



2010 ONR Naval S&T Partnership Conference

Next Generation Technologies for Today's Warfighter
Transition Overview and Opportunities

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Revolutionary Research . . . Relevant Results

O F F I C E O F N A V A L R E S E A R C H

Office of Transition

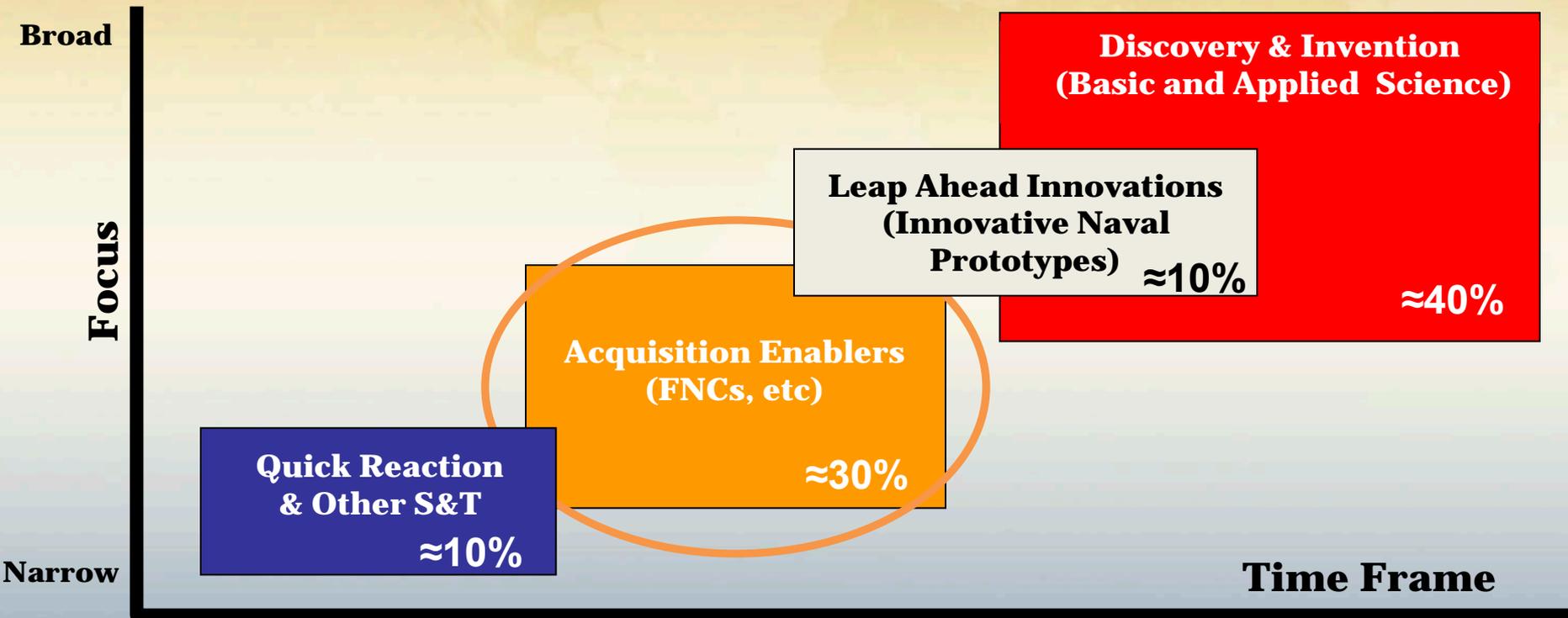
Mission:

- Facilitate technology transition to the fleet, force and acquisition communities

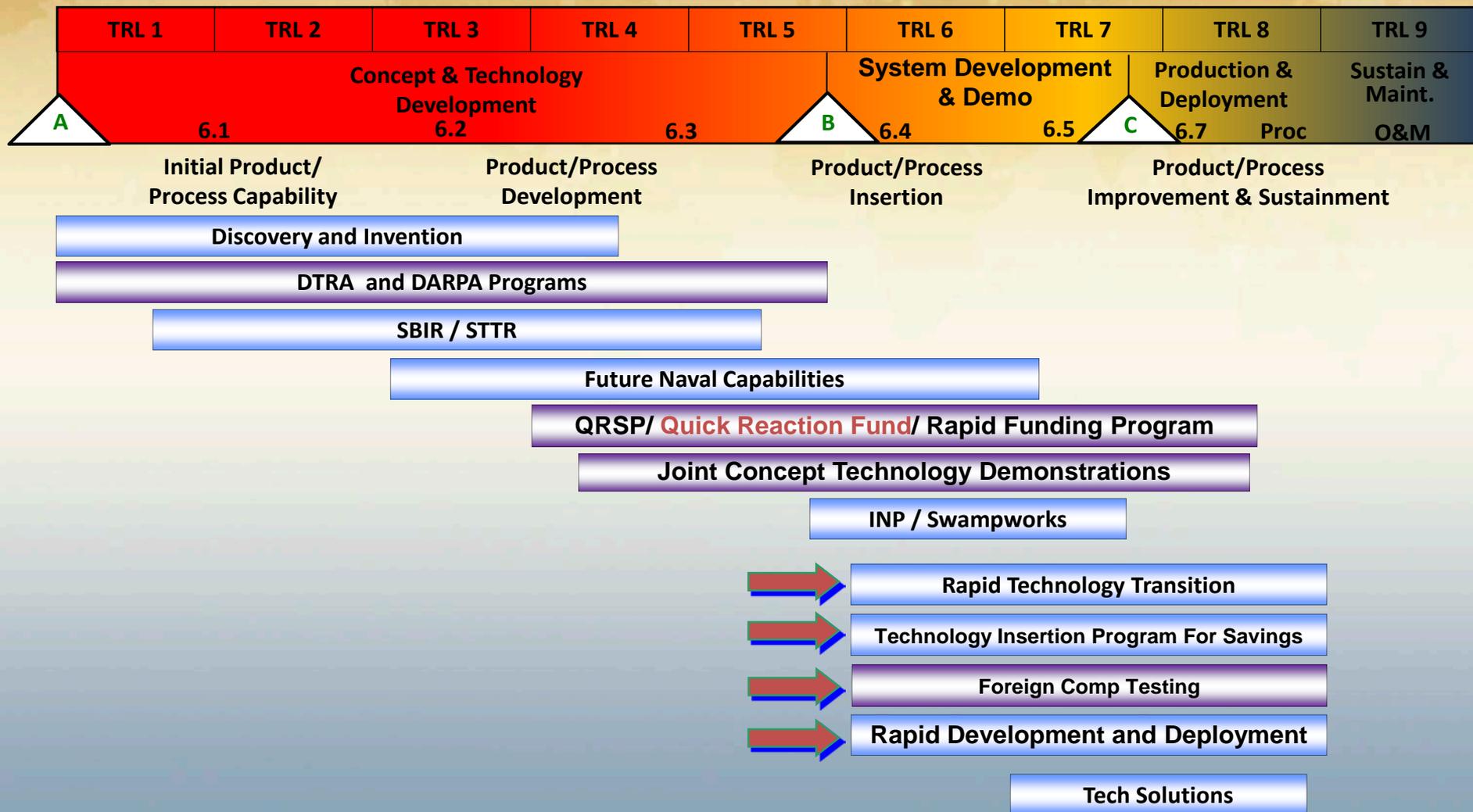
Goals:

- Transition of technologies to the fleet and acquisition
- Emphasize transition centric programs and methodologies including:
 - Efforts covering manufacturing methods used to build naval warfare systems
 - Programs that stimulate advantageous government-industry partnerships
 - An investment portfolio focusing on requirements pull by fleet and acquisition
 - Affordability

Director of Transition Portfolio



Investment Targets



Transition Overview

- S&T passes mature technology to acquisition into development and production programs
- Agreement must exist on the maturity and readiness at the stage this happens (Technology Transition Agreement)
- Key components agreed upon in a TTA:
 - Description of Product
 - Completion/Transition Year
 - Level of Risk (Technology Readiness Level)
 - Demonstration of TRL
 - Exit Criteria

Transition Commitment Level (TCL)					
Strength of Transition Commitment	Years remaining in approved S&T development program				
	1	2	3	4	5+
A TTA Level A - Committed Fully executed final TTA. Including integration strategy. Transition funding programmed.	A1	A2	A3	A4	A5
B TTA Level B - Working Detailed Exit Criteria. Acquisition Program interested. Transition TRL established. Proposed Transition Budget, PE Line identified/targeted	B1	B2	B3	B4	B5
C TTA Level C - Initial Initial Exit Criteria. Target Acquisition Program Identified and Program Manager is watching with interest as technology is developed. PE Line identified/targeted. Key stakeholders identified	C1	C2	C3	C4	C5
D No TTA IPT and TOC commitment.	D1	D2	D3	D4	D5

FNC Product: K/Ka/Q-Band Phased Array									
<ul style="list-style-type: none"> • EC Number/Title: FNT-FY04-08: Advanced Communication for FORCEnet. • EC Manager: Adrian Eley / 311 / 703 588 2012 / eleya@onr.navy.mil • Gap Number/Title: Gap 16 - Ubiquitous, Secure Communications and Network Infrastructure. • FY& TRL Start - Stop: FY03 (TRL 3) - FY05 (TRL 6) • Acquisition Program: SSN888 and Trident Modernization, PEO C4I and Space, PMW 173, Ruth Youngs Lew • Resource Sponsor: N77 and N76/ DD(X) Design Agent (Raytheon) • Transition Status: Signed TTA PMW 173 Transition FY06 • Deliverables: Ka/Q-band transmit arrays. K-band Receive Array design utilized by DDX. 							Assessment* Cost G Schedule Y Technical R Transition R		
	Funding	PE Number	FY05	FY06	FY07	FY08	FY09	FY10	FY11
S&T (6.2/6.3)			\$2.10M						
	0604502N Project X0742		\$10.1M	\$16.7M	\$14.0M	\$14.0M	\$13.9M		
Transition (6.4/6.5)									
Comments/Issues <ul style="list-style-type: none"> * Both the K and Q band arrays had technical difficulties which required schedule shift, resulting in a yellow score above. * There are two major issues for the Q band array: cost and performance. Unless the Q band antenna can be delivered at cost less than \$200million, successful transition of full C4I phased array solution is in jeopardy. * Both K and Ka band arrays are usable for VMEband Gapfiller Satellite and both designs are being used of JUCAS program. 									
*S&T Cost/Schedule/Technical Green: S&T On Track for Delivery Yellow: Identified Delivery Issues/Risk but Manageable **Red: S&T Delivery Unlikely or at High Risk					*Transition Green: Adequate Funds Programmed Yellow: Funds Planned/IPT Committed **Red: No Funding Plan				
** Requires recommendation on continuation in comments box.									

Small Business Innovation Research/ Small Business Technology Transfer (SBIR/STTR)

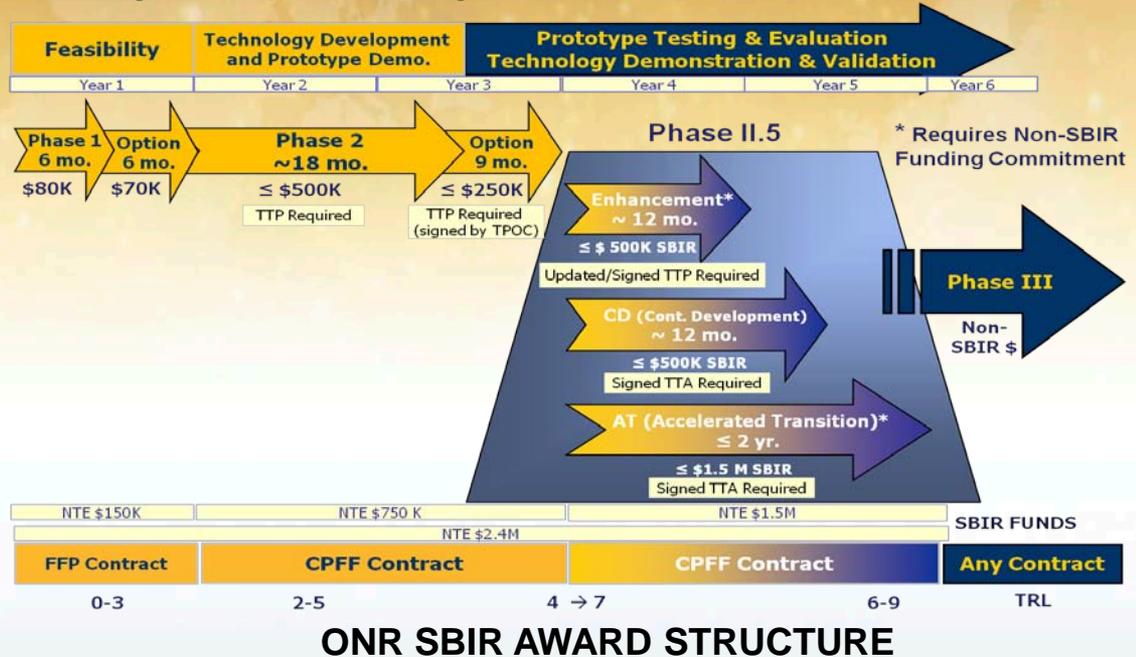


Objective:

- Provide opportunities for small businesses to develop innovative technologies that address high-priority Navy needs.

Typical Performers:

- Small technology companies
- U.S. Research Institutions partners (STTR)



Basic Process:

- **TOPICS** posted quarterly on DoD SBIR/STTR website (www.dodsbir.net)
- **PHASE I** awards determine feasibility of technology
- **PHASE II** awards mature technology and develop prototypes
- **PHASE II.5** awards continue technology development with strong transition potential
- **PHASE III** awards transition the technology into a DoD application with non-SBIR funding

How to get Involved / Contacts:

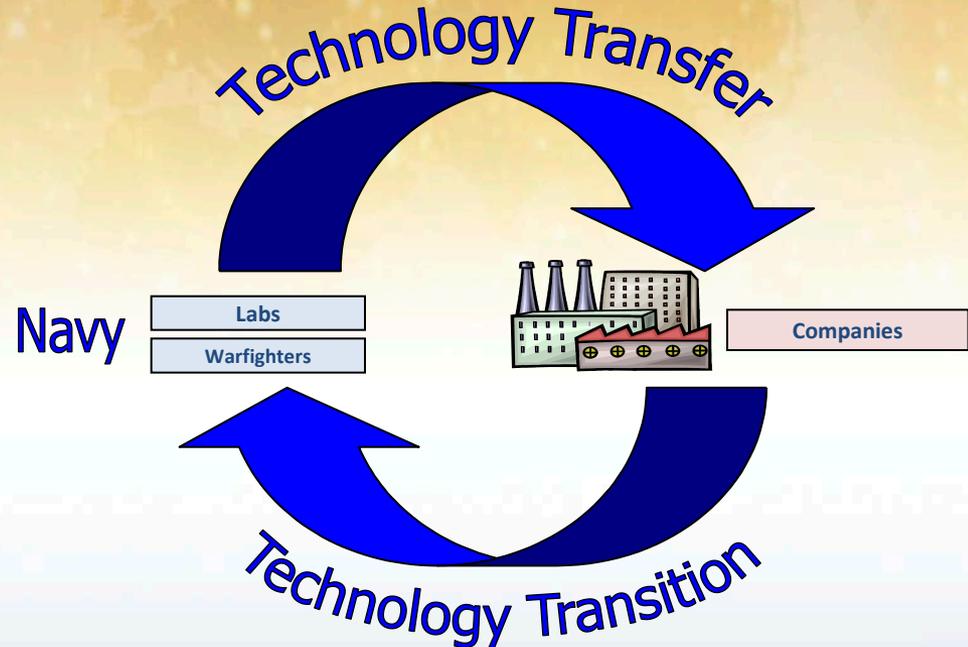
- www.navysbir.com

SBIR/STTR Construct

- **Standardized structure across SYSCOMs with defined roles for CTO and PEOs**
- **Each SYSCOM management structure has an SBIR/STTR Board, with CTO or equivalent chair and PEO/SYSCOM PM membership at each SYSCOM**
- **SYSCOM SBIR/STTR Board**
 - The goal of the Board is to raise SBIR/STTR visibility to the Provider Enterprise level
 - Helps ensure alignment of topics and dollars (down to PEO level) with Provider Enterprise (PE) demand and ASN (RDA) guidance
 - Incorporates Navy SBIR/STTR procedures based on best practices
 - Monitors SBIR/STTR transition and success metrics
- **Topics**
 - 90% topic allocation to PEOs, based on assessment
 - 10% topic allocation to PE (determined by CTO with advice of Board)
- **Program Funds (managed by SYSCOM)**
 - 70% of SBIR funds provided to PEOs
 - 10% of SBIR funds for PE priorities at SYSCOM
 - 20% of funds for CPP “Phase II.5” T&E matching projects

Objective/Goal:

- To provide Naval innovations a transition path from the lab and capitalize on the Government R&D investment by advancing the development and commercialization of technology in support of the warfighter



Basic Process:

- Businesses, universities, organizations, and individuals can collaborate with Navy labs through Cooperative Research and Development Agreements (CRADAs) and Patent License Agreements (PLAs).
- CRADAs can supply the knowledge, personnel, facilities, and equipment or other resources toward the conduct of specified RDT&E efforts that are consistent with the mission of the Naval laboratory. PLAs permit licensees to make, use and sell the intellectual property from the Naval labs.

How to get Involved / Contacts:

- navytechtransfer@onr.navy.mil
- <http://www.onr.navy.mil/tech-transfer>

Future Naval Capabilities (FNC) Program

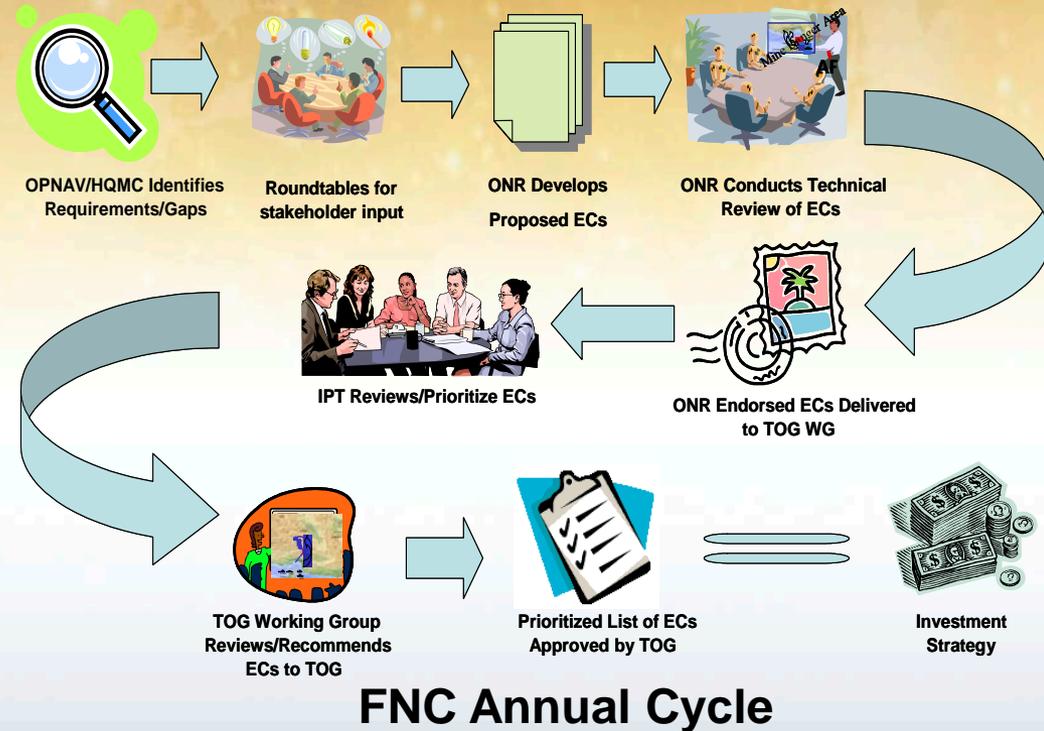


Objective/Goal:

• The FNC program is composed of Enabling Capabilities (ECs) that develop and deliver quantifiable products in response to validated requirements (Naval S&T Gaps) for insertion into acquisition programs of record after meeting agreed upon exit criteria within five years.

Typical Performers:

- DoD Labs/Warfare Centers
- Industry



Basic Process:

- FNC investments are refreshed by an established process that begins when OPNAV delivers its annual Naval Capability Gaps
- The ECs that do get funded represent the highest priorities of the Navy and Marine Corps

How to get Involved / Contacts:

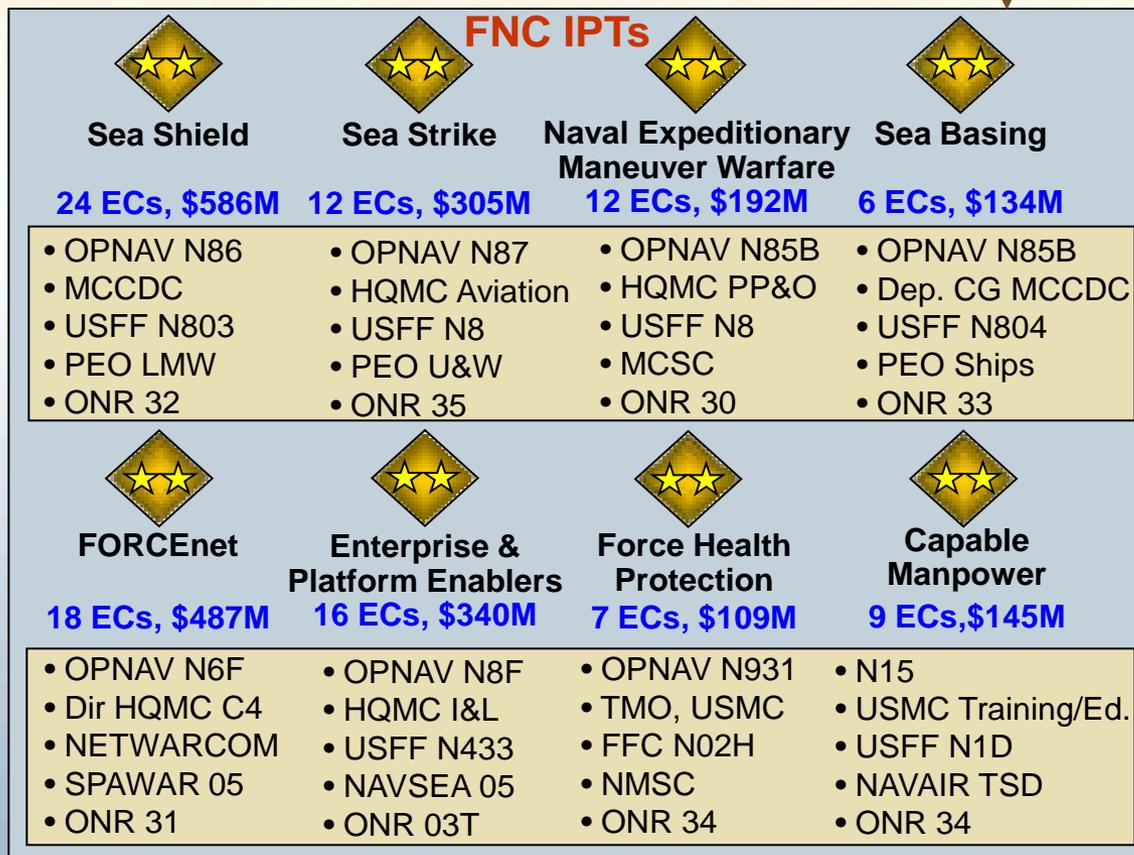
- Engage EC/Product Managers in your areas of interest; review and respond to upcoming BAA/RFPs

Technology Oversight Group

- **Co-Chairs:** N8 / MCCDC
- **Permanent Members:** PMD ASN (RDA), DCOM USFF, N091/CNR, N2/N6
- **Equity Members:** N1, N093, Deputy CNOs and Deputy Commandants

TOG Working Group

- 0-6/GS-15 Level Representatives of Each TOG Member
- Interacts with IPTs and makes recommendations to TOG



Technology Transition

Objective/Goal:

- ONR's Transition Initiatives Division directly supports technology insertion and out-of-cycle emergent needs with investment.

Typical Performers:

- SYSCOMS
- Warfare Centers

RTT →

TIPS →

RDD →

Integration

Director
of
Transition
ONR



Program
Managers/Fleet

Basic Process:

- Standard proposal format
- Enterprise CTOs coordinate project submittals
- Common proposal process
- All electronic
- Continuous calls for innovation

How to get involved:

- RTT_Contact@onr.navy.mil
- 3TTX_Contact@onr.navy.mil
- RDD_contact@onr.navy.mil.

Technology Transition Programs -NAVY

DoN Program	Purpose				
	Proposal Accepted From	Project Duration	Project Funding	Approx. # projects funded per year	Proposals Due to ONR
Rapid Technology Transition (RTT)	Rapidly transition technology into Department of Navy (DoN) programs of record (PoRs) to meet emergent/urgent Naval Needs.				
	CTOs	Up to 2 years	Up to \$2M	15	January
Technology Insertion Program for Savings (TIPS)	Rapidly transition technology from any source into DoN PoRs to significantly reduce operations and support costs.				
	CTOs	Up to 2 years	Up to \$2M	6	January
Rapid Development & Deployment (RDD)	Rapidly develops and fields prototype solutions to meet validated urgent operational Naval needs.				
	CNO N8 or CG, MCCDC	Up to 1 year	As rqrđ	2	Rolling submission

Manufacturing Technology (ManTech)

Objective/Goal:

- Aid in achieving reduced acquisition and total ownership costs by developing, maturing, and transitioning key manufacturing technologies/processes for the production and repair of Navy platforms and systems

Performers:

- ManTech Centers of Excellence (COEs)
- Technology Providers
- Industry



**ManTech Provides Needed
Manufacturing Technology to Industry**

Basic Process:

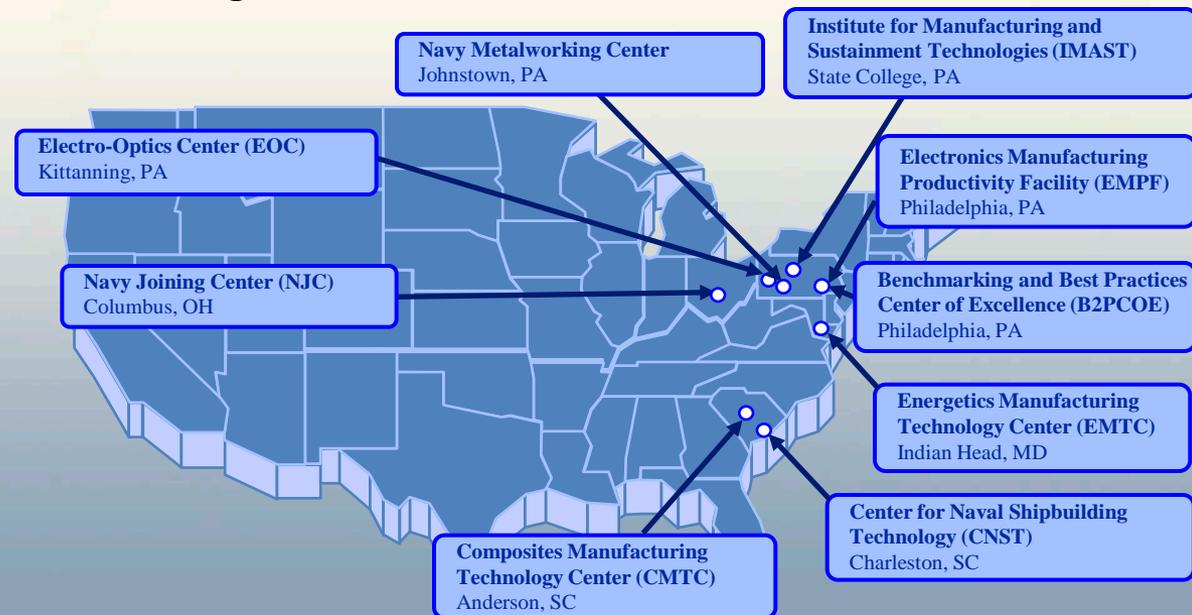
- Primary focus on affordability efforts for: CVN 78 Class, VIRGINIA Class Submarine, Littoral Combat Ship (LCS), and DDG 51
- Secondary focus on Joint Strike Fighter
- Addressing Total Ownership Cost reduction – both acquisition and life-cycle

How to get Involved / Contacts:

- Navy ManTech Program Office
- Centers of Excellence
- www.onr.navy.mil/en/Science-Technology/Directorates/Transition/Manufacturing-ManTech.aspx

Centers of Excellence Execution Agents

- **Navy ManTech is executed through nine Centers of Excellence (COEs):**
 - Execute projects; manage project teams
 - Serve as corporate expertise in technological areas
 - Collaborate with acquisition program offices / industry to identify and resolve mfg issues
 - Develop and demo mfg technology solutions for identified Navy requirements
 - Provide consulting services to Naval industrial activities and industry
 - Facilitate transfer of developed technologies



ManTech Strategy and Approach

- Currently addressing affordability (both acquisition and life-cycle)

Primary Focus			Secondary Focus
 <p><u>PEO (Subs)</u> VIRGINIA</p>	 <p><u>PEO (Ships)</u> LCS DDG 51</p>	 <p><u>PEO (Carriers)</u> CVN 78</p>	 <p><u>JPO (JSF)</u> F-35</p>

- Platform IPTs for portfolio management

- Representation from ONR ManTech, Program Office, and industry ensure close coordination of efforts.

- Affordability Assessments updated semi-annually

- Feb 10 update recently vetted through Program Offices

Program Office	Total ManTech Investment (\$M)	Program Office Cost Share (\$M)	Probable EROM Cost Savings per Hull (\$M)
VIRGINIA Class Submarine	62.2	38.6	32.2
DDG 1000 Destroyer	59.3	0.6	25.4
CVN 78 Class Carrier	65.8	16.4	18.8
Littoral Combat Ship	18.7	0.3	2.0

Technology Transition Making a Difference for VIRGINIA Class

- **Electric Boat Improvement Initiative Awards – internal Electric Boat awards**
 - Each month, Quonset Point management (Directors and their Managers) select / award an improvement initiative -- a cost savings initiative
 - At year end, one of the twelve monthly awards is selected as the Initiative of the Year
- **Two projects shared honors for 2007 Improvement Initiative of the Year**
 - **Laser Image Projection**
 - Active ManTech project
 - **Annulus Shielding**
 - Two ManTech projects laid the groundwork for this work
 - Product Centric Facility Design (CNST) – developed Poly Work Cell at EB
 - Polycan Fabrication Improvements (iMAST) - developed poly cell technology for Portsmouth and Pearl Harbor Naval Shipyards
 - Now receiving direct funding from VCS Program Office (iMAST)

"ManTech sponsorship is making a huge impact here at our QP facility. We can't thank you enough for the tremendous opportunities this program is affording us."

- Electric Boat Quonset Point facility manager -