# Information Dominance
# Science and Technology Cross Functional
# Team & Technology Objectives

## NDIA C4I Industry Day
## 29 October 2014

**Dr. Stephen Russell**

SPAWAR 7.0 Director, Science & Technology;

Chief Technology Officer

*"...it is necessary to set forth our priorities as defined by technologic development and investment so that all Information Dominance stakeholders know where we are headed...."*

**2014 U.S. Navy Information Dominance Science and Technology Objectives**

# Agenda

▼ Information Dominance (ID) S&T Cross Functional Team (CFT)

▼ ID S&T CFT First Objective

▼ U.S. Navy ID S&T Objectives (STOs) Intent and Vision

▼ Technology Focus Areas

▼ ID Core Capabilities and ID STOs Alignment

# ID S&T Cross Functional Team
## (as of Nov 2014)

**N2/N6F4**
- 🏺 **Johnson (TDY to TFCA)**
- 🔺 **Vaughan**

**SPAWAR CTO**
- 🏺 **Russell**
- 🔺 **Parker**
- 🔺 **Perrault**

**Legend:**
- ⭐ **Flag**
- 🏺 **SES**
- 🔺 **Action Officer**

**FLTCYBERCOM**
- 🏺 **Cooley**
- 🔺 **Greene**

**SPAWAR 5.0**
- 🏺 **Scurry**
- 🔺 **Evans**
- 🔺 **Renteria**

**USFF**
- 🏺 **Cade**
- 🔺 **Starks**

**ONR**
- 🏺 **Masters**
- 🔺 **Hand**

**NAVYCYBERFOR**
- ⭐⭐ **Kohler**
- 🔺 **Piston**

**PACFLT**
- 🏺 **Stephenson**
- 🔺 **Jones**

**NAVAIR**
- 🏺 **Sheehy**
- 🔺 **Wolt**

**NUWC**
- ⭐ **Jabaley**
- 🏺 **Corriveau**
- 🔺 **Campbell**

**NSWC**
- ⭐ **Selby**
- 🔺 **Campfield**

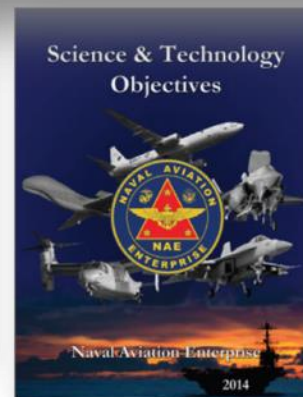## A Partnership of Key ID Stakeholders

*Develop U.S. Navy ID S&T Objectives (STOs) at Enterprise Level*
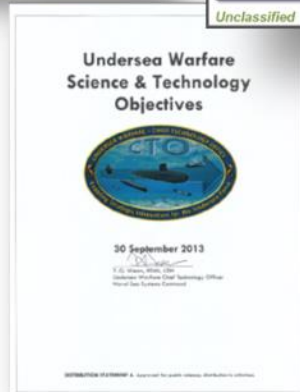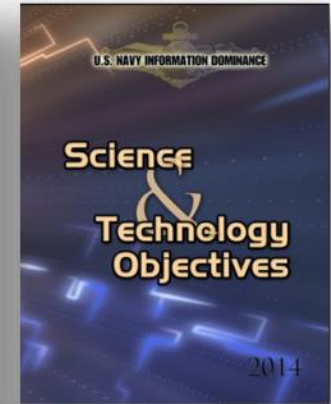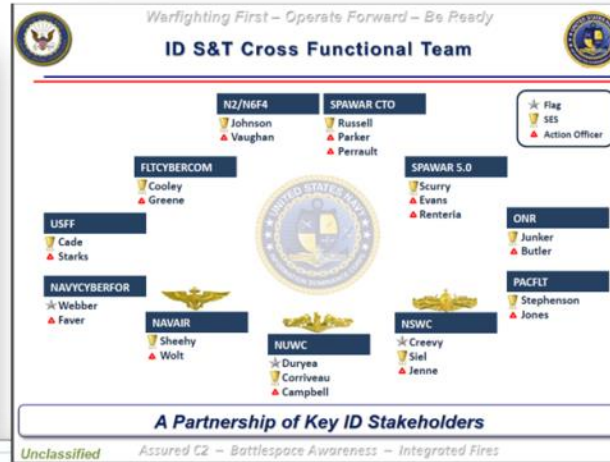


*Undersea*

*Air*

*Surface*

*Provide a basis for harmonizing ID S&T Objectives with the other Navy Enterprises to avoid duplicative development*

# U.S. Navy ID S&T Objectives (STOs)
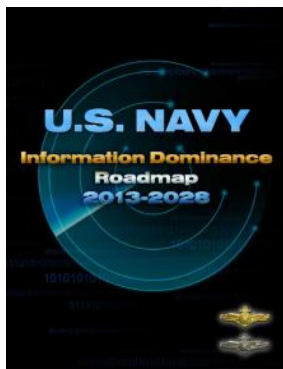
▼ **INTENT**

*This document is intended to articulate the desired operational capabilities and related technologies necessary to fully realize Information Dominance warfighting effects. This document is also intended to be used as a vehicle for engaging the Naval Research Enterprise (NRE), industry and academia in order to align efforts and optimize information dominance-related technology investments.*
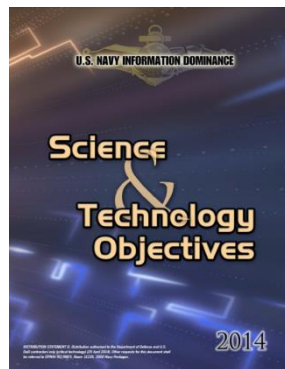
▼ **VISION**

*A U.S. Navy fully optimized for Information-Age operations; a force capable of technologic agility and adaptation that delivers capability apace or ahead of any adversary.*

# Information Dominance (ID) S&T Products - Gap Hierarchy



PEO C4I S&T Acquisition Gaps

SSC S&T Thrust Areas

OPNAV N2/N6 - ID Roadmap

USN ID S&T Objectives (STOs)

*Influence S&T investments within the Navy and provide a basis for tracking progress towards closing gaps*
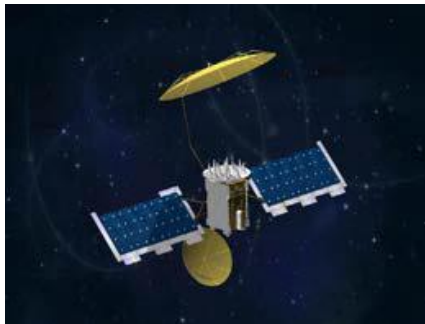
**Sending a demand signal to Industry to uncover available technology, track promising developments, and influence investment**

8

# 11 ID Technology Focus Areas

- *Information Transport and Infrastructure - ITI*
- *Information Security and Assurance - ISA*
- *Advanced Sensing - AVS*
- *Data Integration and Decision Support - DDS*
- *Enhanced Targeting and Fire Control - ETF*
- *Electromagnetic Spectrum Operations - ESO*
- *Non-Kinetic Fires - NKO*
- *Positioning, Navigation and Timing - PNT*
- *Autonomy - ATY*
- *Human-Systems Interface - HSI*
- *Environmental Battlespace Awareness- EBA*



**U.S. NAVY INFORMATION DOMINANCE**
**Science & Technology Objectives**
**2014**
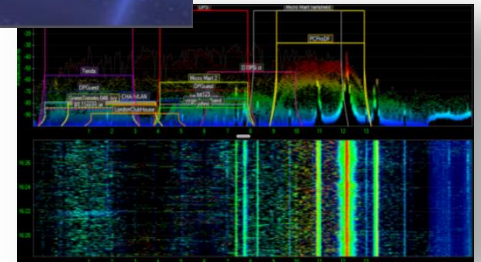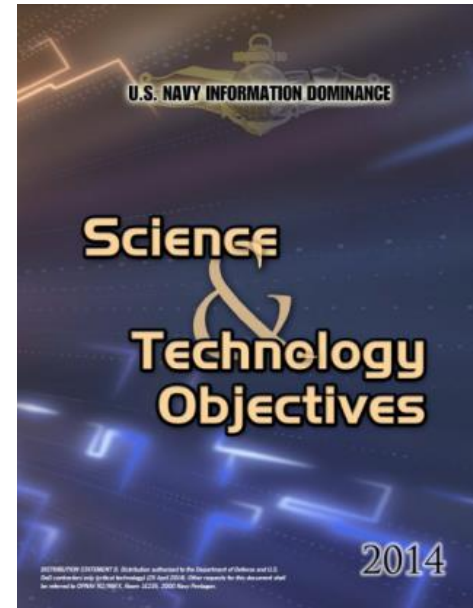
*Targeting ID "hard problems" via Technology;*
*Each Technology Focus Area contain 3 – 5 STOs for a total of 47*

**Assured C2**

Command Forces in any Environment

Assess Fires & Own Force Status

Coordinate Fires

**Battlespace Awareness**

Fuse Essential Combat Info

Enable Informed Decisive Action

Understand Operational Environment

**Integrated Fires**

Enhance Blue Fires

Disrupt, Deny, Defeat Red Fires

Information Dominance Roadmap Reference
(with Roadmap Major Section References)

# ID STO Application

- *Information Transport and Infrastructure - ITI*
- *Information Security and Assurance – ISA* ⭐
  - *ID-ISA-STO-01: Assured Access and Transparent Identification and Authentication across the Network*
- *Advanced Sensing - AVS*
- *Data Integration and Decision Support - DDS*
- *Enhanced Targeting and Fire Control - ETF*
- *Electromagnetic Spectrum Operations - ESO*
- *Non-Kinetic Fires - NKO*
- *Positioning, Navigation and Timing - PNT*
- *Autonomy - ATY*
- *Human-Systems Interface - HSI*
- *Environmental Battlespace Awareness- EBA*

**AC2**

**BA**          **IF**
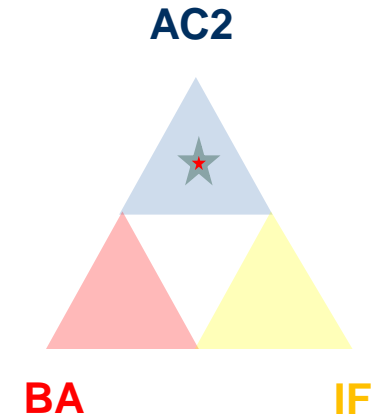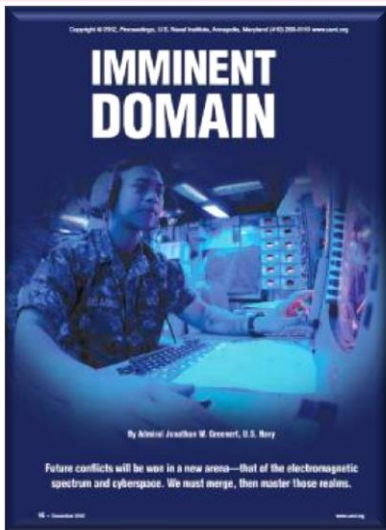
# ID Core Capabilities and ID STOs Alignment

1. ITI-STO-01
2. ITI-STO-02
3. ITI-STO-03
4. ISA-STO-01 ★
5. ISA-STO-02
6. ISA-STO-03
7. ISA-STO-04
8. ISA-STO-05
9. ISA-STO-06
10. AVS-STO-01
11. AVS-STO-02
12. DDS-STO-01
13. DDS-STO-02
14. DDS-STO-03
15. DDS-STO-04
16. DDS-STO-05
17. ETF-STO-01
18. ETF-STO-02
19. ETF-STO-03
20. ESO-STO-01
21. ESO-STO-02
22. ESO-STO-03
23. NKF-STO-01
24. NKF-STO-02
25. NKF-STO-03
26. NKF-STO-04
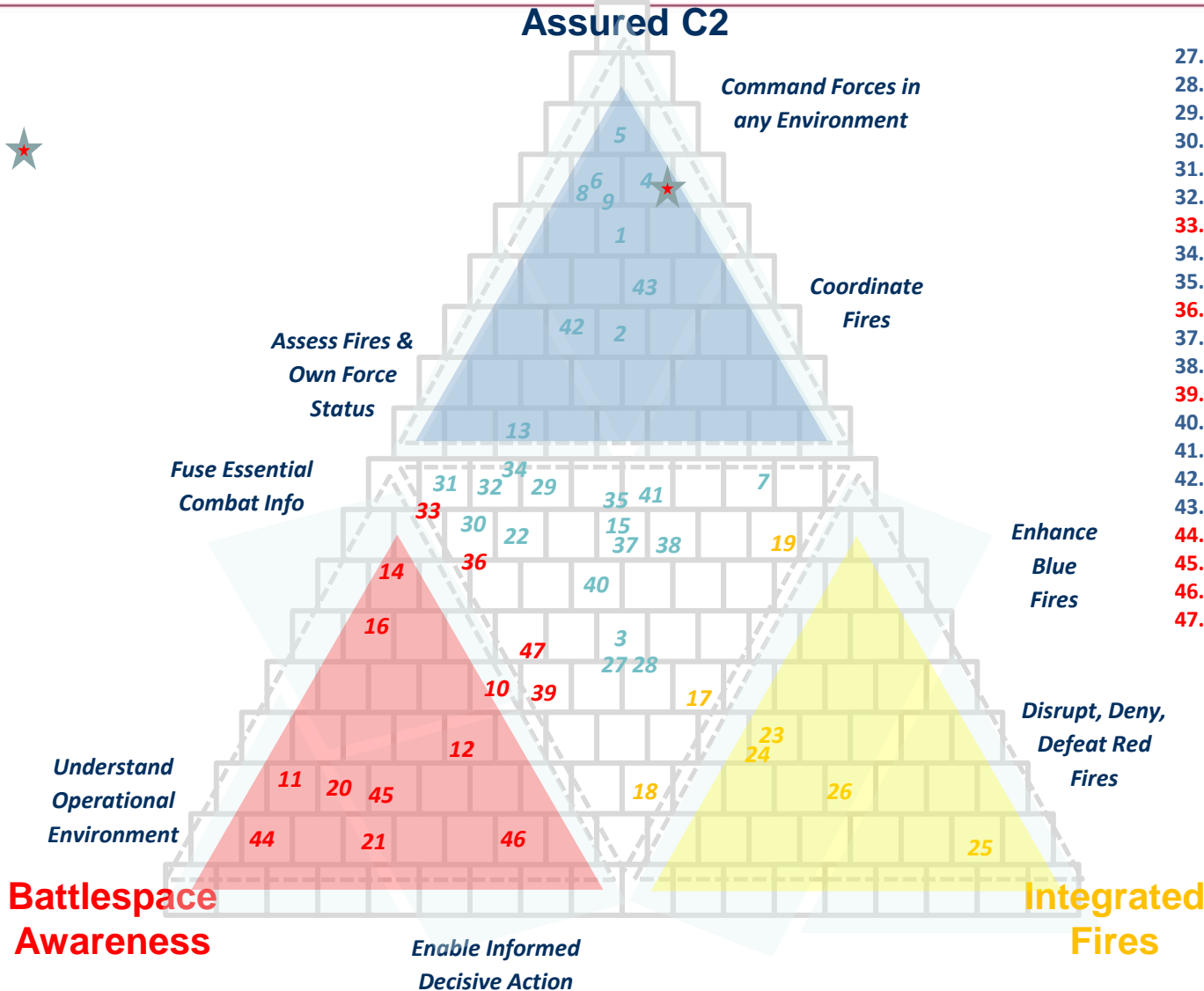
27. PNT-STO-01
28. PNT-STO-02
29. PNT-STO-03
30. PNT-STO-04
31. PNT-STO-05
32. ATY-STO-01
33. ATY-STO-02
34. ATY-STO-03
35. ATY-STO-04
36. ATY-STO-05
37. HSI-STO-01
38. HSI-STO-02
39. HSI-STO-03
40. HSI-STO-04
41. HSI-STO-05
42. HSI-STO-06
43. HSI-STO-07
44. EBA-STO-01
45. EBA-STO-02
46. EBA-STO-03
47. EBA-STO-04



Assured C2

Command Forces in any Environment

Coordinate Fires

Enhance Blue Fires

Disrupt, Deny, Defeat Red Fires

Assess Fires & Own Force Status

Fuse Essential Combat Info

Understand Operational Environment

Enable Informed Decisive Action

**Battlespace Awareness**

**Integrated Fires**

# U.S. Navy - Agile and Dominant in the Information Age



*"Future conflicts will be won in a new arena—that of the electromagnetic spectrum and cyberspace. We must merge, then master those realms."*

*Admiral Jonathan W. Greenert, U.S. Navy*

**We in the Information Dominance stakeholder community will work together to operationalize these objectives and grow U.S. Navy advantage in every warfighting and operational domain.**

*2014 U.S. Navy Information Dominance Science and Technology Objectives*

***Defense Innovation Marketplace:***
***http://www.defenseinnovationmarketplace.mil/industryresources.html***