NDIA S&ET Defense Tech Expo 2014

ONR 03T Affordability Initiatives Division

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9 Apr 2014

ONR Affordability Initiatives …

Manufacturing Technology (ManTech) Program - ***Develops affordable, enabling manufacturing technology for use in DoN weapon system acquisition or repair.***

Technology Insertion Program for Savings (TIPS) - ***Transitions commercial off-the-shelf solutions and late-stage development technologies into DoN acquisition programs to reduce operations and maintenance support costs.***

Technology Transfer (T2) – ***Aids DoN to benefit from the innovations developed by its own network of R&D labs.***

Domestic Preparedness Support Initiative (DPSI) - ***Leverages DoD's technology and logistics capabilities to assist first responders.***

Foreign Comparative Test (FCT) - ***Evaluates foreign technology or COTS equipment and funds operational testing of improved, mature technology to improve warfighter capability, accelerate fielding, and save money.***

Navy ManTech Program
Overview

Mission: Industrial Preparedness

- **Develop enabling manufacturing technology -- new processes and equipment -- for implementation on DoD weapon system production lines**
- **DoD 4200.15 states investments should:**
  - Transition emerging S&T results to acquisition programs
  - Improve industrial capabilities in production, maintenance, repair and industrial base responsiveness
  - Advance manufacturing technology to reduce cost, improve performance, and responsiveness

Budget:

- **Historically approx. $50M**
- **FY14 - $50M**

Execution:

- **Seven (7) Centers of Excellence (COEs)**
  - 6 Contracted, 1 Government

ManTech Investment Strategy
FY14 and Out Affordability Initiatives

- **Addressing affordability (acquisition and life-cycle)**

Affordability Initiatives				
PEO (Subs) *VIRGINIA ORP*	**PEO (LCS)** *LCS*	**PEO (Ships)** *DDG 51 Class*	**PEO (Carriers)** *CVN 78 Class*	**PEO (JSF)** *F-35*

- **Investment Strategy focused on largest DoN acquisition programs as directed by the Chief of Naval Research (CNR)**
  - Platforms for investment determined by:
    - Total acquisition funding
    - Stage in acquisition cycle (remaining years of acquisition)
    - Platform cost reduction goals
    - Cost reduction potential for manufacturing

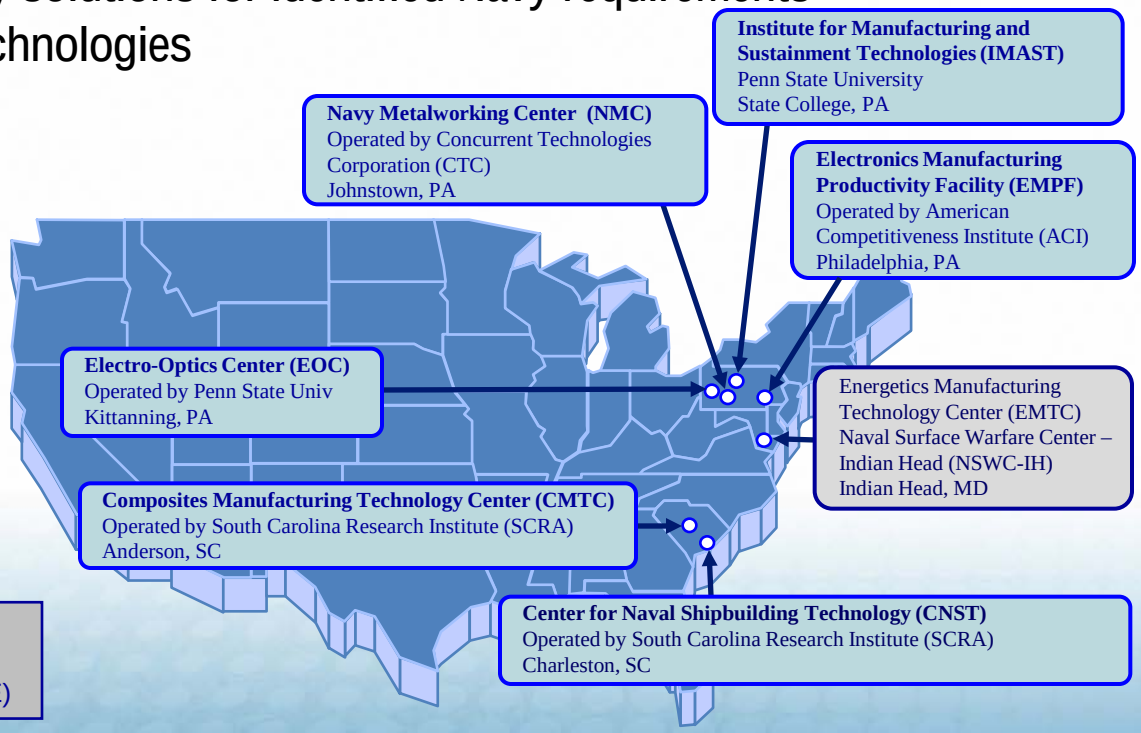
- **Recent Changes**
  - Addition of OHIO Replacement Program (ORP) to VIRGINIA Class Submarine (VCS) to make combined PEO(Subs) Affordability Initiative – FY14 Start

ManTech - making a significant impact on affordability, highlighted by recent implementations and cost savings

Centers of Excellence
Execution Agents

Navy ManTech - executed through 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
- Facilitate transfer of developed technologies



ManTech Affordability Initiatives
FY15 Planning Cycle

1.	ManTech Investment Strategy Guidance	Jul 2013
2.	Acquisition PM/Industry/COE Discussions & Project Generation	Aug – Dec 2013
3.	ManTech Program Office Approval	Dec 2013
4.	Program Office Prioritization and Approval	Jan - Feb 2014
5.	Approved Prioritized Plan per Platform	Mar 2014
6.	Project Proposal Phase	Apr – Jul 2014
7.	Proposal Review / Approval	Jul – Aug 2014
8.	Project Initiation (FY14 Projects)	Oct 2014

*** Industry Involvement

VIRGINIA Class Submarine (VCS) Affordability Initiative

Background / Goal:

- Initiated in FY06 with focus on acquisition cost savings
- Key contributor to VIRGINIA Class cost reduction effort to achieve $2B/sub in FY12

Payoff:

- With portfolio of ~$64M, ManTech, to date, has facilitated –
  - **Acquisition:** $27.75M/hull of realized cost savings to date against projected total of $35.2M/hull
    - 32 projects implemented to date per GD EB (Aug 2013)
  - **Life-Cycle:** For current 15 projects, projected cost avoidance per class of over $100M

Implementation Highlights:

- **Supply Chain** - Structured supply chain review of 40 most costly contractor furnished components. Savings: $2.5M/hull
- **Material Management** - $5.4M/hull
- **Outfitting Process Improvement** - $5.0M/hull

ManTech pays for itself with annual VCS cost savings of $55.5M
($27.75M/hull x 2 hulls/year)

Joint Strike Fighter (JSF)
Affordability Initiative

Background / Goal:

- **JSF Affordability Initiative – official start 2010**
- **Joint coordination with OSD and Air Force ManTech programs**

Payoff:

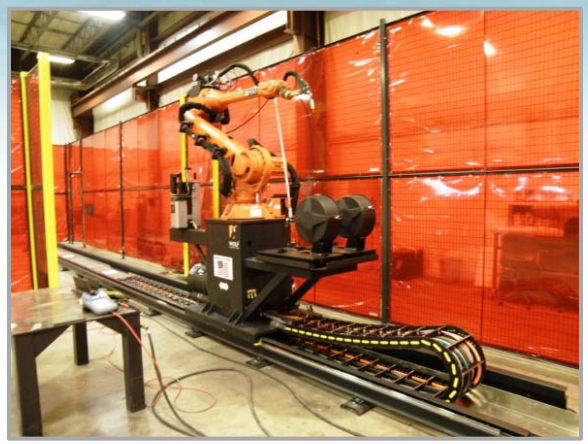
- **Portfolio totals approximately $27M to date**
  - With current portfolio, predicting total DoD savings of approximately $700M (PEO JSF estimate – Oct 2013)

Implementation Highlights:

- **Automated Fiber Placement of BMI Materials -** $100M+ DoD savings on $3M Navy investment
- **F-35 Canopy Thermoforming Automation -** $75-$125M DoD savings on $1.4M Navy investment
- **Controlled Volume Molding (CVM) -** $20M+ DoD savings on <$200K Navy investment

ManTech and Affordability
Project Highlights

- **VCS Robotic Interim Products**
  - Cell to robotically weld assemblies
  - Targeting 30% reduction in weld hours
  - $550K+/hull cost reduction



- **CVN Weapons Elevator Doors**
  - CVN 79 doors -
    - $1.1M cost savings / $22.9M cost avoidance (avoiding late delivery of doors)
  - CVN 80 doors - DFMA balanced weld approach
    - Add'l $1.1M cost savings for CVN 80
    - $4.2M/hull savings for future hulls

Technology Insertion Program for Savings (TIPS) Overview

Objective:

- **Transitions applicable commercial off-the-shelf solutions and late-stage development technologies into DoN acquisition programs to significantly reduce operations and maintenance support costs**
  - $ bridge gap between S&T and Acquisition until Program of Record can fund the completion of the technology insertion

Funding ($K):

	FY14	FY15	FY16	FY17
Pres Bud 14 (Actual)	10,248	12,700	21,150	20,849

Program Criteria:

- **Navy or USMC need**
- **Increases cost efficiency in maintenance, training, or logistics**
  - Must have a positive ROI
- **Requires no more than $2M TIPS funding**
- **Technology can transition in 24 months or less**
- **Technology Maturity (TRL): Starting: ≥6 Ending: ≥8**
- **Technology has program and fiscal support (OPNAV / HQMC P&R)**
- **Solution can be supported by Navy/USMC infrastructure and policy**

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TIPS
FY15 Planning Cycle

1.	Call Letter to SYSCOMS	Aug 2013
2.	SYSCOMS Proposal Development / Internal Reviews	Sep-Nov 2013
3.	1st Down Select (TWG)	Dec 2013
4.	Red Team Reviews	Feb 2014
5.	2nd Down Select (TWG)	Mar 2014
6.	TOG Approval	May 2014
7.	MOAs Signed by PEO / Resource Officer / ONR 03T	May-Jul 2014
8.	Spend Plan Preparation and Submittal	Aug 2014
9.	Project Initiation (FY15 Projects)	Oct 2014

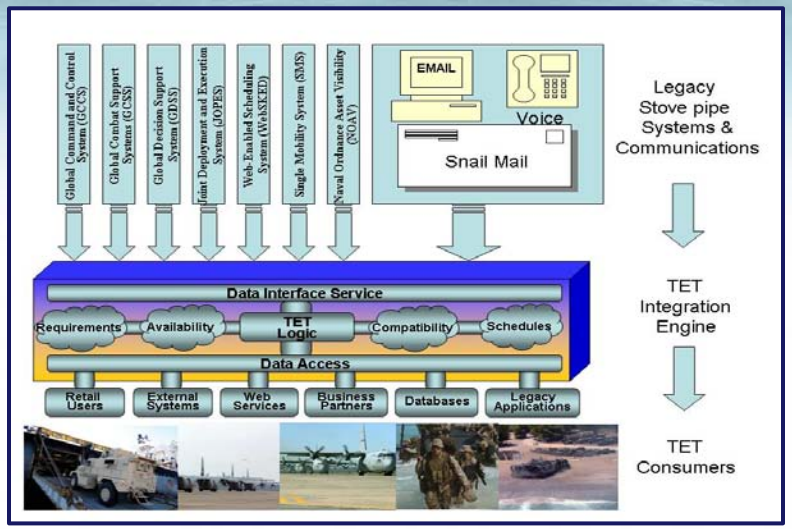
TOG	Technology Oversight Group
TWG	TIPS Working Group

4-6 Expected FY15 New Starts

TIPS Project Highlight
Transportation Exploitation Tool (TET)

Goal:

- Develop software that allows transportation planners to easily find available space among thousands of military and commercial flights and ship movements taking place each day.



Warfighter Impact / Payoff:

- Cost avoidance - $77M over 10 years (on $2M investment)
- Responsive movement of warfighter assets
- Increased utilization of available transportation assets

Implementation:

- Deployed to Financial and Air Clearance transportation System (FACTS)
- Also being supported by U.S. Transportation Command for joint use
- Joint letter of appreciation – May 2013
  - DCNO, Fleet Readiness and Logistics; Deputy Commandant, Mission Support, USCG; Deputy Commandant, Installations and Logistics, USMC

Technology Transfer (T2)
Overview

Mission / Process:

T2:
DoN benefits from the innovations developed by its own network of R&D labs.

Tech Transition:
The technology products are commercialized, produced and then transitioned back to the warfighter.

T2
Office of Research & Technology Applications (ORTA)

Title 15 USC 3710 Requirement

Each Federal laboratory shall establish an Office of Research and Technology Applications

Navy ORTA Responsibility

- **Assess technologies within the labs for potential commercial applications**
- **Stimulate initiatives to develop the transfer of technology to other organizations**
- **Link R&D resources of the lab with potential users**
- **Provide technical assistance & disseminate information on federally owned or originated products, processes, and services having potential application to State & local governments & private industry**
- **Participate in programs to facilitate the transfer of technology for the benefit of the region, State, or local jurisdiction**
- **Negotiate, develop & management of Cooperative Research and Development Agreements and patent license agreements**
- **Provide the ONR and the DoN T2 PM copies of all CRADAs and PLAs**

T2
Transferring Technologies

Joint Modular Intermodal Container NSWC Indian Head, MD

Digital Image Enhancement Naval Undersea Warfare Center, Newport

Trivalent Chromium Processes NAWCAD, Patuxent River, MD

Advanced Use of Force Training System (AUFTS) with Speech Recognition, NAWCTSD

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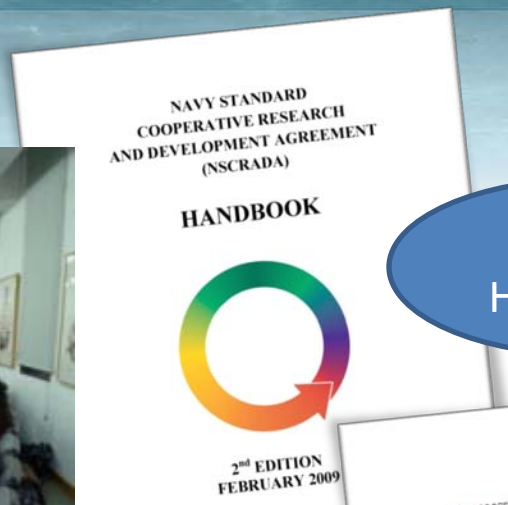
T2
Primary Tools

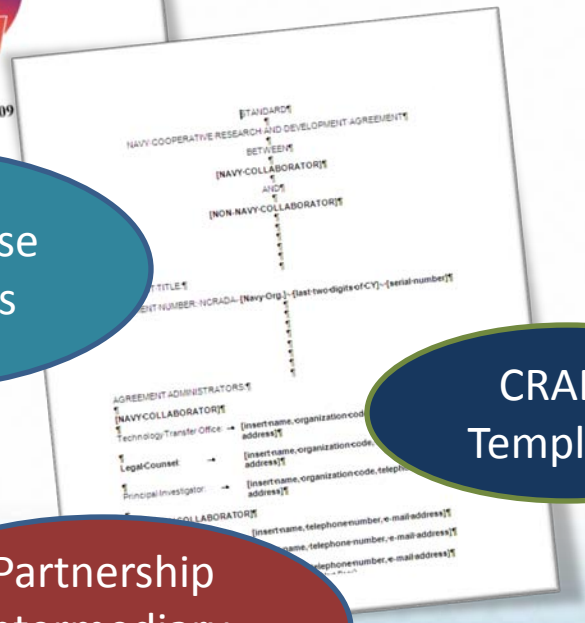
Workshops

CRADA Handbook

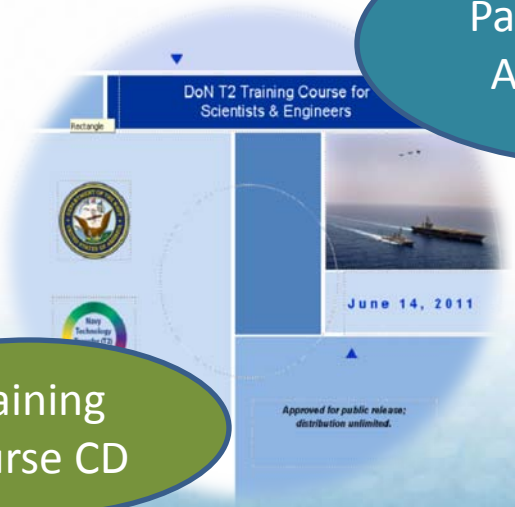


Patent License Agreements

CRADA Templates



Training Course CD

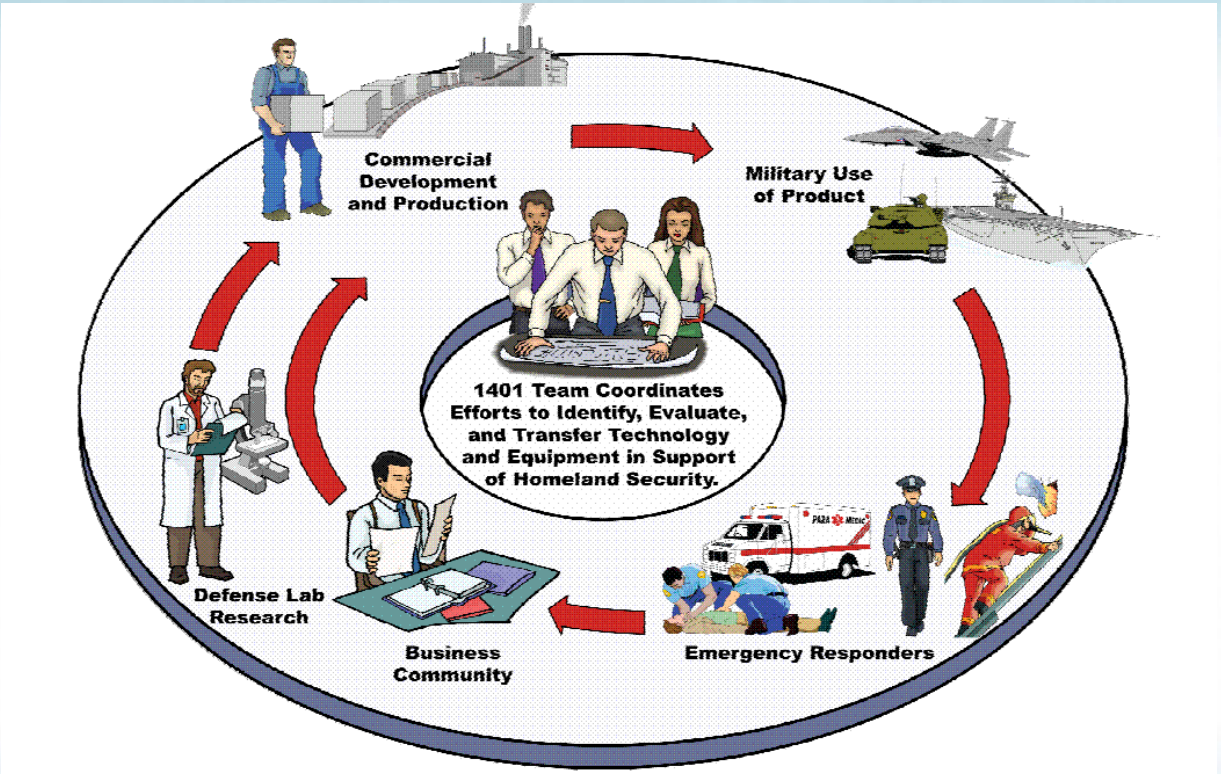


Partnership Intermediary Agreements

DoD Domestic Preparedness Support Initiative (DPSI)

Mission: Leverage DoD's technology and logistics capabilities to assist first responders

DPSI Cycle



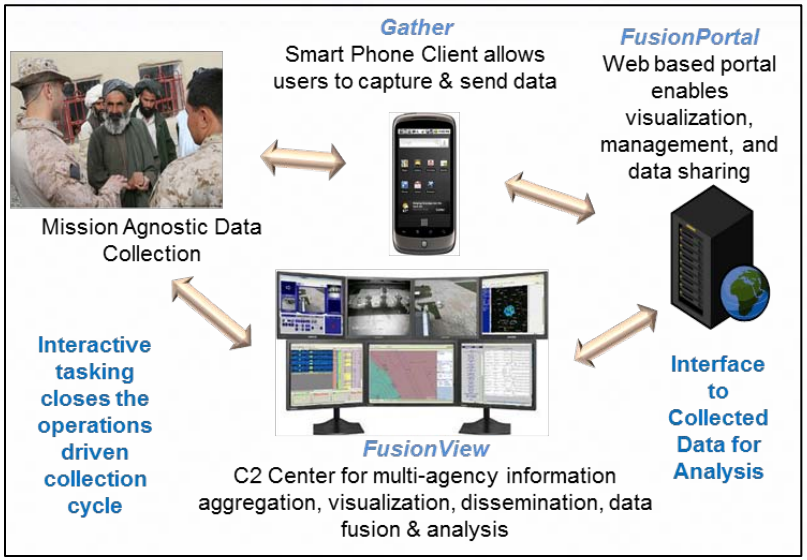
DoD/DoN technology transfer support to First Responders

Funding: Approx. $150K/year

DPSI
Prototype Program

Invest in a Naval technology with homeland security and/or first responder application

- **Develop a prototype OR Exercise/Demonstration Participation**
- **Period of Performance: 6-8 months**
- **Achieve TRL 6+**
- **Award: $35-70K**
- **Next Solicitation Planned: FY15**



Naval Postgraduate School:
Field Information Support Tool (FIST)

Foreign Comparative Testing Program (FCT)

Objective:

- **Evaluate foreign technology or COTS equipment that demonstrates potential to satisfy user requirements and fund operational testing of improved, mature technology to improve warfighter capability, accelerate fielding, and save money.**

Budget ($K):

	FY14	FY15
FCT Budget	15,000	30,000

Criteria:

- **Endorsement from warfighter / user valid requirement**
  - Proposals must address how technology satisfies an operational or capability need and/or improves U.S. warfighter capabilities while enhancing interoperability with coalition partners
- **Follow-on procurement potential**
- **Market investigation (FEDBIZOPS)**
- **Cost and schedule realism**
- **In production**
- **Cost / schedule / performance benefits**
- **Acquisition strategy / contracting authority**
- **Logistics consideration**
- **Past performance**

Foreign Comparative Testing Program (FCT)

Mission: Find, Assess & Field World-Class Products to Enhance Military Capabilities and Provide Long-Term Value

"Here & Now" Solutions – Procure Capabilities

- ✓ Mature Technology - Short Timeline

Support DoD Acquisition (Policy & United States Code Title 10)

- ✓ Promotes Competition

Office of Secretary of Defense Selects & Funds

- ✓ Meets Need, Affordable, Endorsed

Services & USSOCOM Execute

- ✓ Nominate Mature Military or Commercial Products
- ✓ Conduct Assessments & Fielding

FCT
Highlighted Results

Digital Flight Control System EA-6B

Replaced analog flight controls with digital system ($10M Contract BAE Systems, UK)

- **Increased Mean Flying Hours Between Failure from 83 to 3417 (measured)**
- **Operations & Sustainment Avoidance = $68M**

Provides capabilities of 4 separate rounds in one for less cost and logistics burden (USMC & Rheinmetall, Germany)

120mm Multi-Purpose High Explosive Rounds

Results = Value

Lower Life Cycle Cost, Multi-Role, Reduced Manhours, Decreased Logistics Footprint

FCT
FY15 Planning Cycle

Two-path process for FY15

- **Traditional FCT Proposal Process ($15M) TRL 7-9**
- **New Process ($15M additional funds) – TRL 6-7**

Traditional FCT Proposal Process ($15M)

1.	ONR Call for FCT Proposals	Oct 2013
2.	SYSCOMs Draft FCT Proposals	Oct 2013–Mar 2014
3.	FCT Draft Proposal Review Board	2-3 Apr 2014
4.	Finalize SYSCOM Prioritized Proposal Packages	4-25 Apr 2014
5.	Navy/MC Prioritization by Joint Review Board	11 Apr- 27 May 2014
6.	SYSCOMs Submit Final Proposals to ONR	16 May 2014
7.	ONR Submits Proposals to OSD CTO	1 Jun 2014

New Process ($15M additional funds)

1.	OSD Defining Process	Apr 2014
3.	DoN concept Review / OSD Review	Jun-Aug 2014
4.	OSD Selection	1 Sep 2014
5.	Full Proposal Prep and Submission	Sep 2014
6.	Contracts Awarded	Oct 2014 – Jun 2015

ONR Contact Information

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