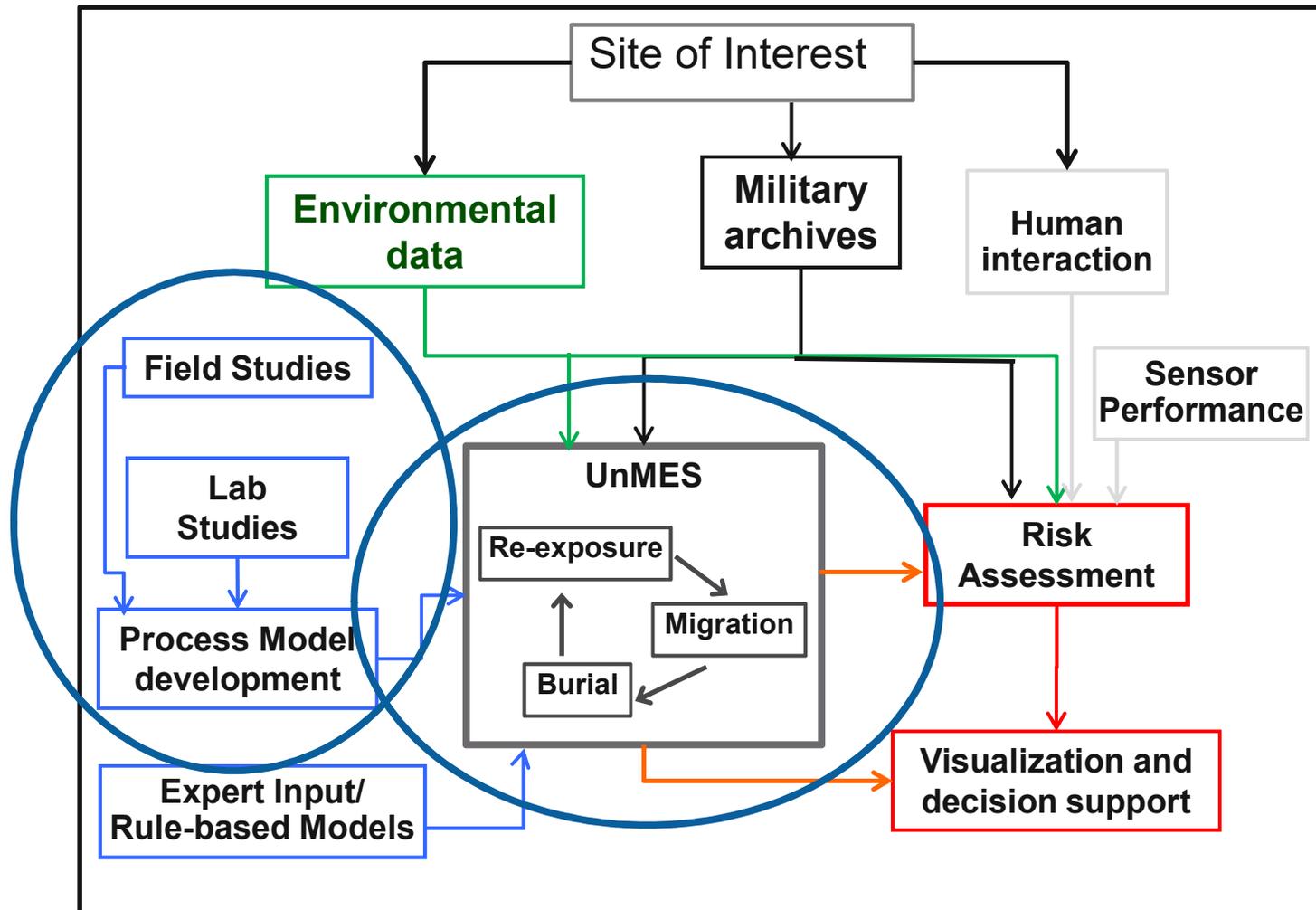
Where Are We Going?

- Demonstration projects of individual sensor modalities
- Multi-sensor systems optimized for each site
- Test Site

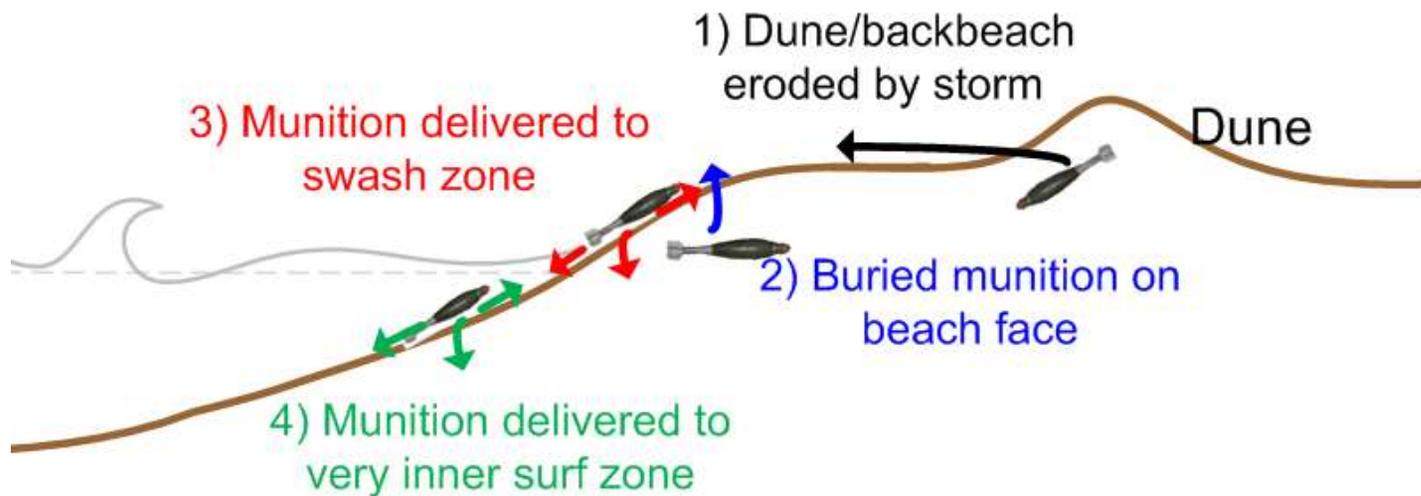
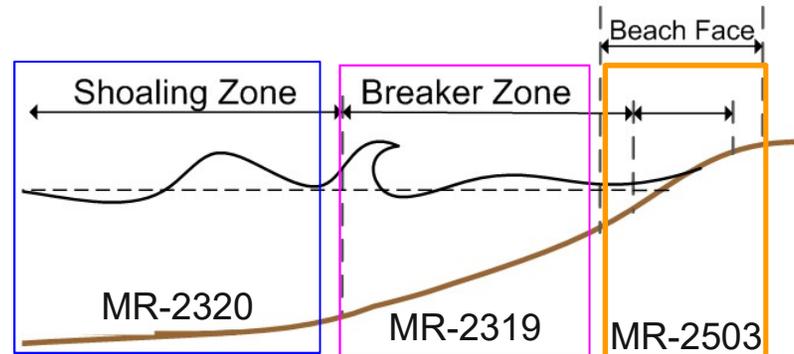
Underwater Munitions Mobility



Decision Support System



In-situ Measurements of Munitions Mobility



MR-2503

Surrogate Munitions Design and Assembly

x-io inertial motion unit



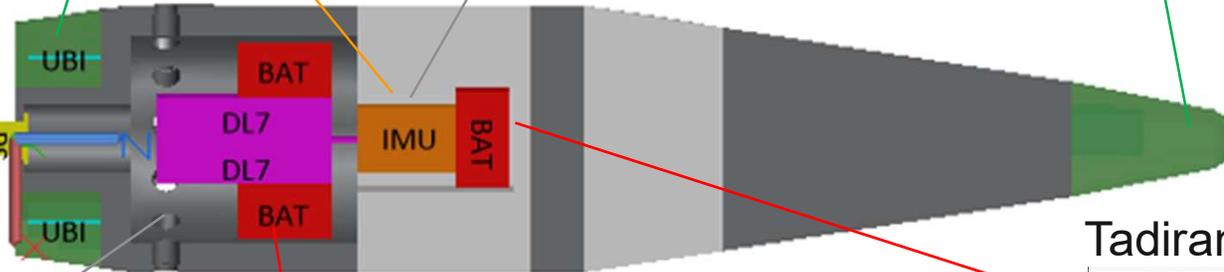
Slamstick shock sensor



Ubisense wifi tag



Measurement Specialties pressure sensor



Luna Photocell (x12)



LiFe battery



Microedge data logger (x2)



Tadiran battery



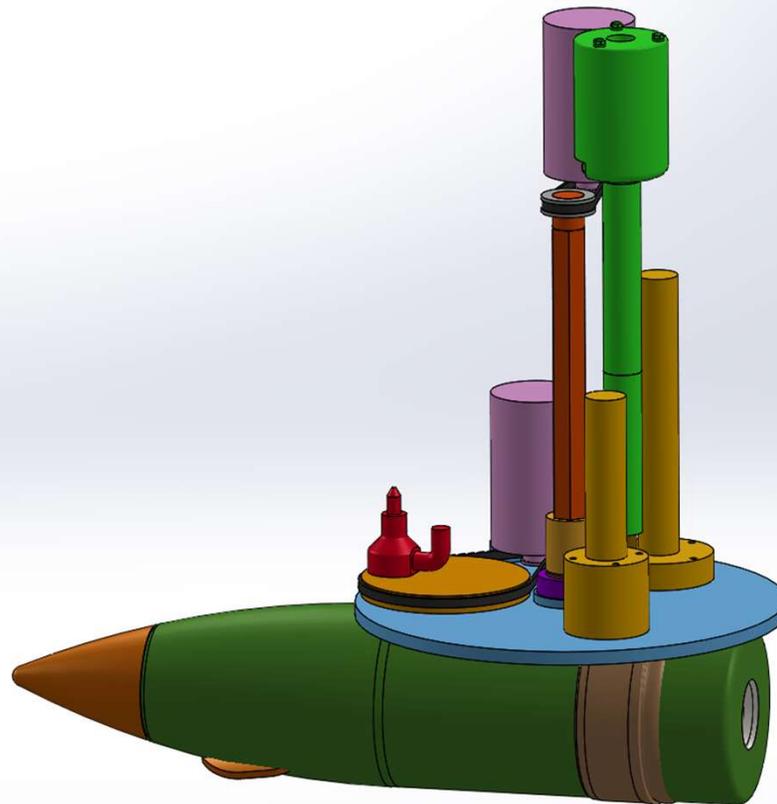
Where Are We Going?

- Completion of Expert System
- Demonstration/Validation at a DoD site

Where Are We Going?

- Underwater Support Tools
 - ◆ remediation
 - ◆ vehicles
 - ◆ management tools

“Cut and Capture System Technology for Demilitarization of Underwater Munitions”



For More Information

serdp-estcp.org

[Program-Areas > Munitions-Response](#)

Or

Search – Project Name / Number / Key Word