

Unclassified

# Naval Special Warfare

***CEROS Industry Week***  
**14-16 SEPTEMBER 2009**



U.S. Navy SEAL



U.S. Navy SWCC

## **NSW S&T Requirements**

**Mr. Bruce Holmes (SEAL Ret.)**  
**CNSWC, N83**

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# *Naval Special Warfare*

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## **– Technological Innovation**

“The ability to quickly implement technological advancement is a vital element of strategic agility. The speed with which NSW we can identify, fund, and creatively employ enabling technologies will enable future Naval Commandos to counter future threats.”

– *Rear Admiral Eric T. Olson, COMMANDER, NAVSPECWARCOM 2002*



# ***The NSW S&T Vision***

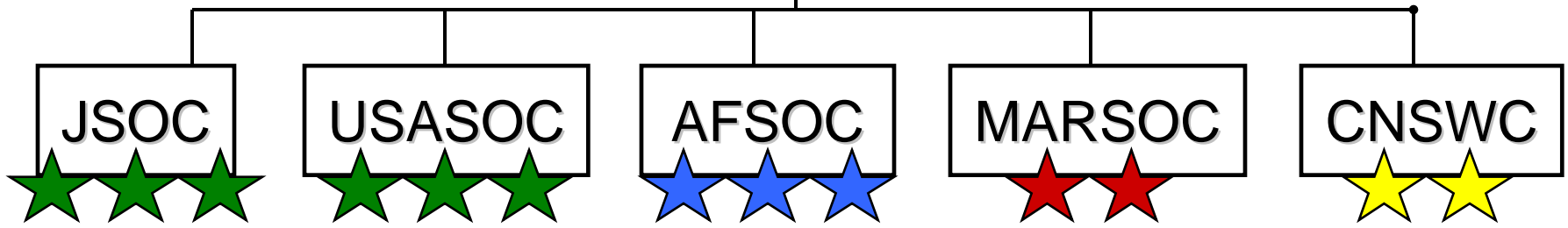
***Naval Special Warfare envisions operators that are optimally equipped and trained to prevail in complex operations now and in the future. Effective and well-targeted Science and Technology (S&T) investment will inspire and guide the innovation required to provide technology-based options for future capabilities.***



# Who We Work For



*“COCOM to SOCOM!”*



JOINT TACTICS  
TRNG DEVELOPMENT

SPECIAL FORCES  
RANGERS  
ROTARY WING AV.  
PSYOP  
CIVIL AFFAIRS

AVIATION  
•FIXED WING  
•ROTARY WING  
SPECIAL TACTICS GP  
COMBAT WX SQDRN

SPEC OPS BRIGADES  
-1 PER COAST  
FOREIGN MILITARY  
TRNG UNITS  
SPEC OPS SUPP GP

SEAL TEAMS  
SPECIAL BOAT TEAMS  
SDV TEAMS  
PE TEAMS



# ***Force Construct***

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**Admiral Olson –USSOCOM**

**Vice Admiral Maguire – NCTC**

**Vice Admiral McRaven – CDR JSOC**

**Vice Admiral Harward – CDR JFCOM**

**Rear Admiral Kernan – FOURTH FLEET**

**Rear Admiral Winters – CNSWC**

**Rear Admiral Bonelli – DCDR NSW**

**Rear Admiral Pybus – CDR SOCPAC**

**Rear Admiral Losey – NSC**

**Rear Admiral Rosholt – DCDR CENTCOM**

**Rear Admiral (Select) Brown – CNSWG-1**

**SEAL Leadership:**

- National Security Council
- White House Fellowship
- SOCOM Congressional Liaison

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# WHAT WE SUPPORT



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# Where We Came From

*NSW and its predecessors have been involved in every major U.S. conflict since World War II*



- **Origins**

- Scouts and Raiders
- Naval Combat Demolition Units (NCDU)
- Office of Strategic Services Swimmers
- Underwater Demolition Teams (UDT)
- PT/Motor Torpedo Boat Squadrons

- **SEAL Teams ONE/TWO**

- Established January 1962
- First use of “Naval Special Warfare” designation

- **Vietnam War**

- Developed robust riverine warfare capability, which produced the forerunner of our current surface mobility platforms and the modern SWCC warrior



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# NSW S&T Structure




USSOCOM  
SOAL-T / PEO's



NSWDG  
N54 Combat Development



CNSWC  
Science & Technology, N83  
Combat Development, N34



National to Theater Transition



NSW Group 1  
N8

NSW Group 2  
N8

NSW Group 3  
N8

NSW Group 4  
N8

Tactical Ground Mobility  
C4I

Combat Systems  
Soldier Systems

Undersea Mobility  
ISR  
UGS / SOTVS  
UUV/UAV Sensors


Surface Mobility  
MCADS  
STRATLIFT Req.

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# Science and Technology Strategic Plan

**Naval Special Warfare**

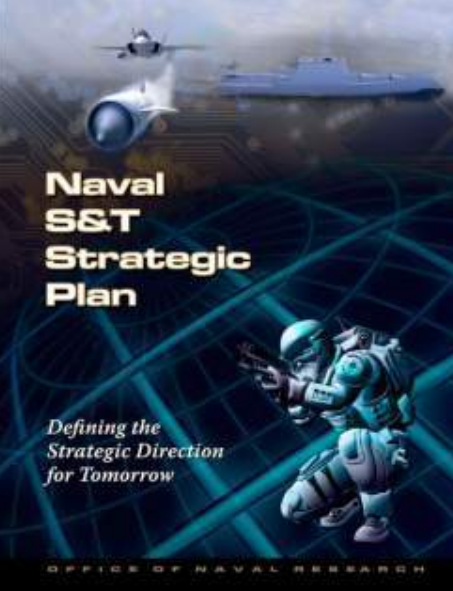


**Science & Technology Strategic Plan**



**April 2009**

Science and Technology Strategic Plan  
United States Special Operations Command

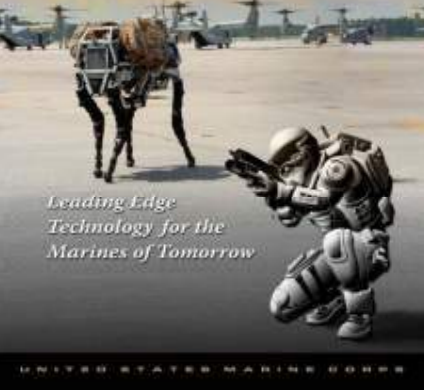


**Naval S&T Strategic Plan**

*Defining the Strategic Direction for Tomorrow*

OFFICE OF NAVAL RESEARCH

**U.S. Marine Corps S&T Strategic Plan**



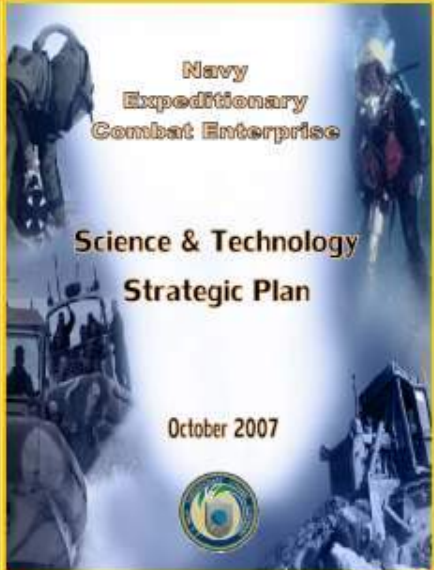

*Leading Edge Technology for the Marines of Tomorrow*

UNITED STATES MARINE CORPS

**Navy Expeditionary Combat Enterprise**

**Science & Technology Strategic Plan**

October 2007





# ***NSW Science and Technology Strategic Plan***

## **NSWTO Organization.**

NSWTOs have been organized in seven categories. These are based upon the six overarching tasks of the Universal Joint Task List (UJTL), and one additional functional area worthy of attention:

- ◆ ***Maneuver*** (MVR)
- ◆ ***Intelligence, Surveillance, Reconnaissance*** (ISR)
- ◆ ***Fires*** (Fires)
- ◆ ***Logistics*** (Log)
- ◆ ***Command and Control*** (C2)
- ◆ ***Force Protection*** (FP)
- ◆ ***Human Performance, Training, and Education*** (HPT&E)



NSWTO Number	Priority	NSWTO Title
NSW ISR 09-1 *	1	Mobile, tactical, persistent, unattended collection sensor platforms
NSW C2 09-6 *	2	Advanced communications/data relay
NSW ISR 09-7 *	3	Autonomous sensor deployment in denied areas
NSW FP 09-1	4	Improved protection for individuals
NSW ISR 09-6	5	Specific entity awareness (tag, track, and locate)
NSW Log 09-9	6	"Lighten the load" technologies
NSW C2 09-12 *	7	Multi-function VHF, UHF, and UHF SATCOM antenna
NSW MVR 09-15 *	8	Advanced robotic systems for ground combat
NSW MVR 09-3 *	9	Reduced signatures (across all spectra) for NSW watercraft, vehicles, and personnel
NSW HPT&E 09-1	10	Speech translation
NSW C2 09-8 *	11	Advanced tactical communications
NSW Log 09-1 *	12	Advanced power sources for equipment
NSW Fires 09-16 *	13	Highly responsive loitering munitions/ weaponized UAS
NSW FP 09-9 *	14	IED detection technology
NSW Log 09-2	15	Advanced NSW logistics chain
NSW FP 09-2	16	RPG defense for watercraft and vehicles
NSW HPT&E 09-12	17	Exposing hidden enemy networks, anticipating and influencing behavior
NSW C2 09-1 *	18	Scalable, mobile OTH digital communication networks
NSW ISR 09-8	19	Structure-penetrating sensors
NSW Fires 09-9 *	20	Lightweight day-night weapons optics
NSW Fires 09-7 *	21	Lightweight, all weather, precision targeting technologies
NSW FP 09-3 *	22	Enhanced lightweight armor systems for watercraft and vehicles
NSW MVR 09-13 *	23	NSW mobility from submerged platforms
NSW MVR 09-11 *	24	Advanced Navigation
NSW MVR 09-8 *	25	Multi-fuel engines for NSW watercraft

Table 1. NSWTO Priorities for 2009-2011



# ***NSWTO Priority #9***

## **◆ NSW MVR 09-3: Reduced Signatures (Across All Spectra) for NSW Platforms, Personnel, and Equipment**

Develop technologies to manage signatures of NSW platforms, personnel, and equipment in all spectra to remain below detection and/or identification thresholds. Focus should be upon lightweight technologies that significantly reduce radar, acoustic (air-borne and underwater), electro-optic (vision and image-intensified), infrared, and bioluminescent signatures. Technologies should provide advanced capabilities for camouflage, concealment, and spoofing. [See also NSW FP 09-6: Adaptive camouflage.]

Linkages:	<i>NSW 2005:</i>	#10	<i>FNC Pillar:</i>	NEMW
	<i>SOCOM 2005:</i>	#29	<i>PR11 FNC Gap:</i>	38
	<i>NECE 2007:</i>	MVR 3	<i>ONR Focus Area:</i>	AA, AIW;
	<i>USMC 2007:</i>	n/a		SSD, DO

*USSOCOM SOAL-ST 2009 S&T Strategic Plan*

*Area of interest:*

Mobility:

- Low Observable and Counter Low Observable technologies
- Advanced mobility platforms to access sensitive or denied areas



# *NSW Vision 2008*

**NAVSOF** will explore next generation,

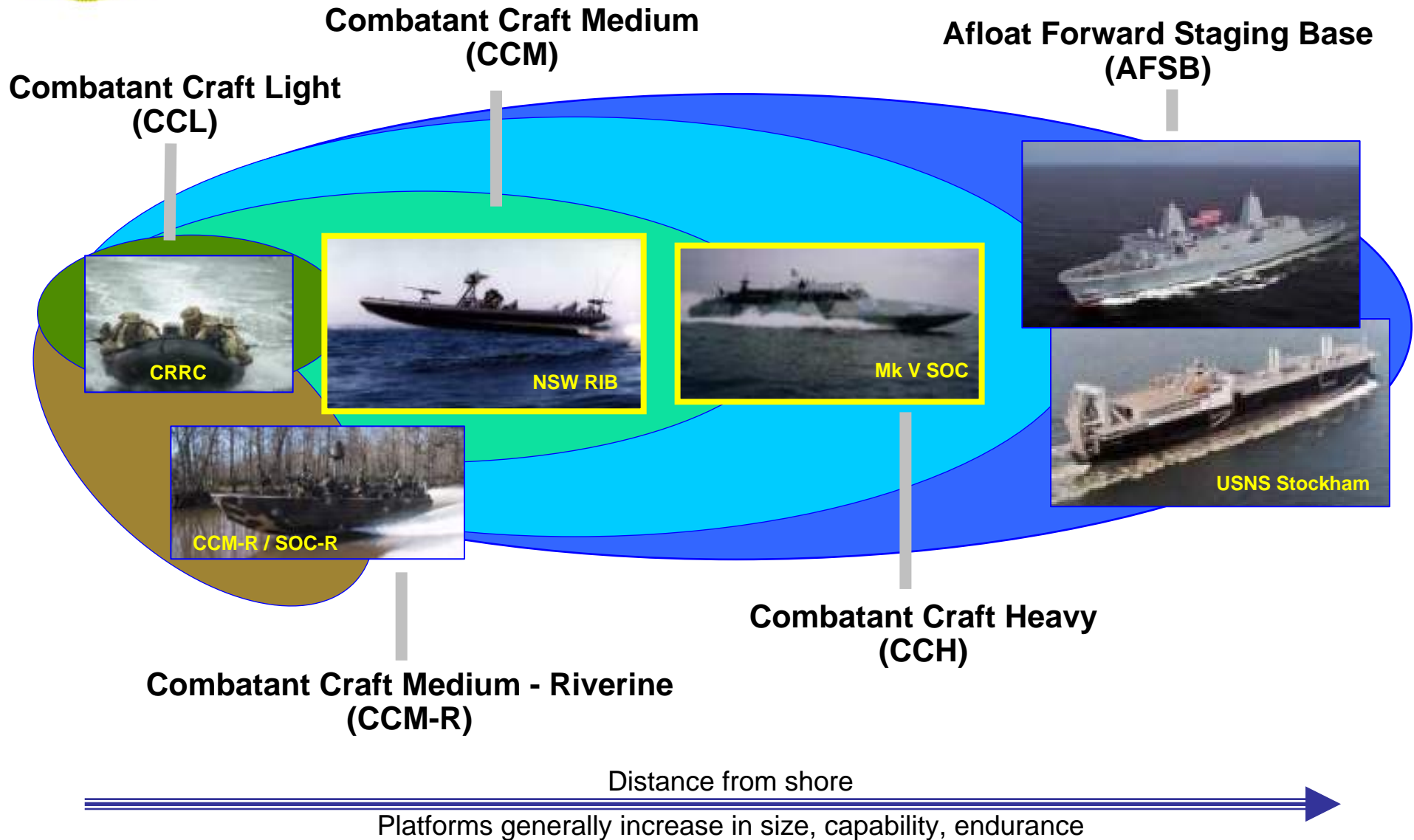
- Stand-off and precision weapons for both maritime and land environments.
- Tactical ground mobility
- Maritime Mobility
- Small Arms and Visual Augmentation Systems (VAS)
- NSW Information Surveillance and Reconnaissance requirements will include unattended and attended sensors collection capabilities for ground, airborne and in maritime (surface and subsurface) environments.
- Next generation and off –the shelf precision geo-location and other equipment will be used to improve F3EA.
- To Leverage materiel resources and technologies

These systems must be net-centric and interoperable across DOD



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# Current SOF Surface Mobility

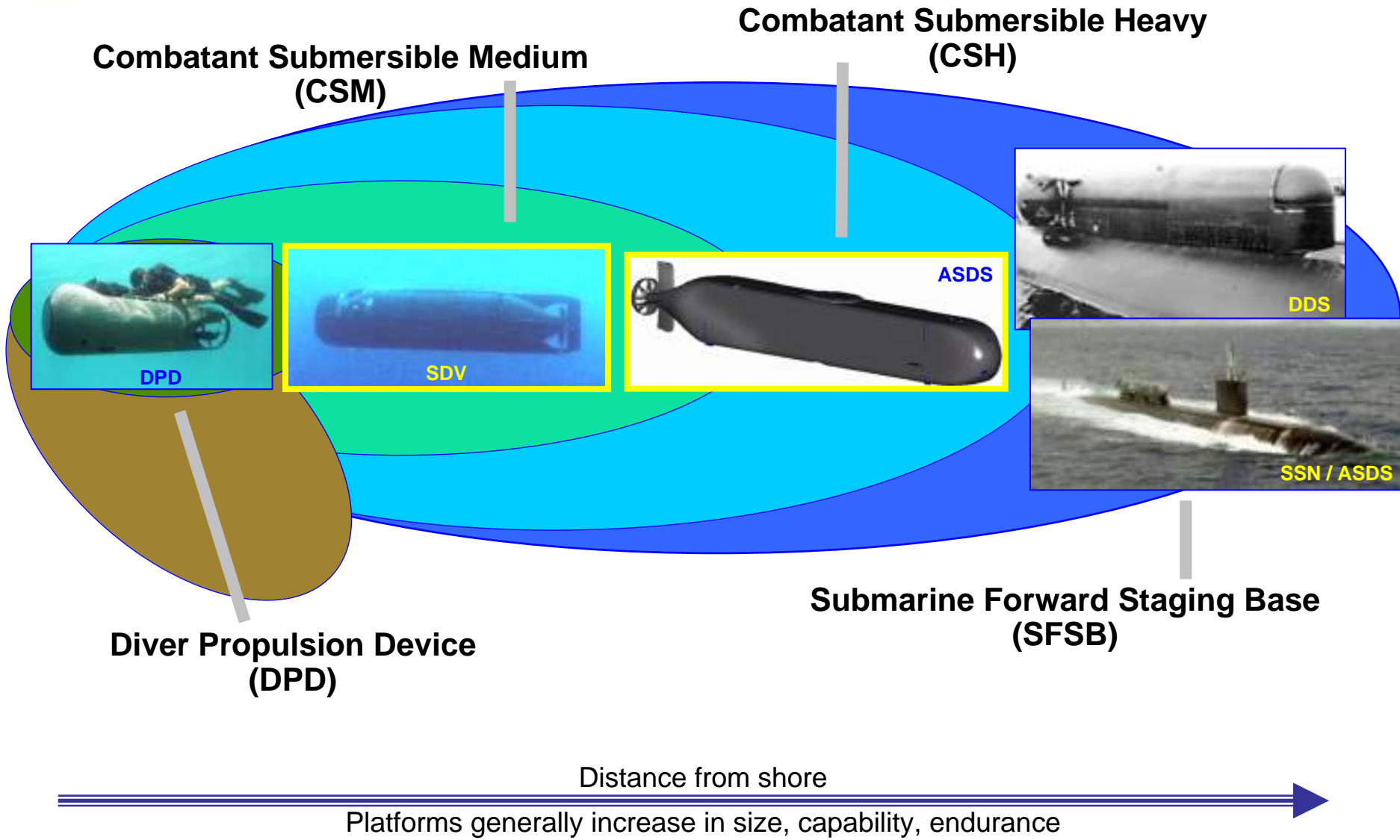


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# Current SOF Undersea Mobility



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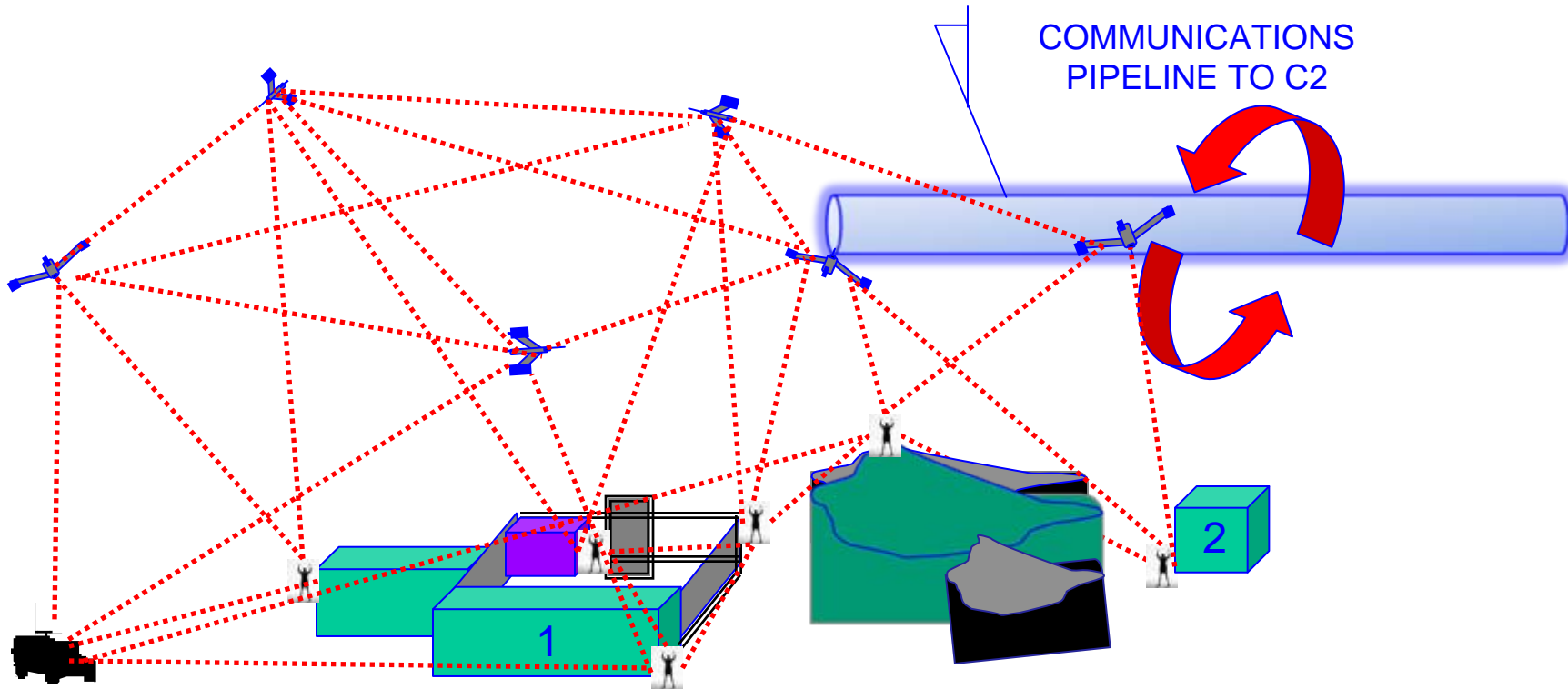
# *NSW Future Projects*

- Underwater Comms Over Light (SDV Data)
- USV –3 meters size
- Tactical UAS/EUAS Payloads
  - (LIDAR, COMINT, SIGINT, DCAS)
- UAV Avionics & Networked Pods Capability w/  
Autonomous Flight and Sensor Actions





# ***WOLF PACK SCENARIO (UAS WITH MESH NETWORK)***



•MESH NETWORK WITHOUT UAS

•NOTE: EACH NODE IS A BFT

•MESH NETWORK WITH UAS

**Unclassified**



CEROS/DARPA

A Milestone NSW "LOS"

NSW Trident V/S

CBE (USSOCOM S&T) (Proof of Concept)

Tech Management (NAVSEA/NAWC/ONR)

A NSW "LOS"

Funding \$\$ SOST/SOTD/OPM

Requirement

AOA/Market Survey

Selection

Development

CPD/CDD (development??)

B Milestone

STOP

\*MBE (USSOCOM S&T) (Demo Concept)

\* TRL 6 or 7

Combat Evaluation

SOAL-T/ONR (T2/w PEO)

C Milestone

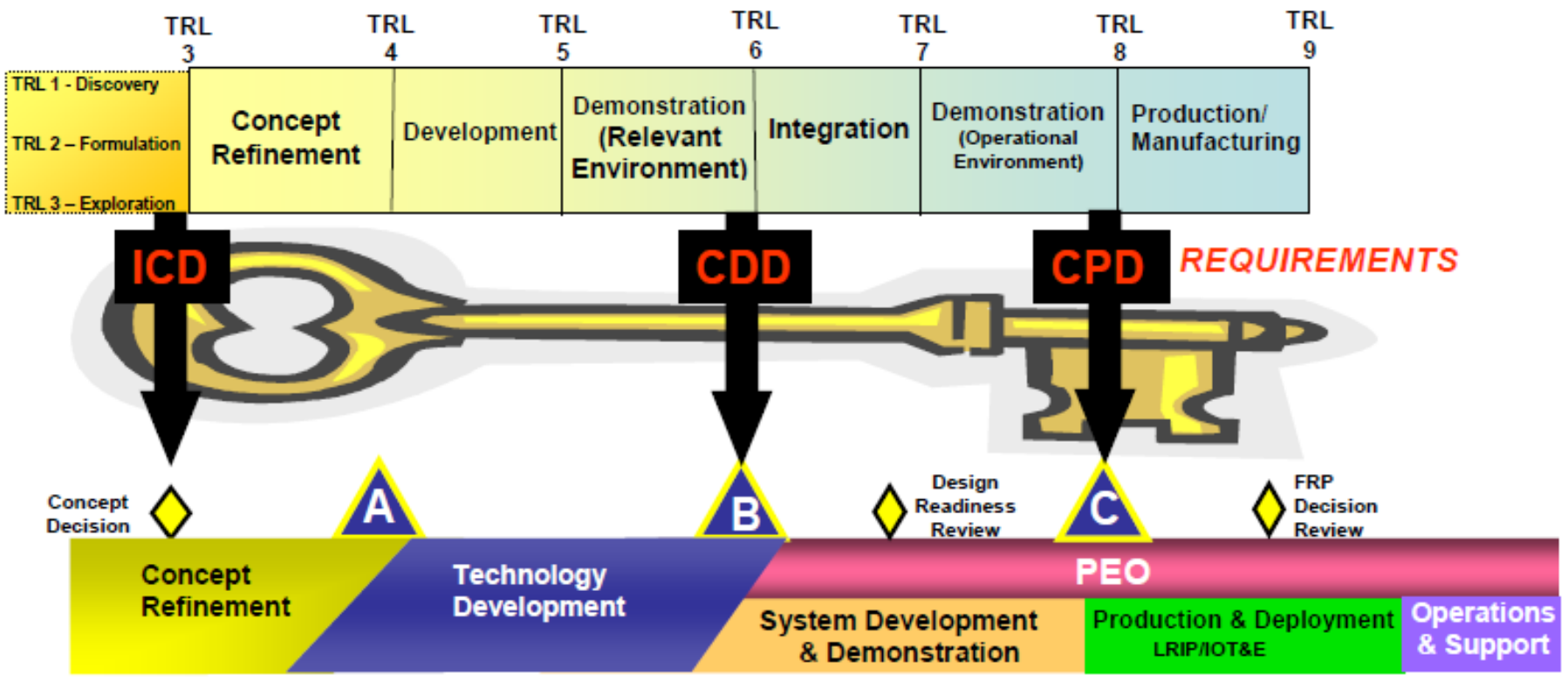
STOP

DT/OT within P.O.R.



# Developmental vs. Acquisition

## Science & Technology Project



## Acquisition Program



# ***QUESTIONS***

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## **Naval Special Warfare Command Science & Technology Advisor**

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