

Disruptive Technologies Conference

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**DIRECTOR OF
INNOVATION**



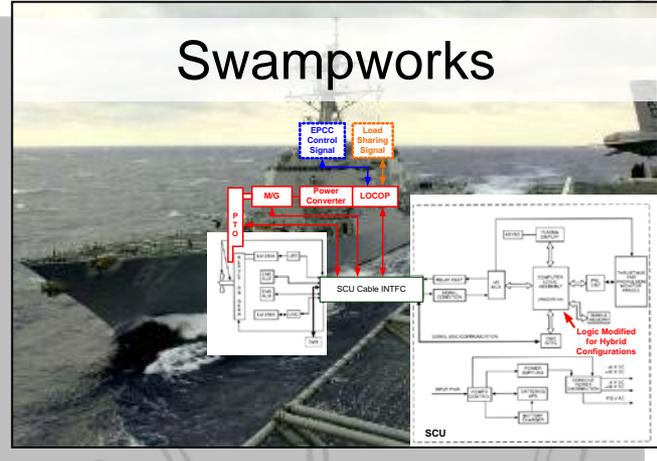
ONR
Office of Naval Research

Director of Innovation Portfolio

Next Big Thing



Disruptive



Sustaining



Disruptive



INP Programs Snapshot

- **Guidance**

- Innovative and game-changing
- High risk, high payoff
- Useable prototype available at completion
- Deputy PMs from acquisition PEOs to facilitate transition

\$1,162M
Planned / Proposed
FY09-15

**Current
INPs**



EMRG



SBE



TACSAT

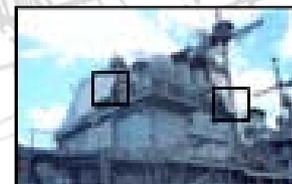


PLUS

**FY-10
INPs**



FEL



INTOP

INP Program Status (Current, FY10 New Start, and FY12 Proposed INPs)

- **Naval Aviation Enterprise**

- Durable Aircraft
- Large Format Infrared Focal Plane Systems
- Naval Variable Cycle Engine Technology

- **Surface Warfare Enterprise**

- Free Electron Laser (FY-16)
- Damage Control Technologies for the 21st Century (DC-21)
- Electric Warships
- Maintenance Free Ships

- **Undersea Warfare Enterprise**

- Persistent Littoral Undersea Surveillance (FY-12)
- Large Displacement Unmanned Undersea Vehicles
- Supercavitating Weapon

- **Naval Netwar/FORCEnet Enterprise**

- Integrated Topside (FY-16)
- Tactical Satellite (FY-10)
- Integrated Distributed Electronic Warfare Capability for Electromagnetic Spectrum Control
- SATCOM Vulnerability Mitigation Using Multi-beam Phased Arrays
- UV Sentry

- **Naval Expeditionary Combat Enterprise**

- EM Railgun INP Phase I (FY-11)
- Sea Based Enablers (FY-12)
- EM Railgun INP Phase II
- Autonomous Aerial Cargo/Utility System (AACUS)
- Hybrid Heavy Lift Airship
- Ultra Heavy-lift Amphibious Connector

*Programs in Red are existing programs – (End Date)

SwampWorks Program Purpose

- To develop and demonstrate newly invented or recently discovered technologies that address emergent and enduring operational problems in an accelerated timeframe.
- To develop prototypes of recent technology breakthroughs for experimentation to satisfy war-fighter requirements.
- Pilot disruptive and open innovation processes and tools with the objective of decreasing the time and cost of producing innovative solutions

SwampWorks/Experimentation Program Status (FY09)

• Surface Warfare Enterprise

- High Temperature Superconducting Degaussing
- Future Naval Maritime Laser Weapon System Electric Warships
- Full Ship Shock Trials (FSST) Alternatives
- Flight Deck Thermal Management System (JSF)
- SHIPBOARD ENERGY STORAGE (DDG 51 class)
- HYBRID DRIVE DYNAMIC CONTROLS (DDG 51 class)
- Advanced Watertight Door Seal
- Emergent Critical Laser

• Undersea Enterprise

- Advanced Communications at Speed and Depth
- Large Displacement Unmanned Undersea Vehicles Hybrid Tail Cone
- Structural Acoustics Detection & Classification For Shallow Water ASW
- **Blue Dart UUV Detection**
- **Submarine Payload Door Electric Actuator**

• Naval Aviation Enterprise

- Fuel Cell Powered Long Endurance UAS
- Black Dart (UAS project)

• Naval Netwar/FORCEnet Enterprise

- Maritime Domain Awareness
- Tactical Satellite (FY-10)
- Transportable Electronic Warfare Module
- Long Range EO/IR/LRF Sensor System

• Naval Expeditionary Combat Enterprise

- Operational Adaptation
- Counter Terrorism Integration
- High temperature flight deck non-skid experiment (V-22)
- Hyper Spectral Imagery Of Littoral Terrain
- **Stop Rotor UAS**

*Programs in Red are proposed programs for FY10

TechSolutions Overview

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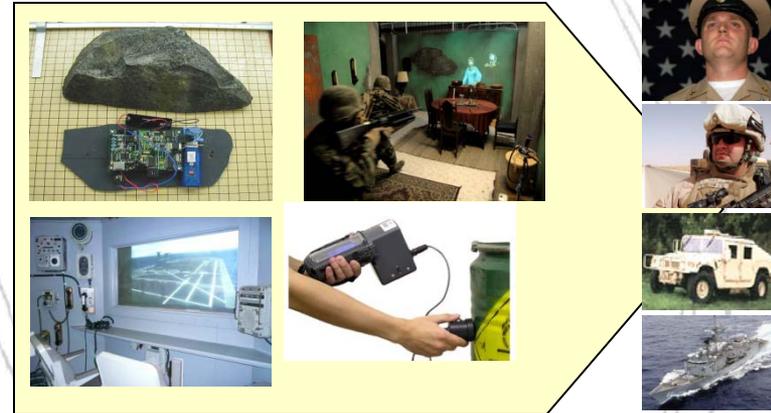


Objective

Provide rapid-response S&T solutions to immediate deck-plate level issues in response to Warfighter requests.

Goal

Develop applications of existing and emerging technologies to meet high-interest, near-term Fleet/Force needs; demonstrate prototype solution within 14 months of request.



Warfighters



Platforms

Technical Approach

- Solicit operational needs from Fleet/Force members
- Define solution requirements
- Develop solutions through NRE partners with Fleet/Force feedback early and often
- Transition solutions to PORs, F/F, etc.

S&T Products

- Prototype demonstrations
- Test and evaluation results

Primary S&T Focus Areas

- Naval Warfighter Performance & Protection
- Affordability, Maintainability & Reliability
- Assure Access & Hold at Risk

Example Products

- Infantry Immersive Trainer (IIT)
- Improved WAF Interface Card
- Gun Use Monitoring System for Howitzers
- Sub-Launched UAV (Transition to Flight)
- Portable Acoustic Contraband Detector

FY09 TechSolutions Projects by Enterprise

- **Naval Aviation Enterprise**

- HCO Tower Simulator
- Non-pyrotechnic SAR marker
- Catapult CSV Calculator
- Tool Room Management System
- MRT3 Training Keyset

- **Surface Warfare Enterprise**

- EW Target Mapping Toolkit
- AIS Identity Validation Tool
- Defense Against Terrorist Tactics

- **Undersea Warfare Enterprise**

- Solid State Lighting for Subs
- Non-traditional Hull-mount Sensor
- CASS Software Update
- WAF Output to SMMTT and A-TAS
- Submarine Exercise Treadmills

- **Naval Netwar/FORCEnet Enterprise**

- *none*

- **Naval Expeditionary Combat Enterprise**

- Mobile Modular C2 in MRAP
- Imaging Through Walls
- Powered Rope Ascender
- Talon Robot Battery Replacement
- Naval Expeditionary Virtual Training Environment (NEVTE)
- Infantry Immersive Trainer (IIT)
- M777 Brake & Shock Sensors
- Condition-Based Maintenance for Howitzers
- SDV Waterproof Transport Canister
- SDV 360-degree Sensors
- Enhanced Lightweight UUV (*pending*)
- M203 Indirect Fires Sight (*pending*)

- **Provider Enterprise (NAVSUP)**

- Food Service Management Software Replacement (*pending*)

QUESTIONS???

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