



NPS Acquisition Research Symposium



Application of Set-Based Decision Methods to Accelerate Acquisition through Tactics and Technology Exploration and Experimentation (TnTE2)

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Why?

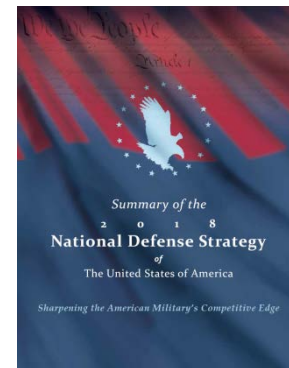


"Deliver performance at the speed of relevance. Success no longer goes to the country that develops a new technology first, but rather to the one that better integrates it and adapts its way of fighting."

Ref: Summary of the 2018 National Defense Strategy of the United States of America.

NDS Implementation requires integrated and focused teams of Operators, Technologists, and Acquisition Professionals

- TnTE2 method integrates Operators and Technologists
- New Accelerated Acquisition authorities from NDAA 16/17



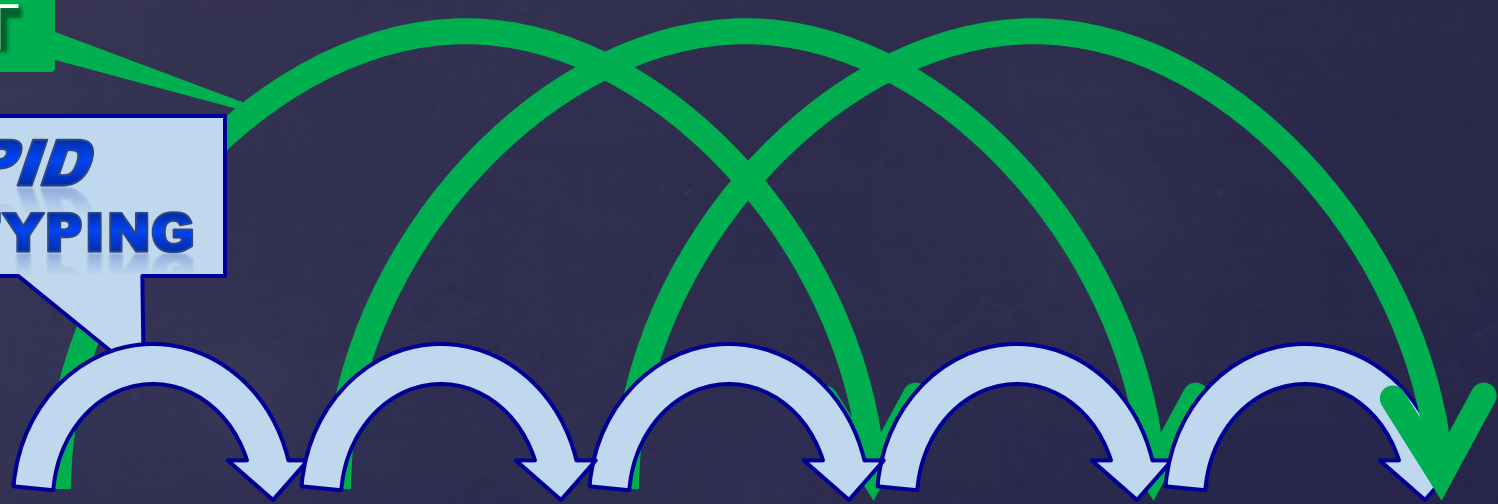
TnTE2 and new Acquisition Authorities enable delivery of performance at the speed of relevance



Quick Wins, Throw Deep

S&T

**RAPID
PROTOTYPING**



- Accelerated Acquisition Authorities
- Flexible Funding Constructs
- Set Based Design Methods
- Live, Virtual, Constructive Environments
- Strategic Planning
- NR&DE Facilities and Resources

- Autonomy and Unmanned Systems
- CYBER, Big Data Analysis, Advanced Computing
- Advanced Communications and Connectivity, Advanced Sensing
- Advanced Power Systems, Directed Energy, Railgun, High Velocity Projectiles
- Micro/Nano Satellite Technology, Nanotechnology and Meta Materials, Synthetic Biology



Alternative Pathways and Authorities

Current Acquisition and Sustainment

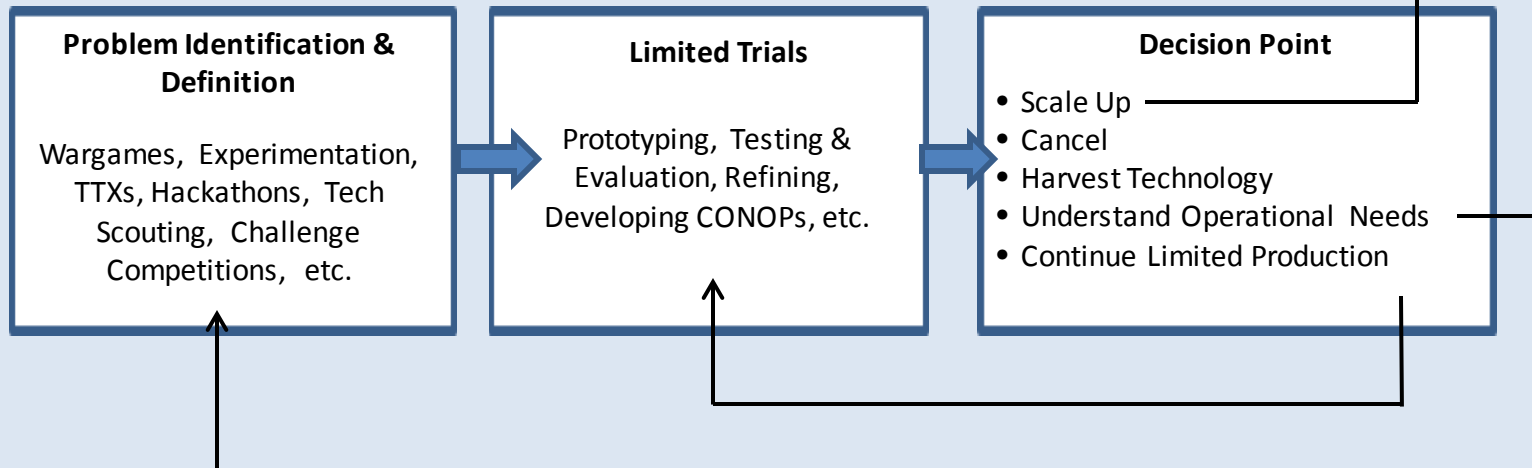


A

B

C

Alternate Pathway(s)



Rapid Acquisition Authority (RAA) Determination

**FY16 NDAA Section 804
Middle Tier Acquisitions
Rapid Prototyping – Rapid Fielding**

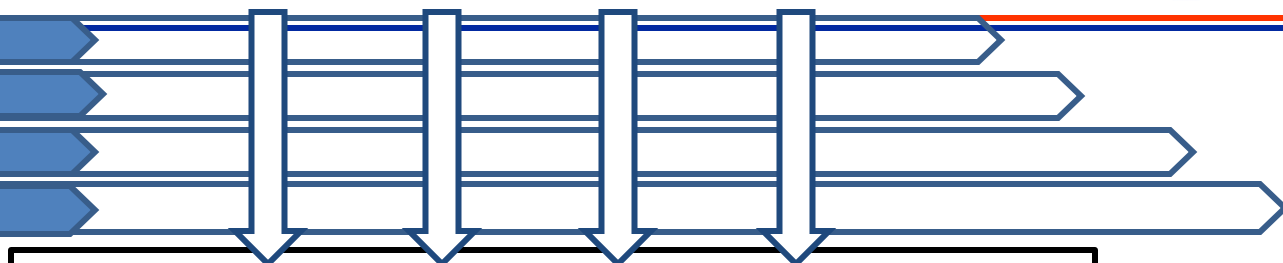
**FY17 NDAA Section 806
Acquisition Agility
MOSA – Component Prototyping**



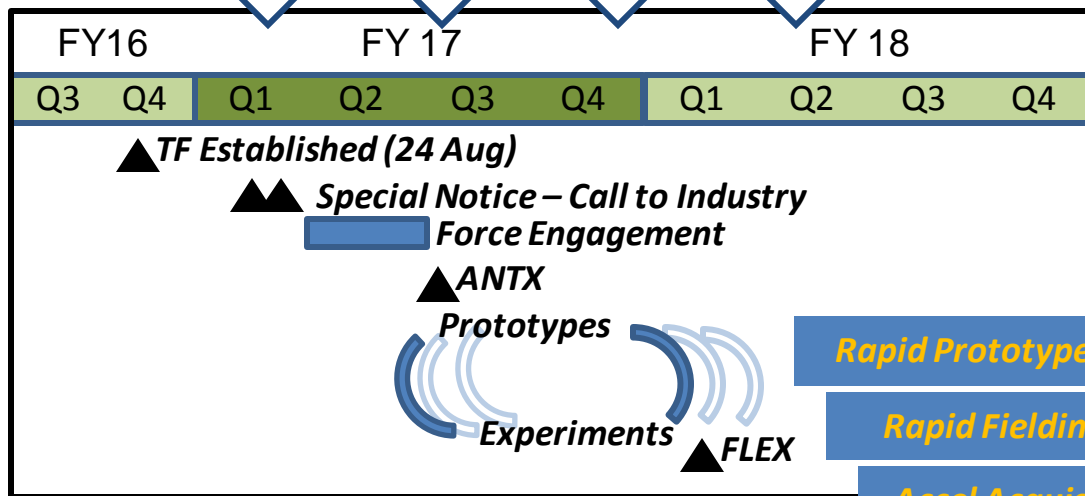
Ship to Shore Maneuver Exploration and Experimentation (S2ME2) Task Force Strategy

Warfighting Concept/Need

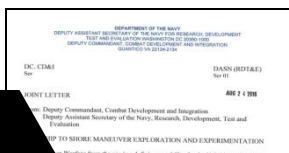
Naval R&D
Industry R&D
219 Investments
Commercial Tech



★★★★
★★★★
Three-Star Initiated Task Force



Warfighting Need

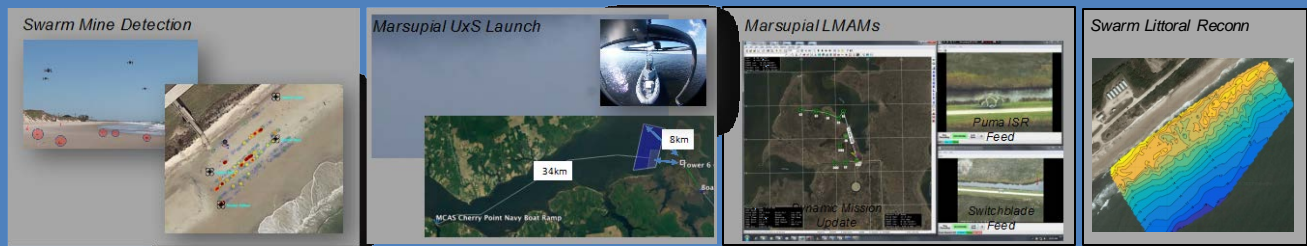


S2ME2 Task Force established by DASN(RDT&E) and DC CD&I 24 AUG 2016

Advanced Naval Technology Exercise (ANTX) – Apr 17



Exercise Bold Alligator Oct 17: Autonomous Systems and Robotic Swarming for Amphibious Operations





TnTE2 Method Demonstrates Speed, Scale, and Rigor



- TnTE2 methods proven through S2ME2 and U5G Task Forces (circa 2017 and ongoing)
 - Task Force Established Time =0
 - Capability Based Framework + 3 months
(Prioritized 50+ Inc of Capability)
 - ANTX (100s of tactics/tech pairings) + 3 months
 - Oct 2017 Bold Alligator and Dawn Blitz + 5 months
(Prioritized 10s of tactics/tech pairings)
 - Rapid Prototyping Integrated Demonstrations + 12-18 months

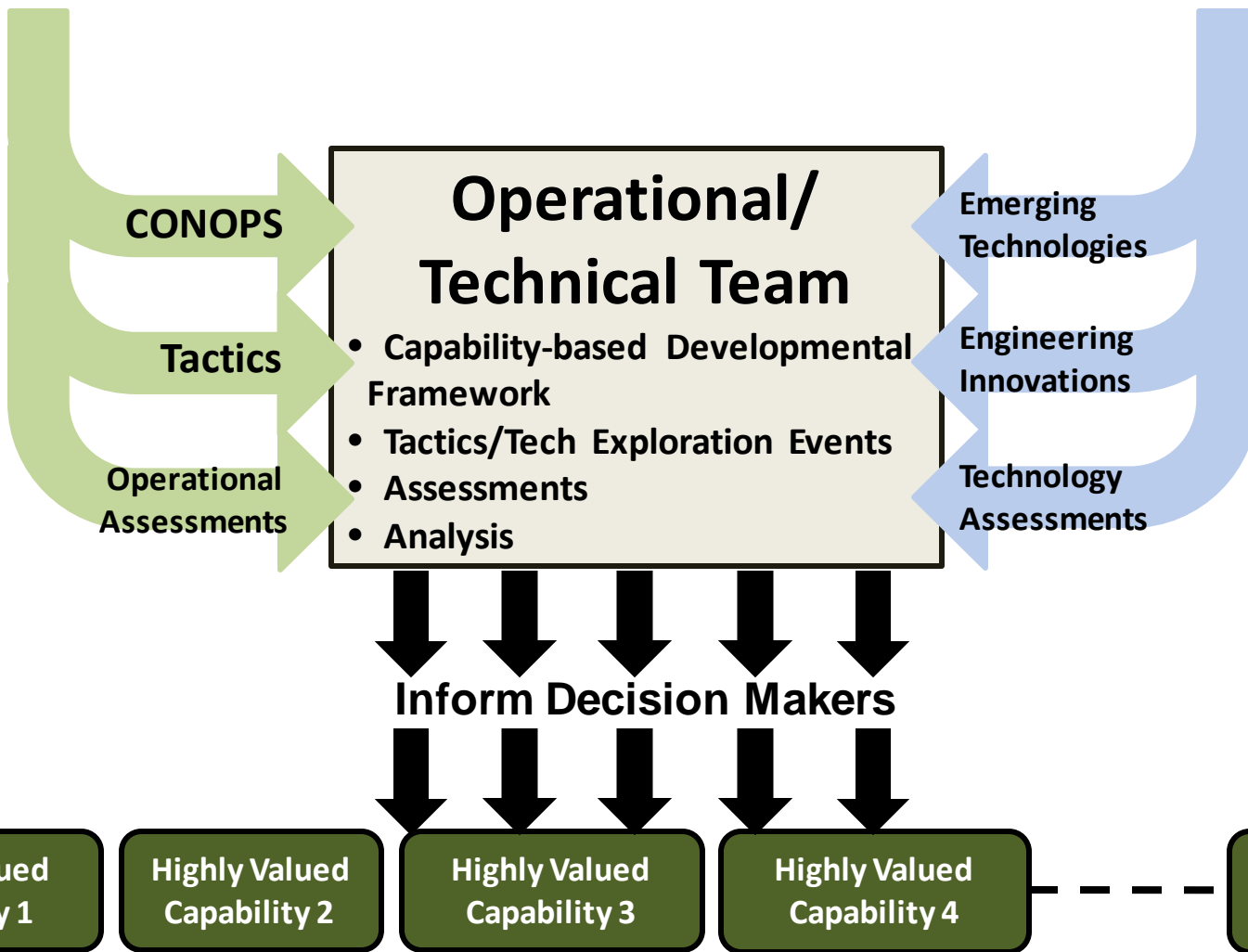
<https://www.dvidshub.net/video/522656/ssc-tvs-s2me2-recap>



Task Force Responsibilities

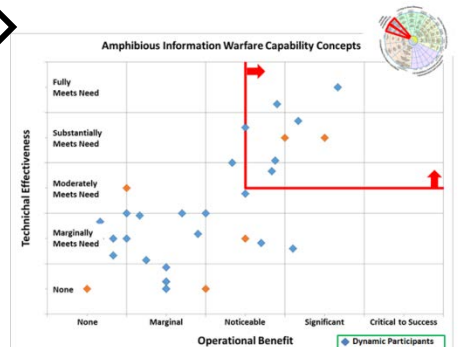
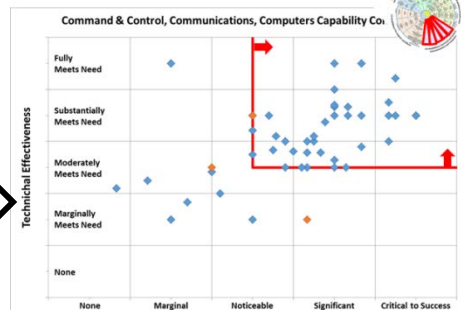
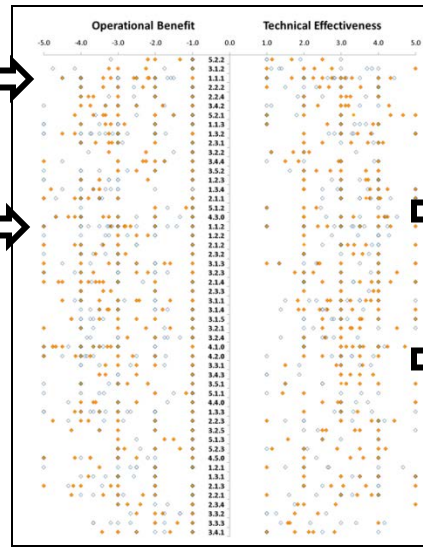
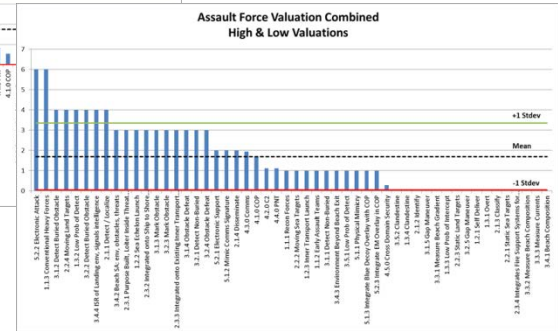
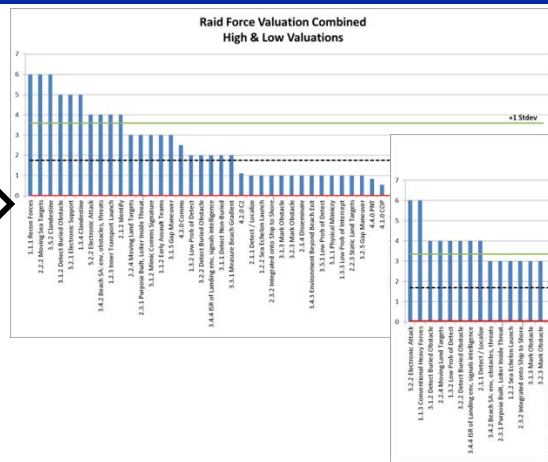
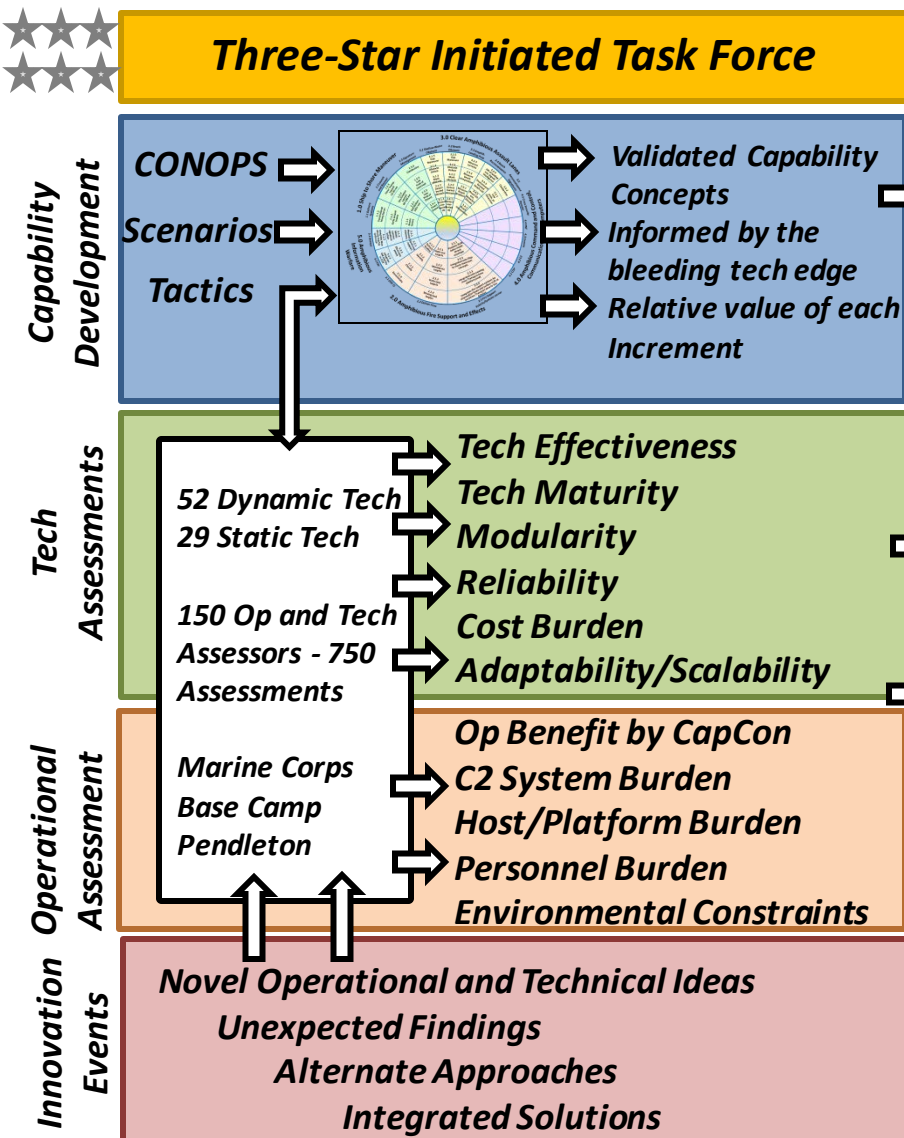
Operational Team Roles

NR&DE Team Roles





Tactics and Technology Exploration and Experimentation (TnTE2) Method





ANTX Benchmarks



- **Informing emerging operational CONOPs**
 - Prioritized key capabilities for 21st Century Ship to Shore Maneuver
- **Leveraging emerging technologies/ innovations**
 - 131 submissions (52 dynamic and 29 static demonstrations at ANTX)
- **Fostering Innovation**
 - 48 organizations (government R&D, academia, industry)
 - 18 new CRADAs signed (2 non-traditional DoD contractors)
 - 10 Fleet/Force Organizations (I MEF, 1st Recon Bn, 1st MAR DIV, SOI-West, 1st LAR, C3F, ESG 3, NGB-1, ACU1, ACU5)
- **Technical and Operational assessments**
 - Identified most promising technologies based upon 760 technical and operational assessments
- **Participants**
 - 1050 personnel (400 participants, 50 Exercise Control, 150 assessors, 450 visitors (24 USN/USMC reservists, 30 Flag/SES))
- **Insights and recommendations to RPED, S&T and other investments**
 - Directly initiated more than 30 follow-on rapid prototypes
 - 17 promising and mature technologies demonstrated successfully during Dawn Blitz (Oct 2017) and Bold Alligator (Oct 2017)

3 months CONOPS dev and planning → 3 months Exercise planning → 1 month Execution



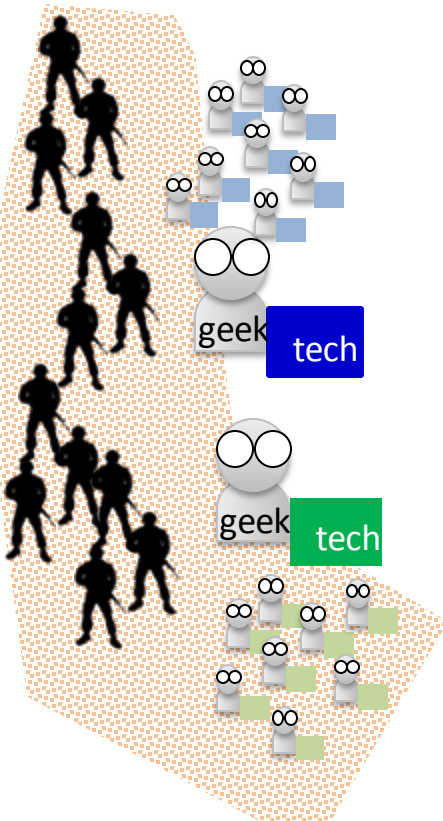
TnTE2 Continuum

Exploration

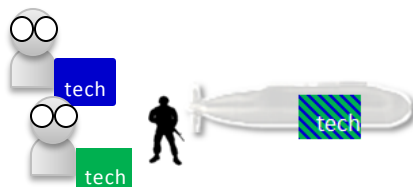
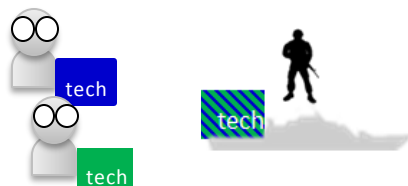
Rapid Prototyping

Fleet Experimentation

Rapid Fielding



Capability based tactics/
technology demos in field
representative environments



Highly-valued and mature
tactics/tech are ruggedized and
integrated based user inputs

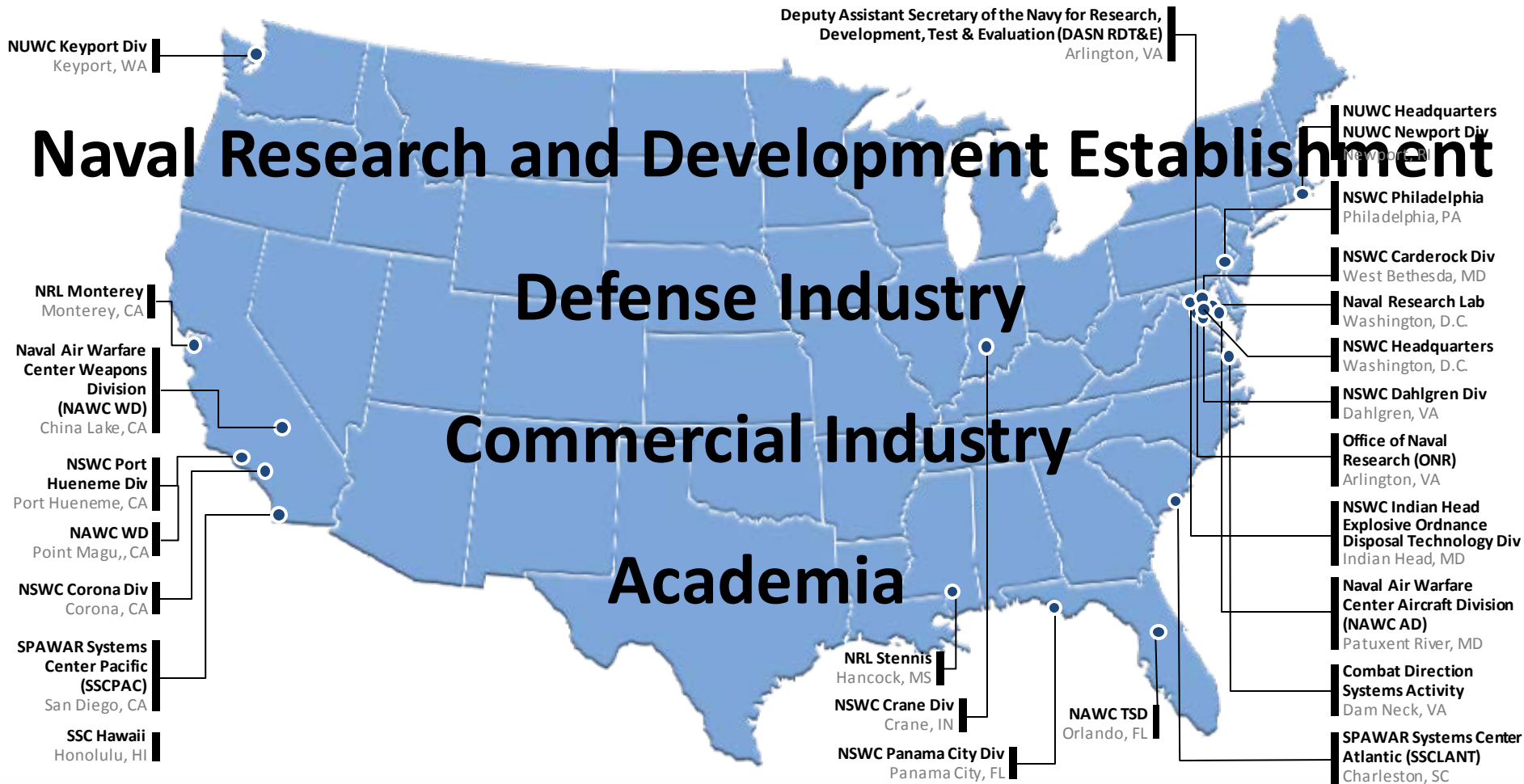


Tactics/tech are integrated
for Fleet experimentation
and limited user evaluations



Tactics/tech fielded for
extended user evals

Maintaining the Edge



Capitalizing on the Best and Brightest our Nation has to Offer

A wide-angle photograph of a vast, dark blue ocean under a bright blue sky filled with wispy white clouds. The horizon line is clearly visible, separating the water from the sky. The overall mood is serene and open.

QUESTIONS?