



**Program Executive Office
Command, Control, Communications,
Computers and Intelligence (PEO C4I)**

Gold Coast Conference *Small Businesses & PEO C4I*

**23 August 2011
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Executive Director, PEO C4I**

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Environmental Landscape

- **Navy C4I Acquisition Demands:**

- Fiscal Constraints
- Joint & Coalition Interoperability
- Faster Delivery



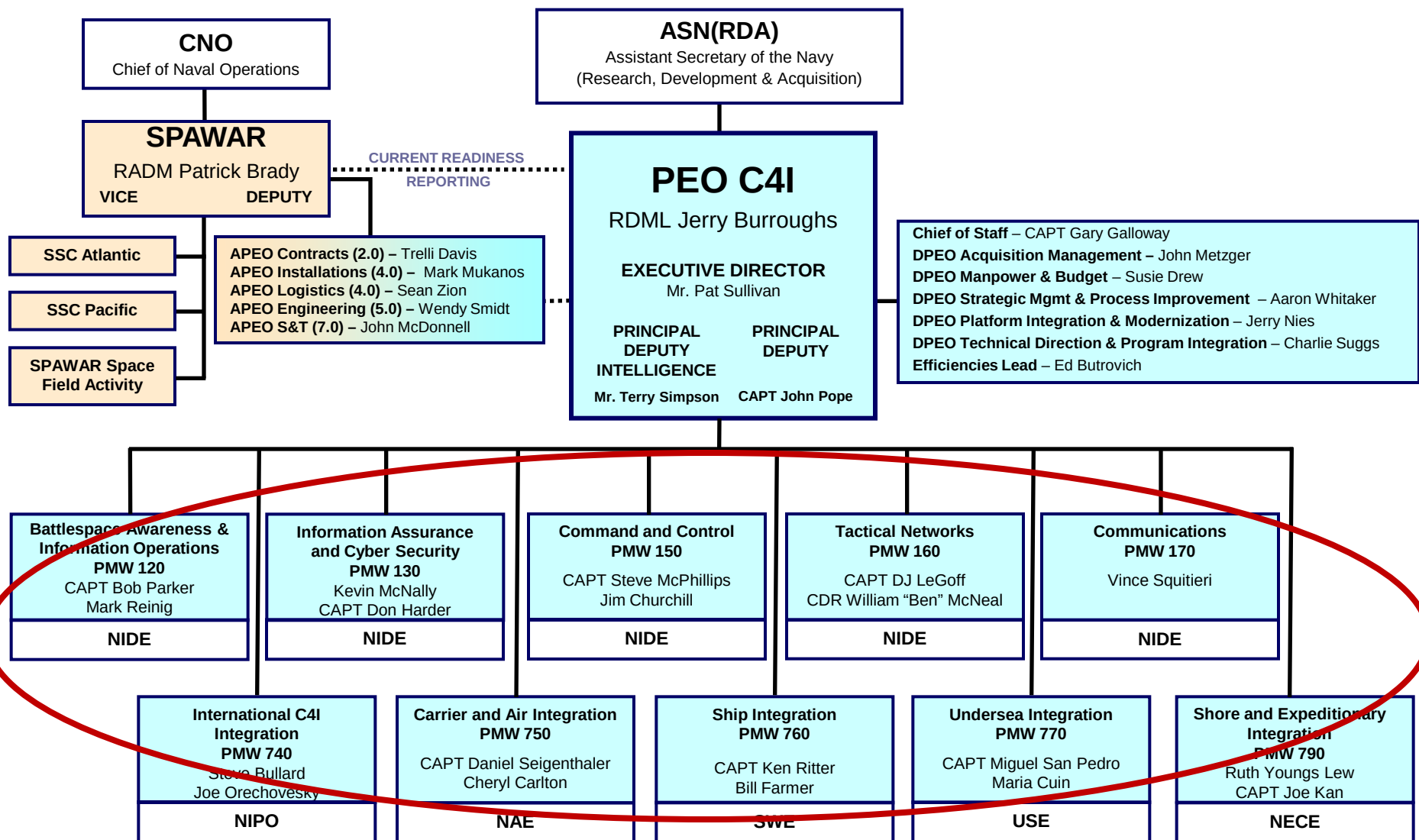
- **Realized Small Business Advantages:**

- Increase market competition
- Greater focus on customer relations
- Streamlined scheduling and coordination process





PEO C4I Organizational Structure





PEO C4I Key Initiatives

- Reduce variance in C4I baselines across platforms
- Establish process to support rapid introduction of Cyber Warfare capabilities to the Fleet
- Streamline acquisition processes to rapidly field relevant capabilities
- Develop processes to deliver C4I capability via an application store

Minimize total ownership cost, rapidly field relevant capability



Reduce Variance in C4I Baselines

Cruiser Class C4I System Variants Today



Networks		Cipher Text & MTJ			Bandwidth						Navigation	ISR/IO/ METOC	
ISNS/ CANES	GCCS-M	ADNS*	CDLMS	NGC2P	ADNS*	CRYPTO	Commercial SATCOM	GBS	NMT	SHF	NAVSSI	JTT	ISR
					EHF TIP								

**ISNS/
CANES**
(PMW 160)
ATM (7)
A(V)9 (8)
C(V)9 (4)
D(V)9 (2)
(V)10 (1)
CANES (0)

NGC2P
M4 (7)
M5 (15)

CRYPTO
(PMW 130)
KIV-7M (22)

NMT (0)
(PMW 170)

NAVSSI
(PMW 170)
Block 2 (1)
Block 4.2.0 (10)
Block 4.2.1 (11)

JTT
(PMW 120)
CTT-H3 (1)
JTT-M (7)
Neither (14)

CDLMS (PMW 150)
C2P S/W (2)
3.4 (3)
3.6 (17)

Commercial SATCOM
(PMW 170)
INMARSAT B (22)
CBSP (0)

GCCS
(PMW 150)
3.X (9)
4.X (13)

TIP (PMW 170)
CT (1)
NECC (21)

GBS IP (2)
(PMW 170)

EHF
(PMW 170)
FOT (13)
MDR (9)

ISR (PMW 120)
SSEE (18)
COBLU (4)

ADNS
(PMW 160) II (8); IIB (13); III (1)

SHF (PMW 170)
EBEM (22)

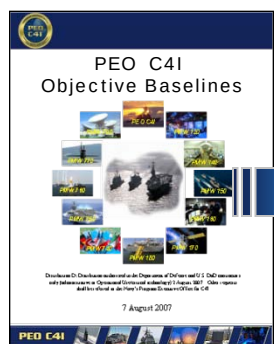
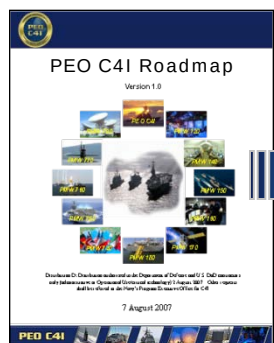
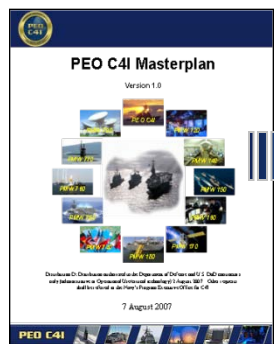
18 Unique C4I Configurations on 22 CGs



Reduce Variance in C4I Baselines

Platform CM C4I Builds and Baselines

- 1) Integrated, Tested and Certified
- 2) Aligned to Reduce Variance



OPNAV NOTE 3090

OPNAVINST 2300

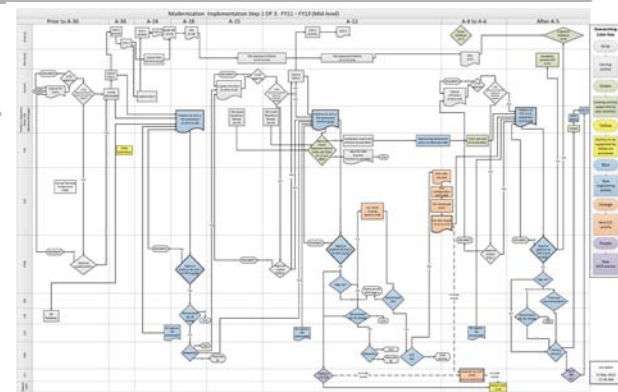
Integrated C4I Roadmap

Lead PMW	Program / Project	System Name	Platform						FY10-FY11	FY12-FY13	FY14-15
			Force	Sub	Shore	Air	Sea				
160	CANES	CANES	●	●	●	●					
160	ISNS	ISNS	●	●	●	●					
160	ISNS	ISNS - Inc 0	●	●	●	●					
160	ISNS	ISNS - Inc 1	●	●	●	●					
160	ISNS	ISNS - Inc 1 MOD 1	●	●	●	●					
160	ISNS	ISNS - Inc 1 MOD 4	●	●	●	●					
160	EMIO	VRBS		●	●	●	●				
160	SCI NETWORKS	SCI NETWORKS - AFLOAT	●	●	●	●	●				
160	SCI NETWORKS	SCI NETWORKS - EA	●	●	●	●	●				
160	SCI NETWORKS	SCI NETWORKS - SUBMARINE		●	●	●	●				
160	CENTRIXS	CENTRIXS	●	●	●	●	●				

C4I Capability Builds

- Cipher Text & Multicast – TADIL-J
- Networks #1
- Networks #2
- Navigation Modernization
- Bandwidth
- Enhanced Bandwidth
- ROW C2
- ISR / IO / METOC
- Tactical Comms

A-36 Platform Baseline ECR Process



Objective Platform Baselines



Navy Initiatives with Small Business

- DoN's goal is to provide 18.9% of contracts to small business
 - Sparks innovation
 - Stimulates job creation
 - Creates a competitive environment
- Small business entry points
 - Broad Agency Announcements (BAA)
 - Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR)





Current Areas of Small Business Engagement at PEO C4I

- Knowledge Management Support
 - Program Management
 - Financial Management
 - Acquisition Management
 - Administration
 - Integrated Logistics Support (ILS)
- Prime Mission Products/Services
 - Hardware
 - Systems Engineering Technical Assistance (SETA)
 - FMS-related production and testing
 - Repairs
 - Installation and Integration
 - Reseller





Knowledge Management Support

Small Business Success Story



- FY11 awarded
 - \$70M Small Business SETA contract
 - \$14.2M Small Business ILS contract



Acquisition Requirements

Navy Technical Reference Model

User Groups



COI



COI



COI



COI



COI

Application Services

Support Systems

Aviation Systems

ISR

Command & Control

Ship Control

Combat Systems

Platform Training

Common Services

Basic Services

SOA Core Services
(Tactical Edge)

Enterprise Services

Common Computing Environment

Hosting Environment

Computing Hardware

Communications & Networks

WANS

SATCOM

LANs

Wireless

Network/ Circuit Mgmt

Security

Quality of Service (QoS)
Information Assurance (IA)
Data Architecture



-  DEPARTMENT OF THE NAVY
FEDERAL SECURITY SERVICE OFFICE CHIEFS, CAPTAINS, COMMANDERS,
COMMODORES AND MAJOR COMMANDERS
NAVJAGS IN ACTIVE FLEET
- ASST
SEC DEF C/OPS
JUN 19 1978
- FROM: Program Executive Office, Command, Control,
Communications, Computers and Intelligence
To: Distribution
- SUBJECT: FED CAL ACQUISITION REQUIREMENTS FOR SCIENCE & TECHNOLOGY
- REF: (A) SET Alignment and Transition Concepts of 6 Dec 79
(B) FED CAL Briefing of 1 May 78
(C) Science and Technology (ST&T) Principles for Naval Forces 20-1-77
Revising of 19 Jan 78
- ENCL: (1) FED CAL Acquisition Guide for Science & Technology
2. PURPOSE: The purpose of this memorandum is to provide FED CAL's annual acquisition requirements for Science & Technology in accordance with reference 1a.
3. BACKGROUND: AFSS for ST&T has compiled key capability gaps for annotated CAL/OPG Programs of Research based on current and projected needs. These capabilities are used here to develop the ST&T Plan for FY 80. This categorization of the Navy Technical Reference Manual (STRM) as defined in reference 1b and are summarized below:
- a. COMMUNICATIONS - Increase throughput and provide dynamic spectrum management to tactical units. Improve two way communications systems and multiple platform coverage through strategic and tactical network systems. Provide physical and electromagnetic survivability, resistance to jamming and Electronic Warfare Effects (EWE), and Low-Foldability of Intercept (LFI) capabilities against control and paralyzed threats. Develop large bandwidth communication systems for surveillance, command and control and associated shipboard processing systems utilizing line of sight (LOS) and beyond line of sight (BLOS) links.
- b. RECOVERY - Support all domain coverage (space, air, surface, and subsurface) using sensor networks that continuously collect intelligence information using self-managing flexible sensing dynamic ad-hoc network technologies supporting standardized if promiscuous. Develop network management techniques to support multi-domain recovery operations in degraded environments. Improve Data Transport reliability and dynamic bandwidth management between base and the MCM. Develop dynamic IP SP for all Navy vehicles, and Data Traffic. Provide full for Agency networks. Provide existing technologies that support command, control, monitoring, services and real-time communications infrastructure for Surveillance, Search, and SET, Alert and Challenge networks. Develop Recovery capabilities for Large Volume Data collection, management, and dissemination.



How SBIR Aligns to PEO Key Initiatives

- Fiscal constraints

- Obsolete equipment replacement
- Address A_0 challenges to drive down TOC
- Incentivize use of SBIR-developed capabilities



- Rapid Delivery

- Rapid Technology Insertion via continued development investments to leverage existing SBIR topics (aka Direct Entry Phase II)



Transition focus

- Emphasis on higher technology readiness level (TRL) and prototype development



SBIR Success Story: Intelligent Agent Security Mgr (IASM)

PEO C4I SBIR Topic No: N99-167



SBIR Investment:
\$953K

Non-SBIR
Investment:
\$26.7M

Performer: Promia

About the Technology

- The Intelligent Agent Security Module (IASM) is a high-speed secure distributed agent based system operating as a single analytical and statistical processor that connects agents gathering network information from many contractor and government off-the-shelf sources.
- IASM “watches” network traffic on many levels to determine misuse, fraud, or attack. Information is analyzed at the agent level, then normalized and fused as it is sent to multi-level IASM servers. The data is correlated and analyzed further to determine cyber attack profiles in real time. Results are translated into simple English for Navy watch standers and centralized analysts to help monitor the electronic terrain of their global networks.

Benefit to SPAWAR and the Warfighter

- The increasing ability of the cyber threat to exploit vulnerabilities and penetrate computer network systems undetected jeopardizes the warfighter’s reliance on computer-network data availability and assurance in mission critical information.
- IASM gives the Navy an enterprise-wide security risk situation awareness view. For the first time, analytic capabilities can accurately identify, source, and isolate cyber attacks.

Military and Commercial Significance

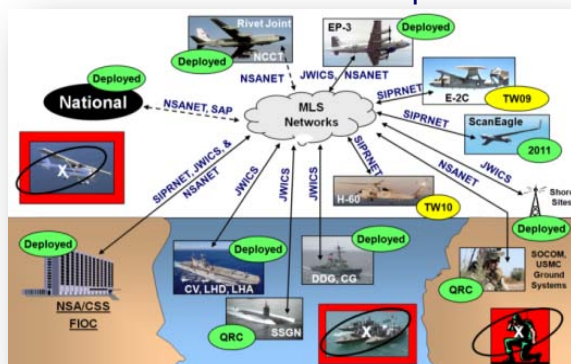
- Twenty six advanced IASM systems have been delivered to the Navy under a Phase III SBIR contract since 2001. These systems have been deployed worldwide in:
 - Fleet Network Operation Centers
 - Navy Component Task Forces
 - SPAWAR Systems Center Laboratories
 - Aircraft carriers and flag ship commands
- Commercial versions of the IASM product are available as a security internet appliance. Promia has units installed in both the Energy and Banking industries.

Cyber Attacks Are Real. IASM is the Warfighter's Defense



SBIR Success Story: Anti-Terrorism Detection, Indications, and Warnings

PEO C4I SBIR Topic No: N02-207



Performer: Ticom Geomatics

SBIR Investment:
\$4.0 M

Non-SBIR Investment:
\$60 M

About the Technology

- ISRnet established a prototype machine-to-machine sensor network management, tasking and processing architecture. This culminated in a COMINT/Multi-Int sensor tasking, cueing and geolocation capability demonstration.
- The ISRnet architecture and sensor network management capability was transitioned into the Navy HITS APOR. ISRnet/HITS helped drive a standards-based approach to Joint, interoperable sensor management, tasking and geolocation processing.

Benefit to SPAWAR and the Warfighter

- Established Navy Leadership for Joint COMINT/ISR sensor grid management, and collaborative geolocation
- Established Navy leadership in F2 in F2T2EA
- ISRnet/HITS helped the Navy be the lead service advocate and largest scale adopter of the Joint Theater Net-centric Geolocation (TNG) Standard.

Military and Commercial Significance

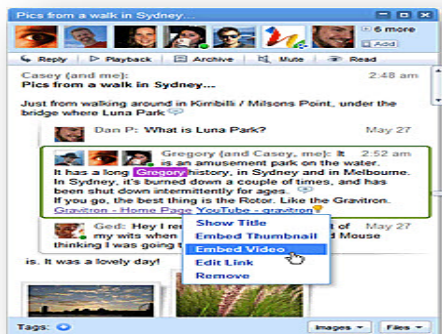
- ISRnet/HITS help drive evolution of TNG
- TNG is now a JROC Endorsed Standard
- Achieved Mission Successes in Target Development, High Value Target ID, Situational Awareness, Kill-chain support
- Navy Technology Being Adopted by USMC, SOCOM, Army, and Intelligence Agencies

From Concept Demonstration to Deployed Joint Operational Capability



STTR Success Story: Development of Navy Wave Rich Collaboration for C2

PEO C4I STTR Topic No: N10A-T044



STTR Investment:
\$278K (ONR funded)

Non-STTR Investment:
Google Internal R&D

Performers: Harmonia, Solute, G2, Systems Engineering Solutions, Inc.

About the Technology

- Google Wave promises to offer a new paradigm for Internet collaboration, combining the best capabilities of XMPP collaboration, instant messaging, email, Wiki documents, and file sharing.
- Knowledge content can be maintained with complete version tracking (even with the embedded gadget state), with support for playback and rewind. Waves can be enhanced with Robots that monitor and interact with a Wave upon request, for simple text enhancements, or theoretically to offer more sophisticated knowledge agent capabilities.

Benefit to SPAWAR and the Warfighter

- Navy Warfighters at the Operational Level of War (OLW) and echelons below are constantly engaged in widely distributed missions. These missions require collaboration between operators ashore and afloat, over communication channels that are often disconnected, intermittent, and limited (DIL).
- The Google Wave technology provides low-bandwidth text-centric collaboration with additional context in the form of conversations ("Waves"), and Wiki-like version-tracking.

Military and Commercial Significance

- The Navy Wave is a proposed Navy C2 extension of the emerging collaboration framework, Google Wave.
- The Wave protocol can be federated across multiple servers, supporting DIL environments. The Navy C2 PoR sponsor PMW 150 will work to transition the technology.

Ride The Wave Of C2 Capability!



SBIR and STTR Solicitation Schedule

Date	SBIR 12.1
9 Nov	Pre-solicitation opens
12 Dec	Solicitation opens
11 Jan	Solicitation closes (proposals due)
19 April	Award date

Date	STTR 12.A
26 Jan	Pre-solicitation opens
27 Feb	Solicitation opens
28 March	Solicitation closes (proposals due)
5 July	Award date

<http://www.navysbir.com/solicitations.htm>



Resources

SPAWAR Small Business Office

spawarsbo@spawar.navy.mil

619.524.7701

- SBIR/STTR: <http://www.navysbir.com/solicitations.htm>
- E-commerce:
<https://ecommerce.sscno.nmci.navy.mil/command/02/acq/navhome.nsf/homepage?readform>
- Seaport-e: <http://www.seaport.navy.mil/default.aspx>



We get IT.

We also integrate it, install it and support it. For today and tomorrow.

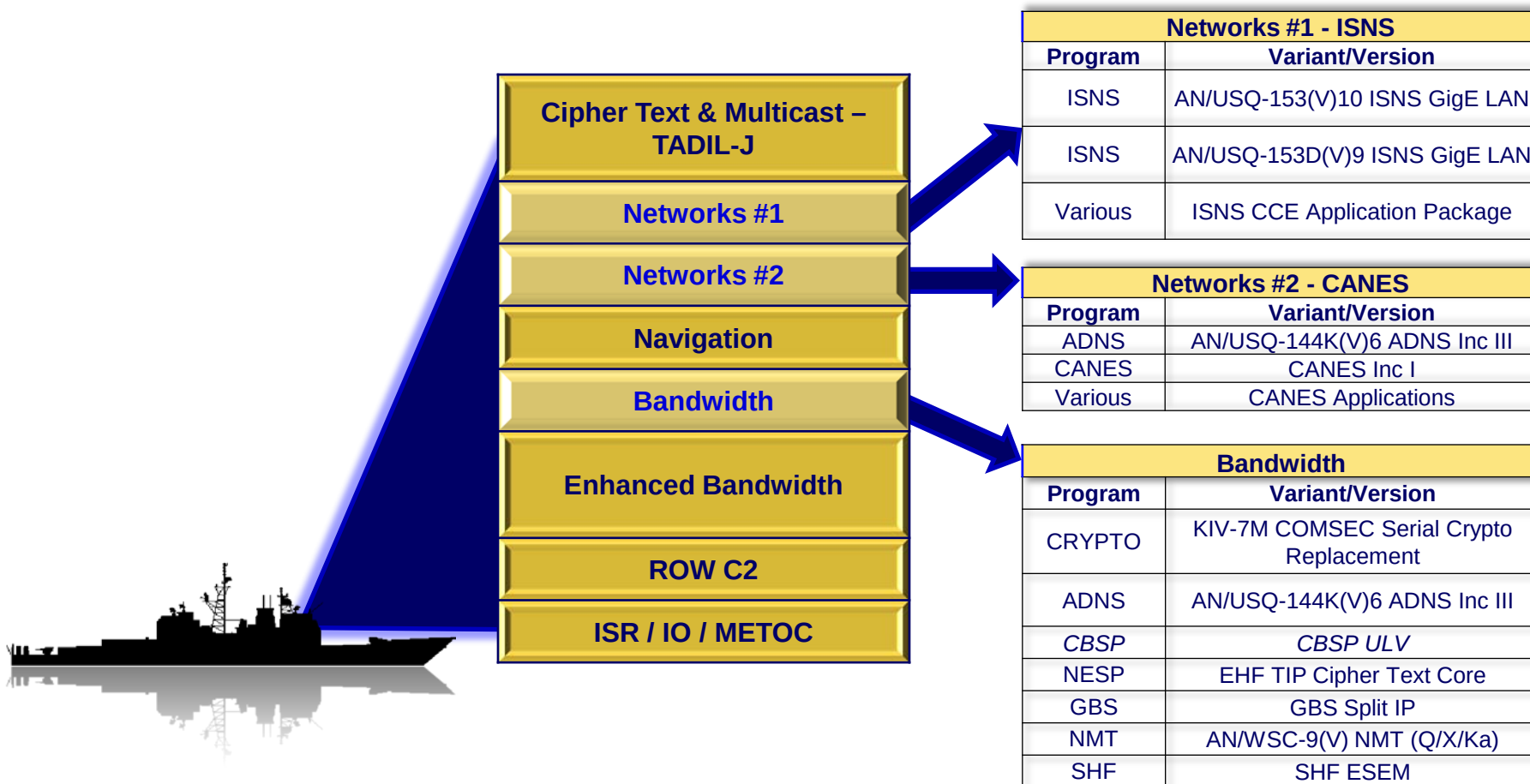
Visit us at www.peoc4i.navy.mil





Example of C4I Builds; Networks and Bandwidth Builds on Cruisers

Group-Unit Packages FY12-13

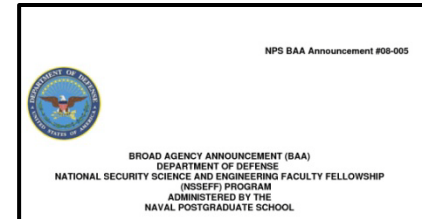


Multiple C4I Builds are a part of the Objective Platform Baseline



Small Business entry points to PEO C4I

Broad Agency Announcements (BAA)



Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR)

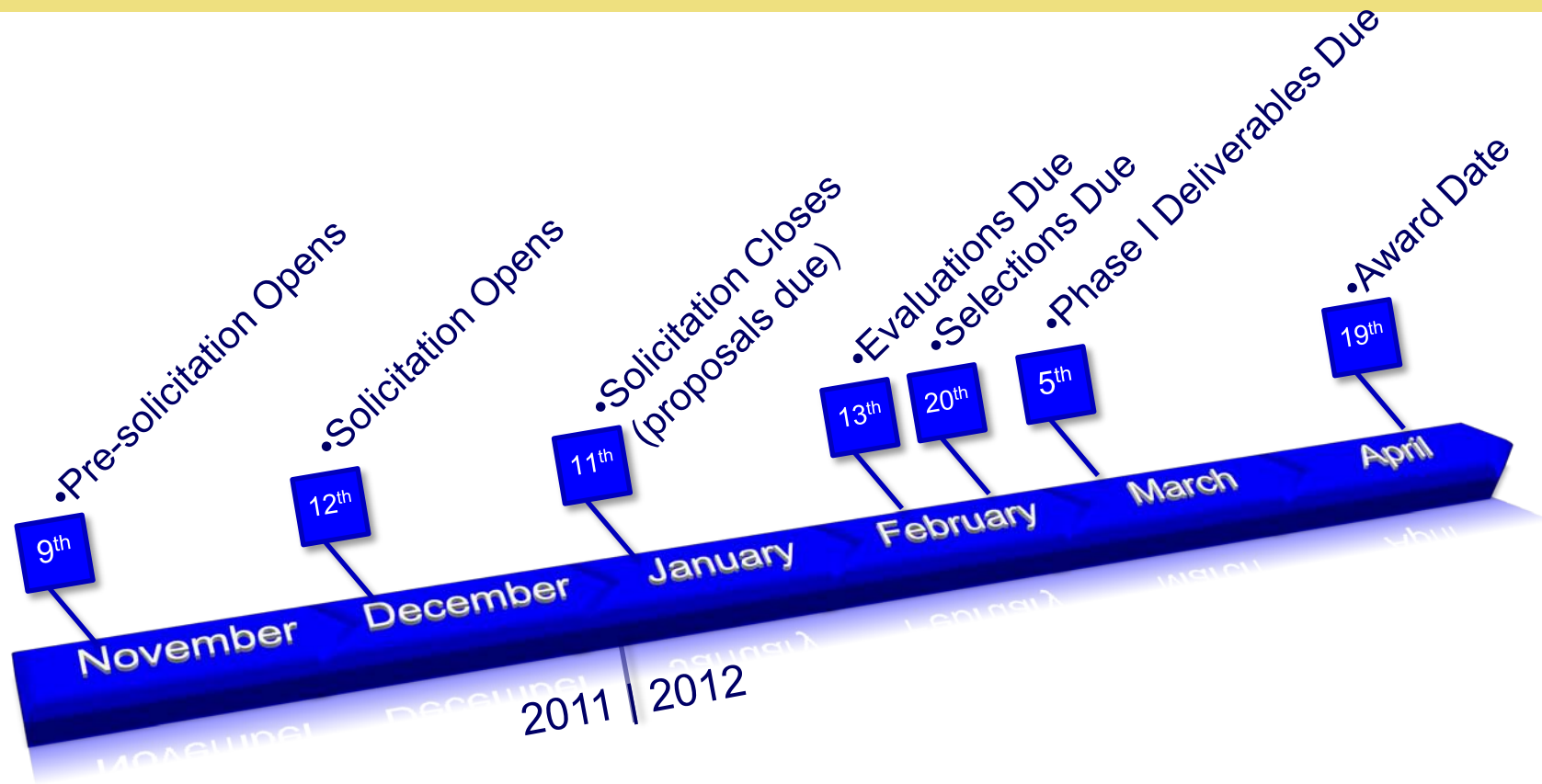
E-commerce





SBIR Solicitation Schedule

SBIR 12.1 – next opportunity

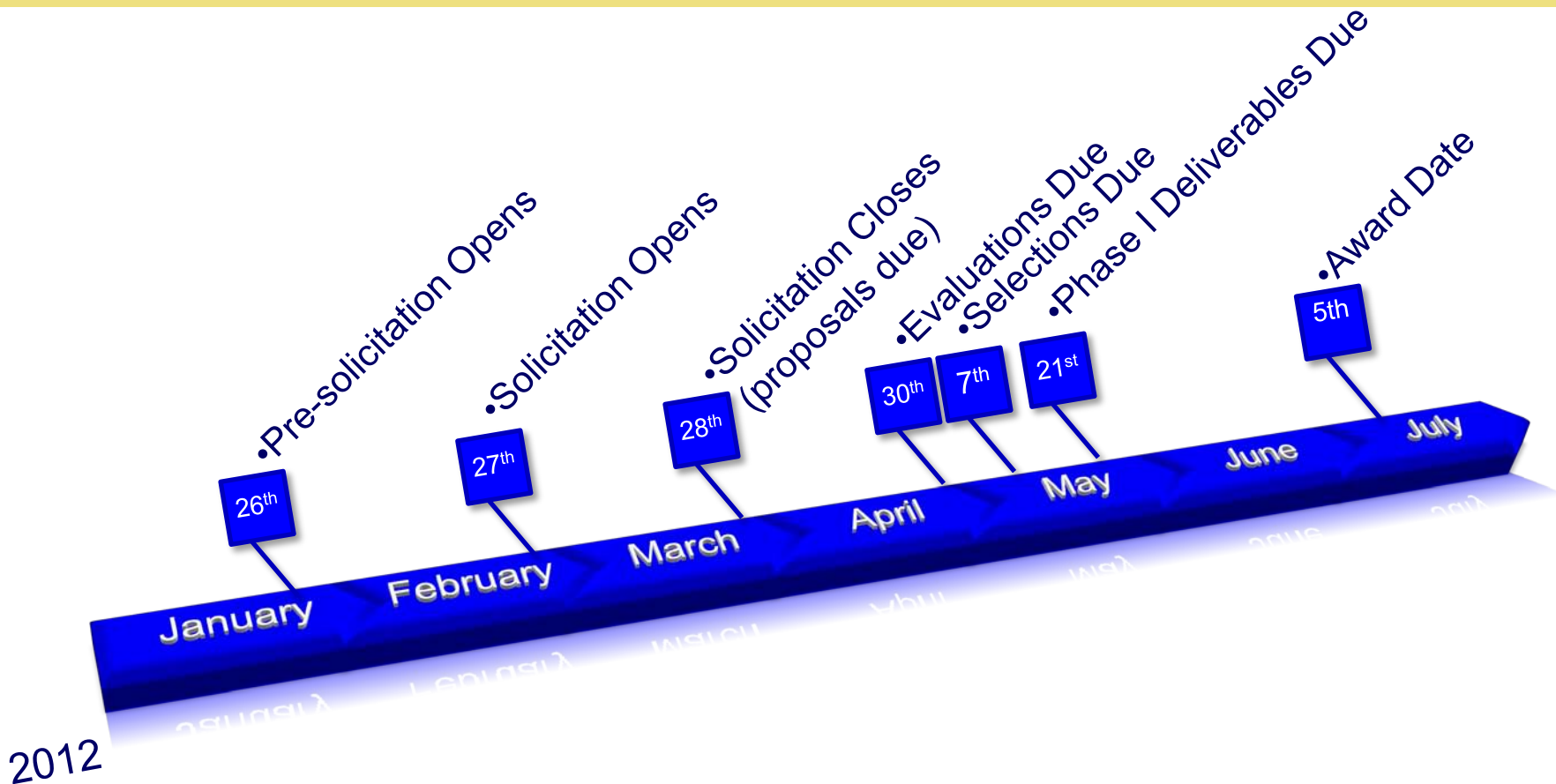


- Expecting three topics



STTR Solicitation Schedule

STTR 12.A – next opportunity



- Expecting two topics (currently being generated)