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SPARTAN "SCOUT"



FY02 ACTD

Unmanned Surface Vehicle (USV) for Assured Access and Force Protection: *Status & Update*



**Presented To
Naval-Industry R&D Partnership Conference**

13 August 2002

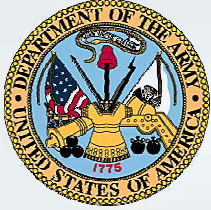
Presented By

Michael Hundt

***Surface Undersea Warfare
Strategic Planning & Development***

(401) 832-8628, hundtmm@npt.nuwc.navy.mil

NAVAL UNDERSEA WARFARE CENTER DIVISION, NEWPORT, RI



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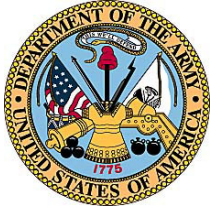
FY02 NEW START PROGRAM SPARTAN SCOUT *Advanced Concept Technology Demonstration (ACTD)*



Raytheon

NORTHROP GRUMMAN





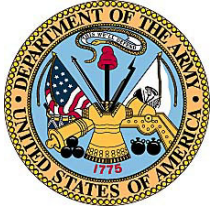
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SPARTAN Scout



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- ❑ **A RHIB which can be launched and operated from surface ships and shore-based facilities which has:**
 - *Unmanned, semi-autonomous operations*
 - *Robust line-of-sight C²*
 - *Limited over-the-horizon C²*
 - *Existing systems and sensors*
 - *Modular design*
 - *Cost effective and potentially expendable*



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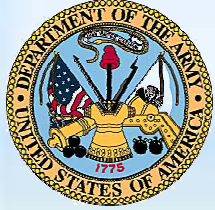
SPARTAN SCOUT ACTD Objective



FY02 ACTD

❑ **OBJECTIVE of this ACTD: Demonstrate the Military Utility of USVs for Assured Access and Force Protection in the Littorals and fill a void in capability that the fleet is in critical need of today**

- *Conduct critical missions (MIW, FP/ISR, ASW, Precision Strike)*
- *Prepare the waterspace for Amphibious and Sealift Ops*
- *Minimize or eliminate unnecessary risk to personnel and capital assets*
- *Demonstrate the potential for a cost effective and potentially expendable asset*
- *Demonstrate USVs as a Force Leveler/Multiplier*
- *Provide port-protection when launched/operated from shore*



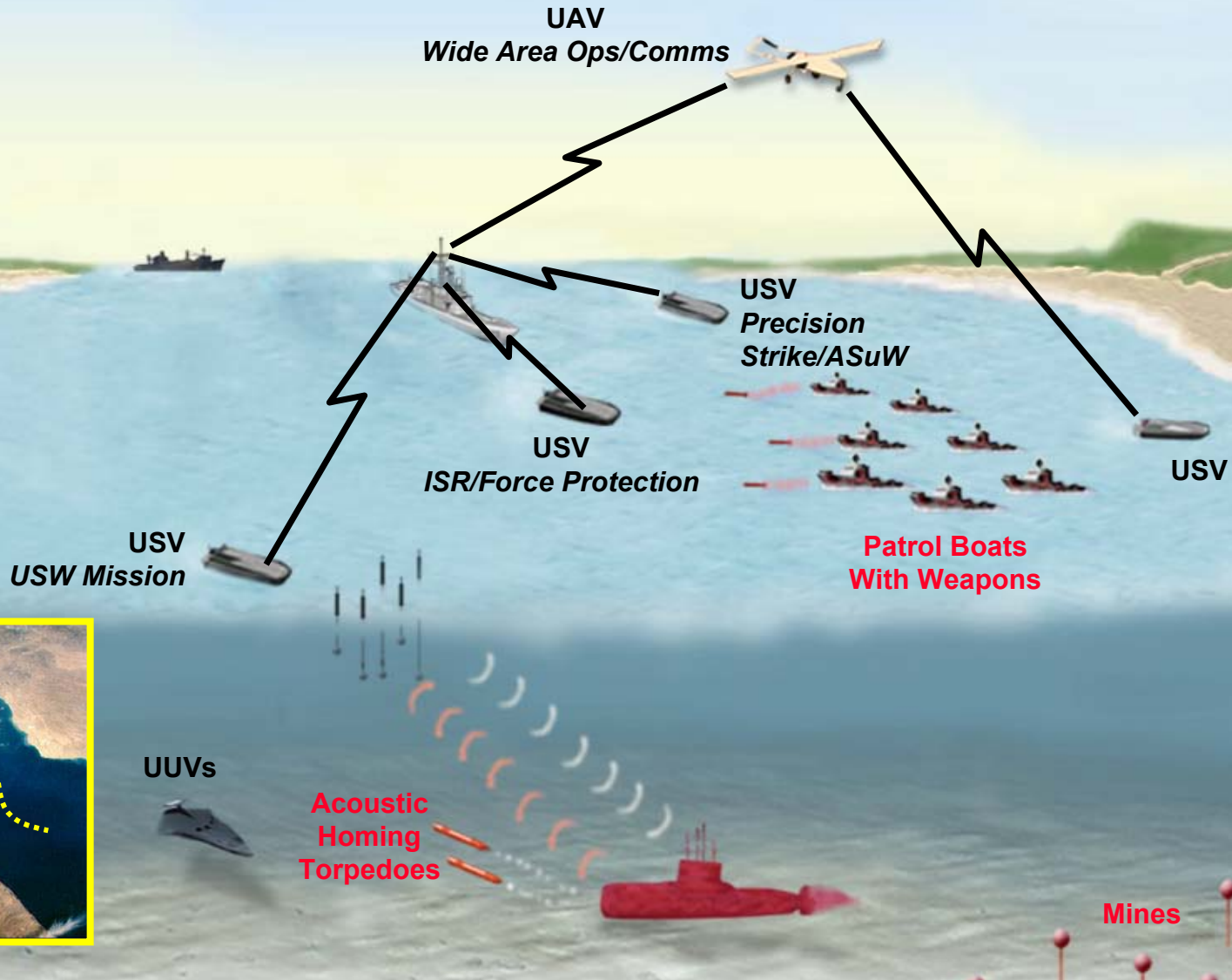
SPARTAN SCOUT Concept

Levels the Battlespace by Distributing the Combat System

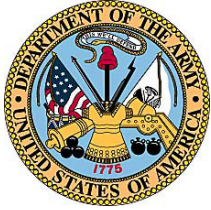


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FOR ACTD, ROBUST LOS AND LIMITED OTH C² WILL BE DEMONSTRATED



SPARTAN SCOUT

Capabilities With Existing Technology



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❑ High Endurance, Long Range w/ Loiter Capability

- Time: up to 8 (TBD) hours (continuous) [48 hrs]
- Range: up to 150 nmi [1,000 nmi]

❑ Transit Speeds > 28 kts (in SS3) [50kts]

❑ Large Payload: up to 2,600 lbs [5,000 lbs]

❑ EXTEND the Operational Environment

- Inclement weather
 - » Higher Sea States than Manned Operations
- Night operations

❑ Multi-Mission, Rapidly Reconfigurable*

- MIW, FP/ISR, ASW, Precision Strike

❑ Multiple Methods for Deployment

- Surface ship deployed
- Launched from land (forward deployed or homeland security shore station)
- Airlift/ Airdrop



7-meter USV
[11-meter]

* MIW currently primary N76 focus, Other Navy missions being explored



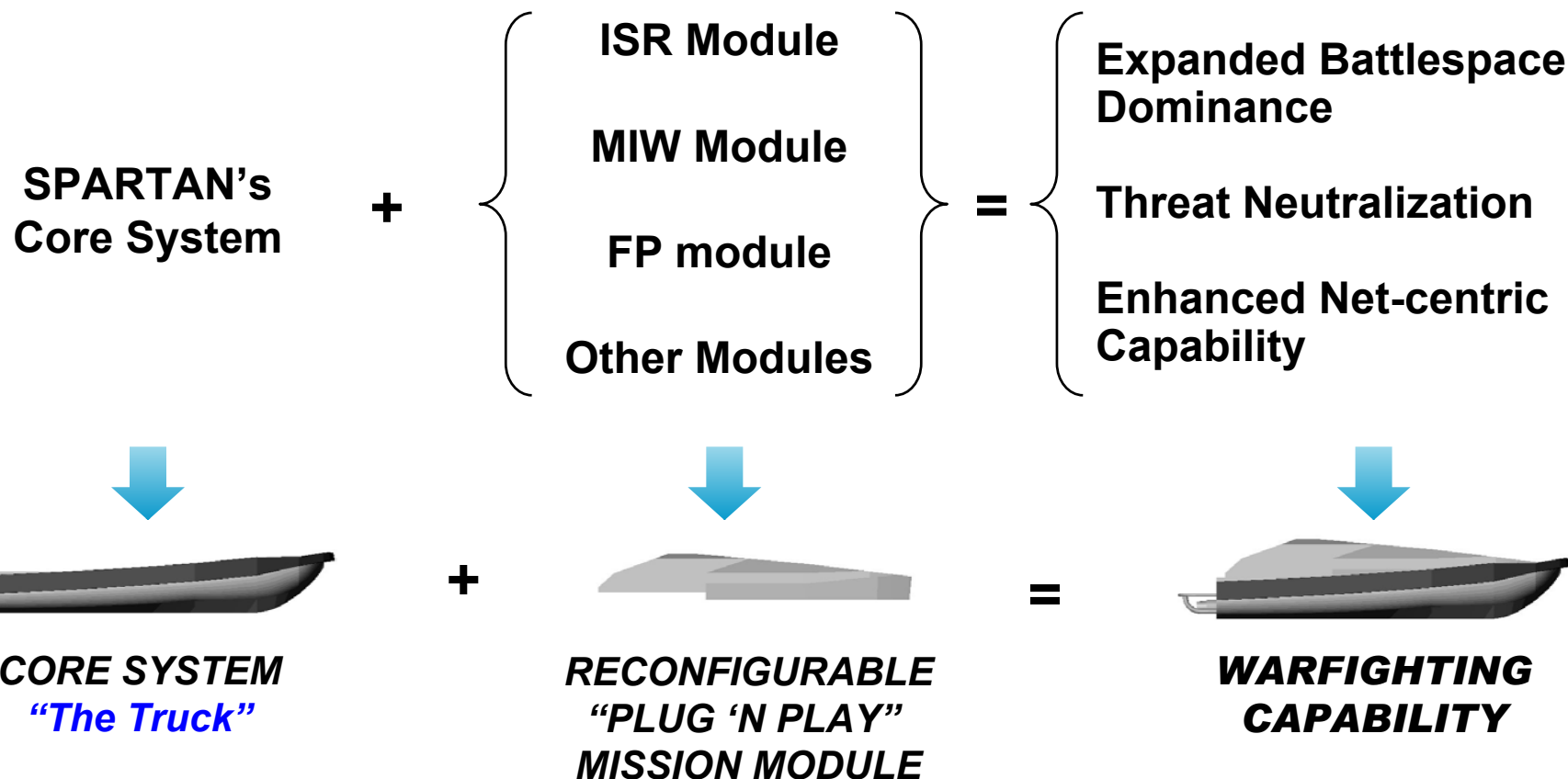
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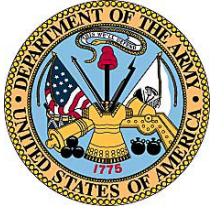
FY02 ACTD

SPARTAN'S

Plug 'n Play Modularity Increases Capability



Modular Platform Enables Adaptability to New Technologies and Threats

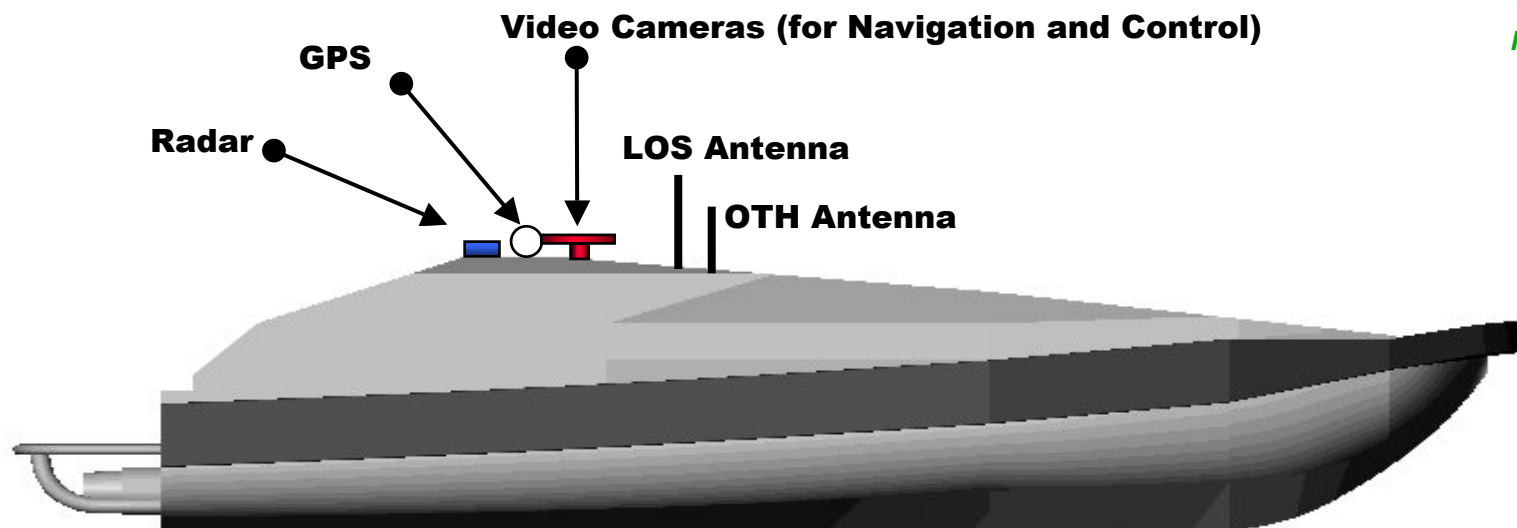


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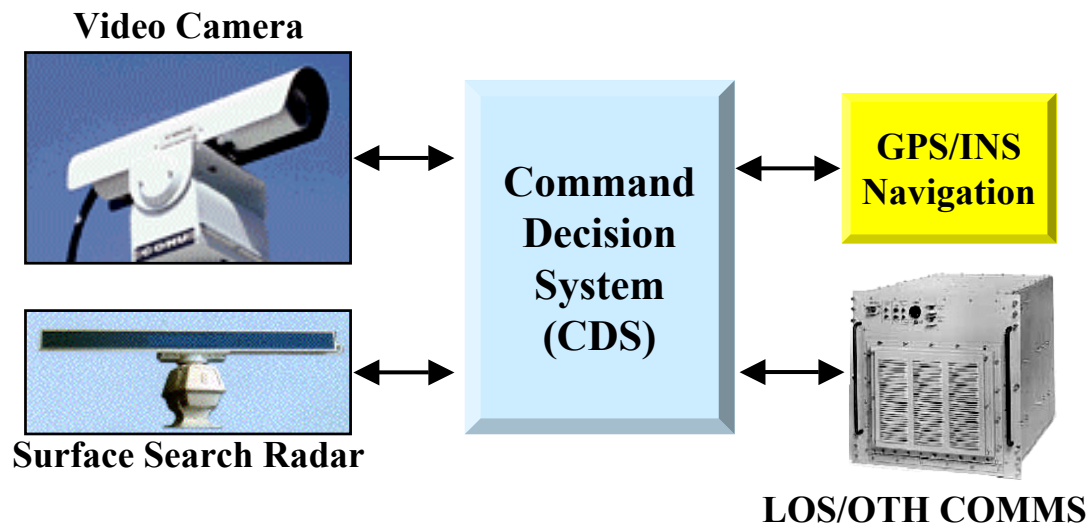
SPARTAN SCOUT Core System



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Existing Navy Standard RHIB & Davit



USE EXISTING LOGISTICS - INTEGRATED FIELDIED SYSTEMS



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SPARTAN SCOUT ACTD

Potential Demonstrations



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- ❑ **DEMO 1:** *MIW*
- ❑ **DEMO 2:** *Force Protection/ISR*
- ❑ **DEMO 3:** *Precision Strike*
- ❑ **FINAL DEMO:** *Control of Multiple (3) SPARTANS*



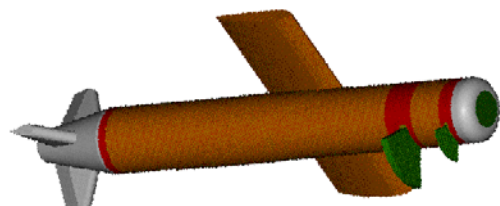
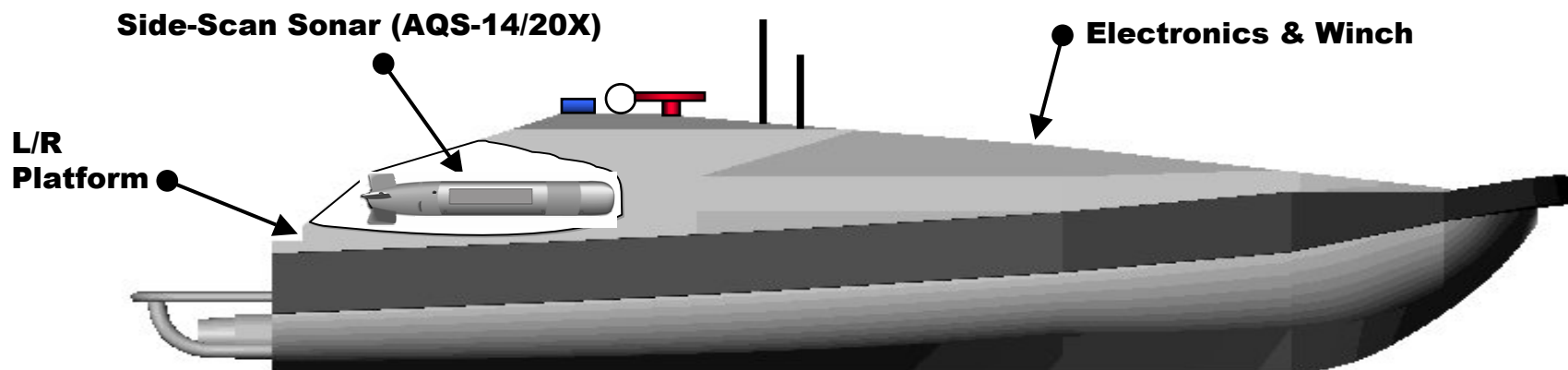
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MIW Module Concept

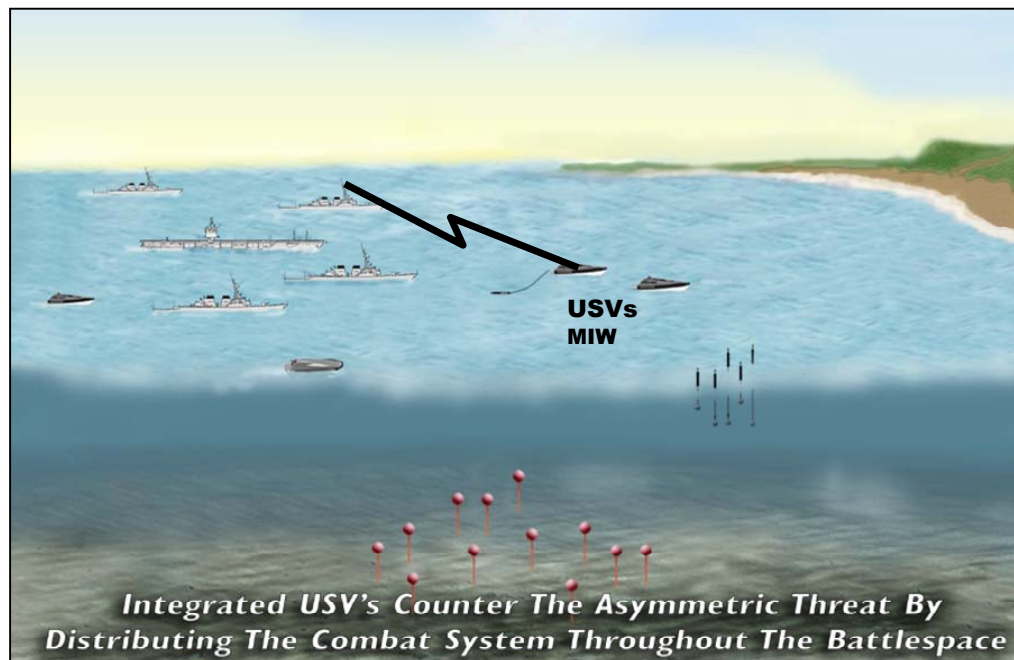


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AQS-14/20X

NOTE: *Integration of Klein 5500 is 1st Spiral for Initial capability and risk mitigation*





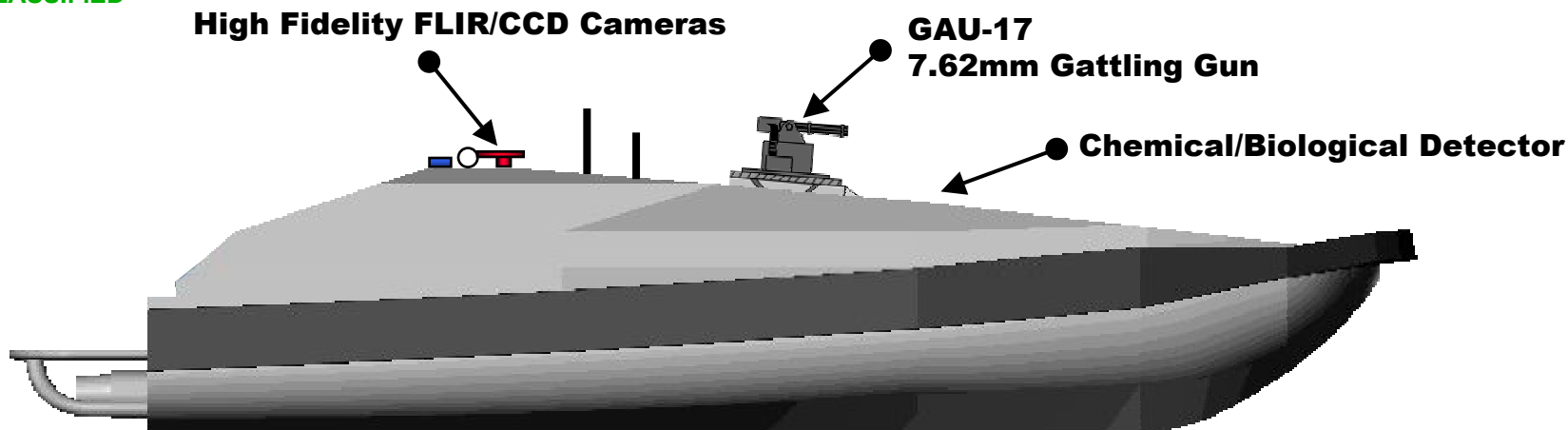
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ISR-FP Module Concept



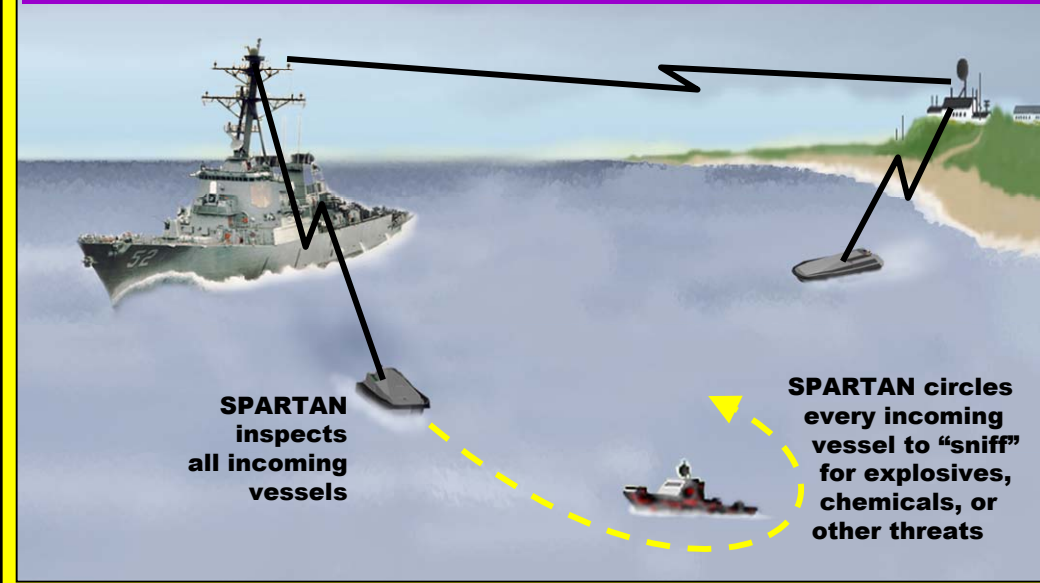
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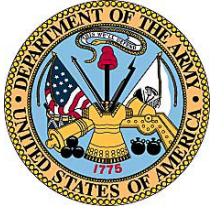


GAU-17 Gun



SPARTAN CAN INSPECT MARITIME TRAFFIC AND PROVIDE PORT-PROTECTION





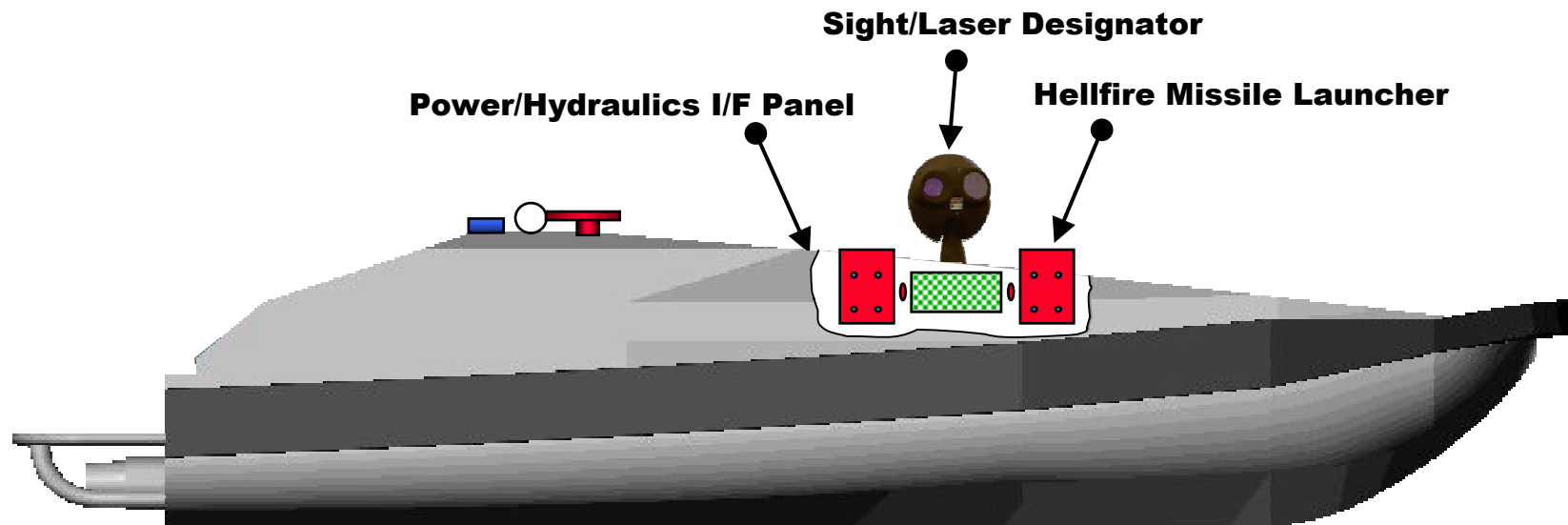
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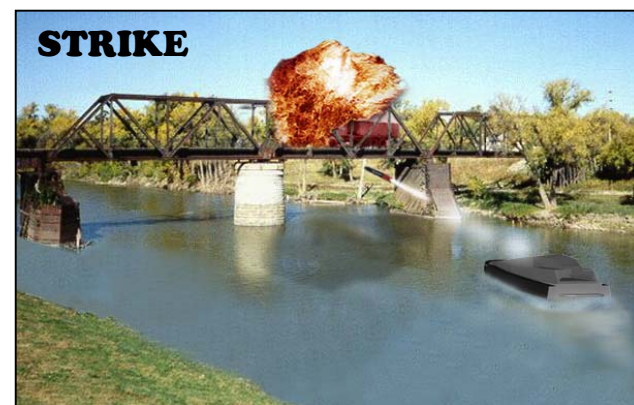
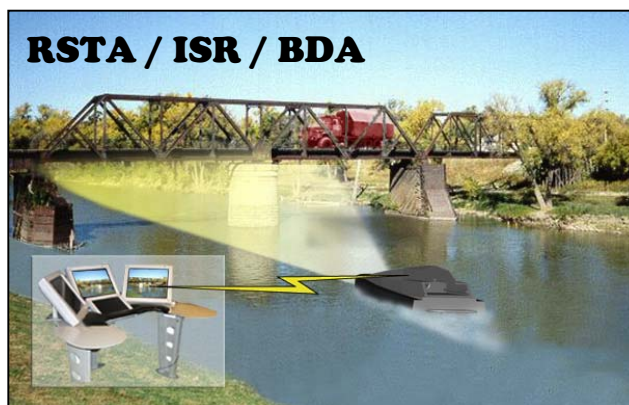
Precision Strike Module Concept



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Hellfire Missile



SPARTAN PROVIDES AN INTEGRATED SENSOR AND WEAPON SYSTEM



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SPARTAN SCOUT

FY02 Participants



FY02 ACTD

□ TECHNICAL

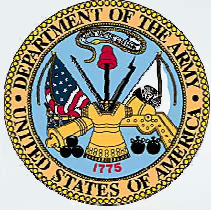
- Navy: *NAVSEA (NUWC)*
- Army: *AMRDEC, TRADOC*
- Singapore: *RSN*
- Industry: *Raytheon, Northrop Grumman, TEAM ONE USA*

□ OPERATIONAL

- CINC Sponsor: *PACOM*
- Operational Manager (OM): *COMTHIRDFLEET*
- Users: *3rd Fleet, 7th Fleet, Army (FPBL), RSN*

□ SPONSORS

- Navy (OPNAV N76), Army (AMRDEC), Republic of Singapore, DUSD (AS&C)



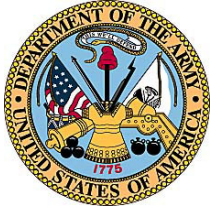
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FY03 NEW START PROGRAM SPARTAN For *Anti-Terrorism/Force Protection (AT/FP)*





FY03 New Start Program SPARTAN for AT/FP



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- ❑ **\$36M** in FY03 for **Warfighter Protection Technologies/Unmanned Surface Vehicles [PBD736]**
- ❑ Its description is to “support 3 RHIB units in NUWC demonstration of **Unmanned Surface Vehicles** (USV) to provide **Force Protection, ISR,** and **potential weapons** platforms for naval harbor and port facilities; it **would provide 3 vehicles and mission payloads.**”



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SPARTAN AT/FP

in Support of Warfighter Protection Technologies



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Potential Modules*

Gun



Rocket/Missile

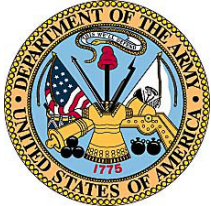


Non-Lethal



\$36M – AT/FP capability for multi-vehicle, multi-module integrated system with ship & shore-based launch and retrieval systems

*** Enhanced ISR/EO/IR capability as part of core system**



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Remote Operated Small Arms Mount



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SURFACE SCAN RADAR

SYSTEM INTERFACE MODULE



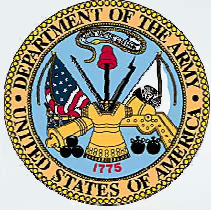
WEAPON MOUNT(S)



ELECTRO OPTICAL SENSOR



CONTROLLER



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FLEET BATTLE EXPERIMENT – JULIET (FBE-J) (25 July 2002 – 1 August 2002)





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SPARTAN FBE-J Experiments

Pre-Experiment Workups

Narragansett Bay, Rhode Island, June/July 2002



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SPARTAN AND ROBOSKI



SPARTAN



SPARTAN USV Program Summary



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FY02 ACTD

OBJECTIVE: *Demonstrate the Military Utility of USVs for Assured Access and Force Protection in the Littorals and fill a void in capability that the Fleet is in critical need of today*

❑ FY02 ACTD

- Started May 2002
- Demos for:
 - » MIW
 - » Force Protection
 - » Precision Strike
 - » C² of Multiple Spartans

❑ FLEET RESIDUALS

- 3 SPARTANS with 3 mission module
 - » Supported in Fleet for 2 years

❑ FY02 EXPERIMENTATION

- JTFEX
- FBE-J

❑ PRODUCT: A RHIB which can be deployed from Surface Ships and Shore-based Facilities which has:

- Unmanned, semi-autonomous operations
- Robust line-of-sight C2
- Limited over-the-horizon C2
- Existing systems and sensors
- Modular design
- Cost effective and potentially expendable