

General Membership Meeting

16 May 2014

Agenda

- 7:30-7:55 **Sign In and Networking**
Free-Form Meet and Greet
- 8:00-8:10 **Welcome and Announcements**
Mr. Lee Bradshaw, Chair, Executive Steering Committee
- 8:10-9:30 **Naval Air Warfare Center Aircraft Division Strategic View and Initiatives**
Rear Admiral Mark Darrah, Commander, Naval Air Warfare Center Aircraft Division
Mr. Gary Kessler, Executive Director, Naval Air Warfare Center Aircraft Division
- 9:30-9:45 **Break**
- 9:45-10:30 **Naval Air Systems Command Operations and Funding Outlook**
Mr. Gary Kurtz, Corporate Operations, Naval Air Systems Command
Mr. Jerry Short, Comptroller, Naval Air Systems Command
- 10:30-11:15 **Small Business Program Update**
Ms. Emily Harman, Office of Small Business Programs, Naval Air Systems Command
Mr. Jeffrey Guarnero, Deputy Department Head, Naval Air Systems Command Contracts
- 11:15-11:30 **New Business and Announcements**
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Welcome and Announcements

Mr. Lee Bradshaw
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NAWCAD Strategic View and Initiatives

16 May 2014

Presented to:

Small Business Roundtable

Presented by:

RDML Mark Darrah

Mr. Gary Kessler



NAVAIR Strategic Drivers

Digest CSS cuts (5% of total workforce in FY15)

- More Efficient
- Eliminate Work
- Take on Risk

Reduce Cost (85-90% of NAVAIR budget)

- Should Cost
- Government owned Tech Standards and Data Rights (*Lead Capability Integrator*)
- Innovative Acquisition Strategies

Improve Program Support

- Modernize Technical and Business Processes
- IWC
- “Organizational” Horizontal Integration



Mission vs. Platform Focus

CURRENT

- In today's acquisition process, programs matured independently
- System-of-Systems Integration occurs when delivered to the fleet



FUTURE

- Programs are networked to form a System-of-Systems
- Intersections are potential nodes in a "Kill Chain"
- Single Kill Chain Assessment is a Mission Thread
- Assessment of all Mission Threads ensures Integration & Interoperability of Programs





Strategic Scan: The Threat

“Assured access is the bedrock
of our tenants as a Naval Force.
Strike from sanctuary is the future.”

- VADM Locklear NAVEUR 2004



Worldwide Challenges for US Navy



Russia plants flag under North Pole to solidify claim to newly accessible Arctic regions



China operates one ice breaker and is building another without having any contiguous territory in the Arctic

Russia sends troops to Ukraine after Russian leaning President ousted



UN confirms Syria used chemical weapons against civilians



Drug smugglers building submersibles to evade interdiction

US Navy conducts strikes against terrorist cells in Somalia with SEAL teams and drones



China pressing territorial claims in South China Sea against Vietnam, the Philippines, Taiwan and others.

China establishes Air Defense Zone over disputed Senkaku Islands against Japan and South Korea





Threat Systems

Our adversaries are developing new and innovative threat technologies and weapon systems



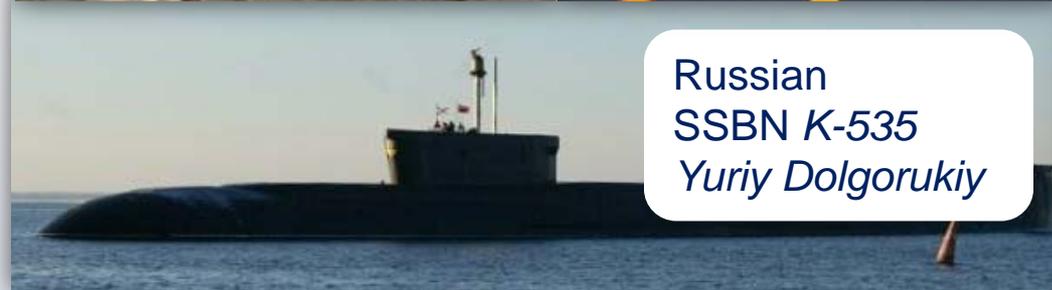
Taliban with
RPGs



PLANAF J-15 Naval
FLANKER launch from CV



Russian PAK-FA



Russian
SSBN K-535
Yuriy Dolgorukiy



New Chinese UAV



PLAN
HHQ-9
SAM

Some asymmetric enemies are using readily available systems to challenge the US Navy in new ways.



Strategic Scan: Our People and Experience

“You need skeptics on your team.”

- VADM Wieringa DSCA 2011

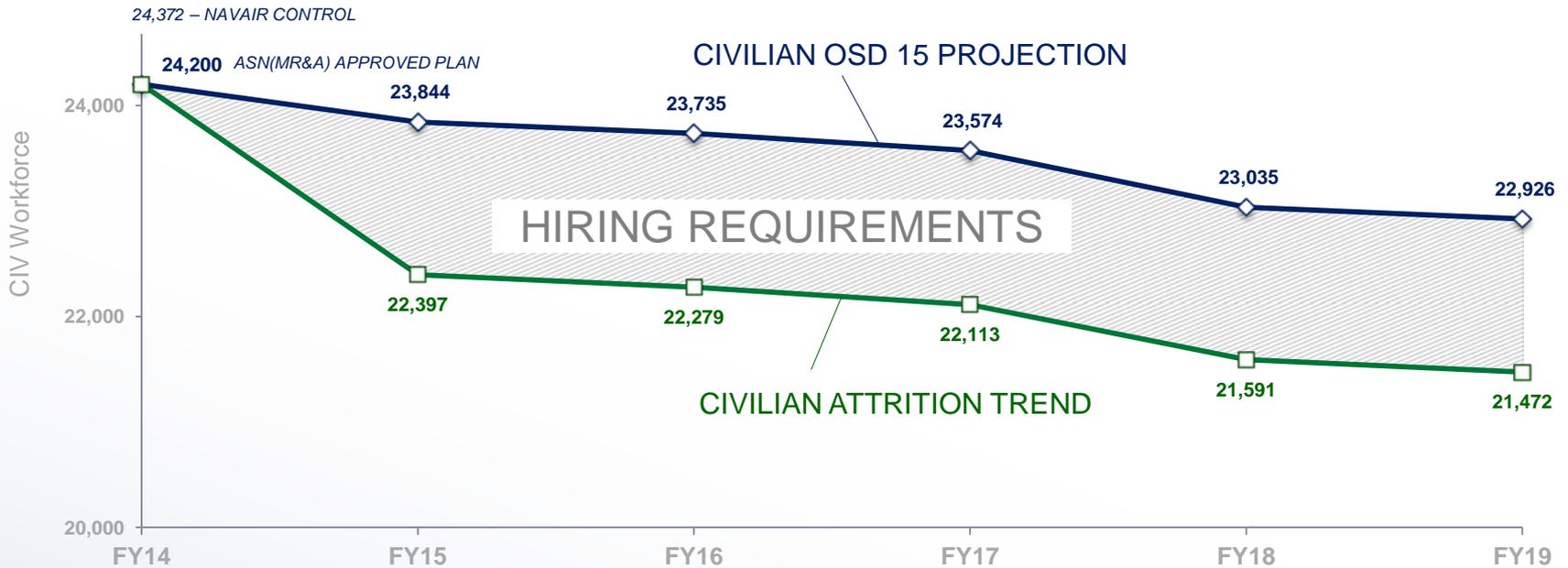
**“Eventually if you make enough
bad decisions, something bad
will happen.”**

- Dr. Al Somoroff, JSF ED 2012



NAVAIR Workforce Planning (FY14-19) Forecast Civilian Hiring Requirements

~ 9,000 CUMULATIVE HIRES
OVER NEXT 5+ YEARS



- Focus on pipeline skill requirements for the future
- Aggressive hiring to meet workforce shaping / goals
- Need proactive leadership engagement
- Initial baseline hiring plan: **1,968**

FY13 ACTUAL = 23,983

CIV PROJECTIONS REFLECT OSD 15, TO INCLUDE CURRENT BUDGET REDUCTIONS AND EXCLUDES FOREIGN NATIONALS



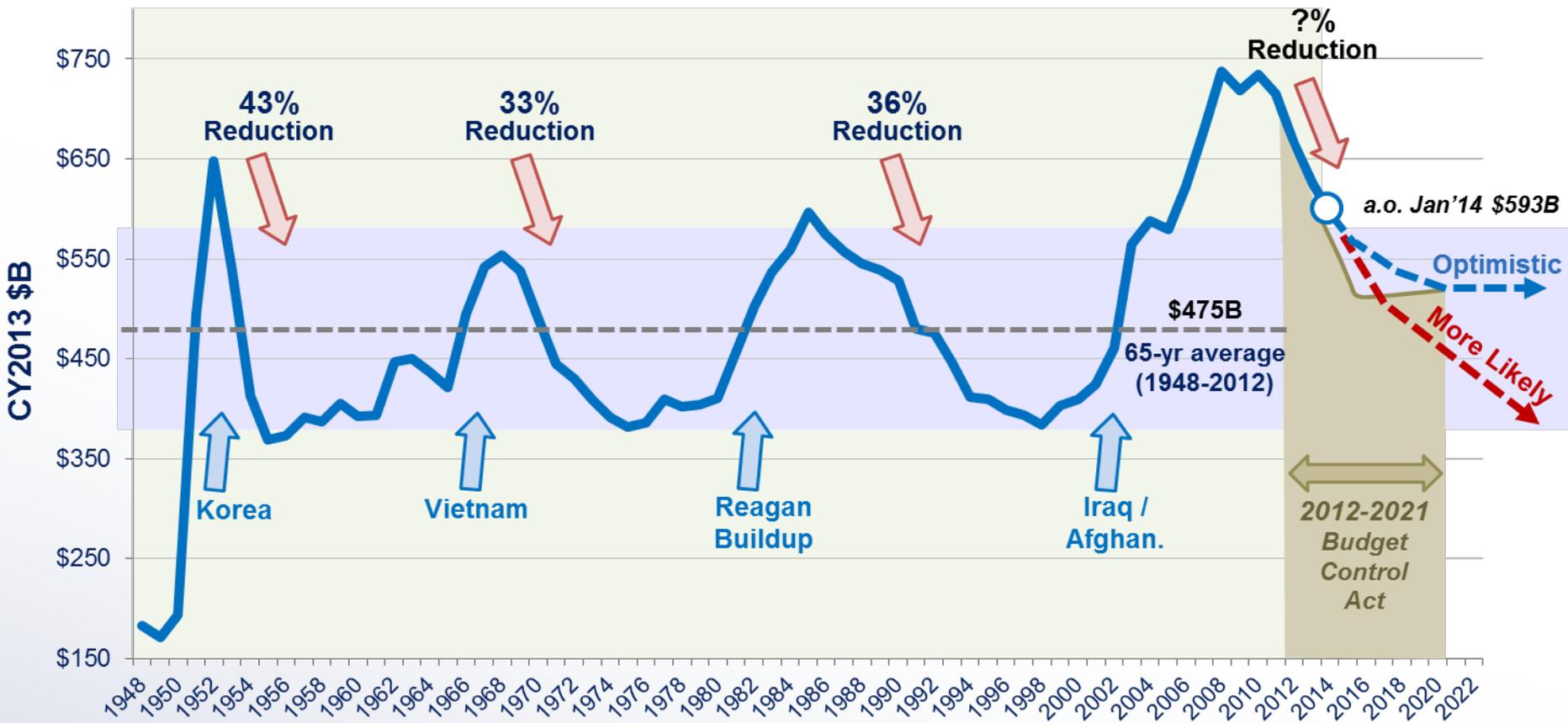
Strategic Scan: The Budget and Strategy

“We as leaders, must ask ourselves...**what is it we cannot be wrong about?**”

- ADM Patrick Walsh PACOM 2005



Historical Perspective: DoD Topline Budget



Source: USD(Comptroller) FY14 Green Book, May 2013

EXPECT 35-45% REAL DECLINE FROM 2008-10 LEVELS



Aligning to Command Guidance & Intent: Fy14 NAWCAD Initiative Highlights

PEOPLE

INVEST IN OUR PEOPLE

SPEED

INTEGRATED WARFIGHTING CAPABILITY

DELIVER INTEGRATED & INTEROPERABLE
WARFIGHTING CAPABILITIES

AFFORDABILITY

IMPROVE AFFORDABILITY
ACROSS THE FULL LIFE CYCLE

	Establish Comprehensive Workforce Strategy	Establish a Highly Dynamic Learning Organization	Out-Pace the Threat	Deliver Advanced IWC	Reduce Acquisition Cycle Time	Reduce Total Ownership Cost
Examples of Completed or Incorporated	<ul style="list-style-type: none"> HQ LRWS LO POA&M COI POA&M Future Rqmts Env Scans GTRI (X14) Strat Rdtble 	<ul style="list-style-type: none"> TSD LO Study LO Knowledge Wkshop NLDP LOFT Pilot/WAS NLDP Facilitation MySites Pilot AIR MOOC Policy Draft TPP Strategic BBs (X2) 	<ul style="list-style-type: none"> DARPA HELLADS DoN DEW Strategy DEW S/V Test OA Demos (3X) NWC Wargame PS APL Nano Study 3-D AM MMOWGLI 	<ul style="list-style-type: none"> Autonomy Thrust ICAP/ITEST FA-XX Planning Experimentation MIT LL/LLNL A2AD Brief Dvmt Innovation R&D Innovation Courses 	<ul style="list-style-type: none"> RR/IW Wargames RR/IW SharePoint RR/IWC Org/CONOPS Skunkworks Concept PLM Benchmarking HQ Data Governance Charter 	<ul style="list-style-type: none"> Open Arch COI Autonomy COI Market Research Checklist Devmt Big Data Analytics Benchmarking (IBM, Deloitte, Lone Star, etc.)
Examples of Currently Working	<ul style="list-style-type: none"> 3-D VW NLDP OpenSim Talent Mgmt MOOC Deploy Future Skills ID Leaders Library Mental Model R&D 360 Leader Devmt 	<ul style="list-style-type: none"> LO Deployment (TSD, PAX, LKE) Innovation Courses Deploy MMOWGLI Devmt TPP BoD 	<ul style="list-style-type: none"> A2AD Assessment 3-D AM Rdmapping FA-XX DSS Strategic DSS Innovator Networks Security Infrastructure Nanotechnology DEW/HELLADS OSD FATWG 	<ul style="list-style-type: none"> IWC RR CONOP Experimentation Planning Autonomy Sense & Avoid NWC Wargame NWC A2AD Study NWDC Innovation Cell CNO SSG 	<ul style="list-style-type: none"> LSI PMA DSS Tool Strategic DSS AGILE SW Devmt Big Data/Analytics SE Transformation PLM Lab/Proto 	<ul style="list-style-type: none"> LSI Thrust VC Opportunities SMIT & CRADAs Promote AD Labs/Ranges FACE/MOAA ROS/MOAA Cognitive Computing



Autonomy Partnerships

University System of Maryland Autonomous Systems Initiative

- Research center at SMHEC
- Provides local capability for academic researches
- Provides incubator for small business
- Provides mechanism for partnerships
- Includes commercial activities
 - *Navy can leverage*
- Autonomy Workshop Feb 21
- Funded study (ROS/FACE)

NAVAIR Applied Autonomy COI

- Forum for DoD
- Looks for synergy among NAVAIR autonomy activities
- Coordination with external activities (eg. DoD COI)
- Meets Quarterly
- SharePoint site



Autonomous Research Workshop

Held at SMHEC Friday 21 February 2014 8:30 AM - 5 PM

Brought together UMD, NAWCAD, other academia and government agencies, and industry in a research workshop environment

Goals:

- **Generate research topics to submit for future proposal submission**
 - *No funding directly from workshop*
- **Build regional autonomy partnerships**
 - *Cross/multi domain*
 - *Multi organizational (Gov't, Industry, Academia)*
 - *Gov't and commercial activities*

Remarks by Admirals Winter and Darrah, Dr's. O'Shea and Pines



Autonomous Research Workshop

Invite only = 112 attendees

- **Gov't:** NAWCAD, NAVAIR, NRL, PEO U&W
- **Academia:** UMD, UMBC, UMES, JHU/APL, MIT, GTRI, VA Tech, USNA, FIT, NPGS, SMHEC
- **Industry:** Lockheed Martin, Boeing, Aurora, Qinetiq, Ausley Associates, UAV Solutions, Hyperion Technologies, Sabre, SAIC, Wyle, CTSi, RED Inc, Smartronix, Stark Aerospace, Omni RPV, IAI, R Cubed, BCF Solutions, RMC, DCS Corp., National Instruments, LSA Autonomy, MiMoCloud, Lifebotics, SoarTech, See Signals, MAK
- **Community:** TEDCO, St. Mary's County, TPP



Autonomous Research Workshop

Seven topic panels

- **Humancentric Control, Navigation and Decision Systems**
 - Joe Notaro (NAWCAD) & Nuno Martins (UMD)
 - Designing the Information Structure for Human Operator Workload Optimization for Semi-autonomous Decision Systems
- **Autonomous Architectures**
 - John Baras (UMD) & Lauren Kessler (Draper)
 - Autonomous Architectures to Support Distributed Intelligence Within and Between Heterogeneous Agents
 - Proving the compatibility of open architectures and low-cost components
- **Multi-domain coordination**
 - P.S. Krishnaprasad (ECE - UMD) & Dave Scheidt (JHU)
 - Threat Reduction by Collective Behavior
 - Heterogeneous Unmanned Vehicles Conducting ISR and Deception in Communications Challenged Environments
 - Autonomous Multi-Robot Robot Manipulation for Working in Ship Spaces



Autonomous Research Workshop

Seven topic panels continued

- Test and Certification:
 - Adam Porter (UMD) & Dave Roberts (NAWCAD)
 - Efficiently discovering high-coverage configurations using interaction trees
 - Software tomography for lightweight, continuous, in-the-field system monitoring
- Detect And Avoid (DAA) + dynamic clearance
 - Thomas Hanrahan (NAVAIR), Tony Pucciarella (Ausley) & Timothy Horiuchi (UMD)
 - Unmanned Aircraft (UA) Detect-and-Avoid (DAA) Autonomy to Human Interface
 - Low-cost, Lightweight Sensor Suite for Unmanned Aircraft (UA) Clutter Detect and Avoid
 - Unmanned Aircraft (UA) Context-Based Detection and Tactical Avoidance
- Communications Management for Autonomy
 - Richard J. La (UMD) & Richard Tygrett, (NAWCAD)
 - Real-time network failure detection and recovery through preplanning
 - Real-time estimation of network state for autonomy
- Learning and autonomy
 - SK Gupta (NSF/UMD) & Bryan Vandrovec (RED Inc)
 - The Role of Machine Learning in Automated Generation of Robust Behaviors



Transitioning to Open Interface Architecture



Closed / Custom / Proprietary

Open



<http://www.opengroup.org/face>

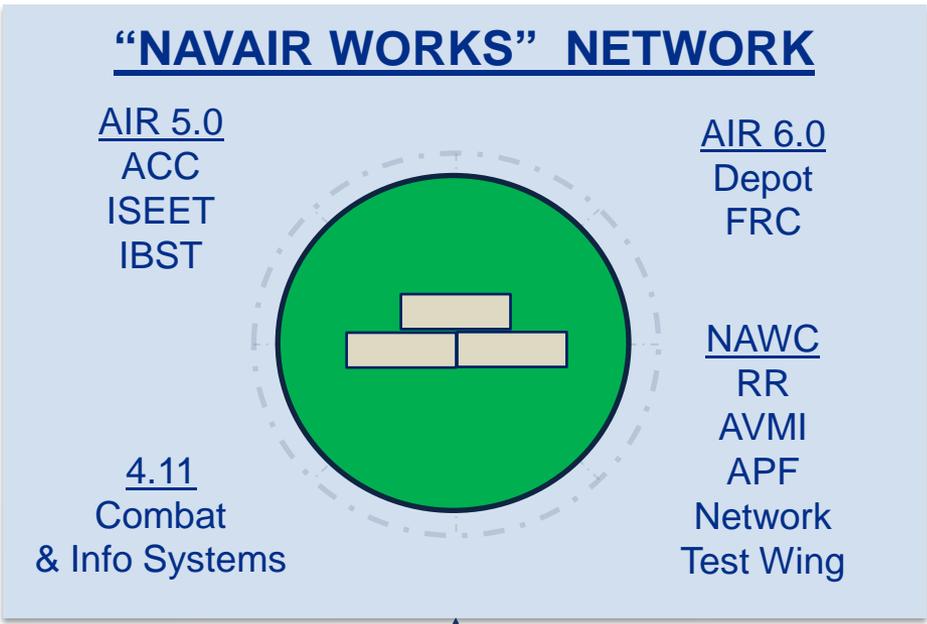
Distribution Statement A: Approved for Public Release
2013-920





NAVAIR Works

IWC-ET
ITO



PRODUCTS

- Prototypes
- Fleet Experiments
- Fit Check Parts
- Rapid Response Projects

4.0/5.0/6.0/AD/WD/FRC Domains & Organic Capabilities

Organic Manufacturing Capability

	Grinding	Lathe	Parting	FRC	Vertical	FRC	Weld	FRC	Surface	FRC	Surface	FRC	Lat	FRC	Vertical	Refurb	Sublegs	Substruc
Cable Assembly	X	X	X			X	X	X	X	X	X	X				X	X	X
Coating and Painting	X	X		X				X		X	X	X				X	X	X
Composite Component	X						X				X	X					X	
Electronic Component	X	X	X					X	X							X	X	X
Energetics Processing	X																	X
Heat Treatment	X	X		X		X	X	X	X	X	X	X						
Hydraulic Systems	X	X				X					X							
Machining/Tool&Die Creation	X	X		X		X	X	X	X	X	X	X						
Machined Components	X	X	X	X				X	X	X	X	X		X		X	X	X
Optical Systems Assembly	X	X																
Oxygen Cleaning/Repair		X																
Packaging and Preservation	X	X		X						X								
Pneumatic Systems	X																	X
Polymer Systems	X																	
Sheet Metal Components	X	X	X	X		X	X	X	X	X	X	X		X		X	X	
Software Systems	X	X	X			X											X	X
Swaging/Boring		X																
Textile Systems	X	X									X							X
Tube Bending & Fabrication	X	X					X	X	X	X	X	X						
Welded Structures	X	X					X	X	X	X	X	X				X	X	



Tiers of Systems Engineering

Systems Engineering Functions

- Mission Architectures
- Mission Analysis/Decomposition
- Capability Assessments
- Functional Requirements
- ICTB Certification
- Alternative Concepts
- Functional Architectures
- Functional Allocations
- Functional Interfaces
- Configuration Items
- Trade Analysis
- Risk Management
- Reqts Management
- KPPs/KSAs/MoPs

Independent of Levels



SoS, Allocated FoS
Mission Level



Allocated Functions Performed by Platform/Payload
Weapons Platform/Airborne System Level

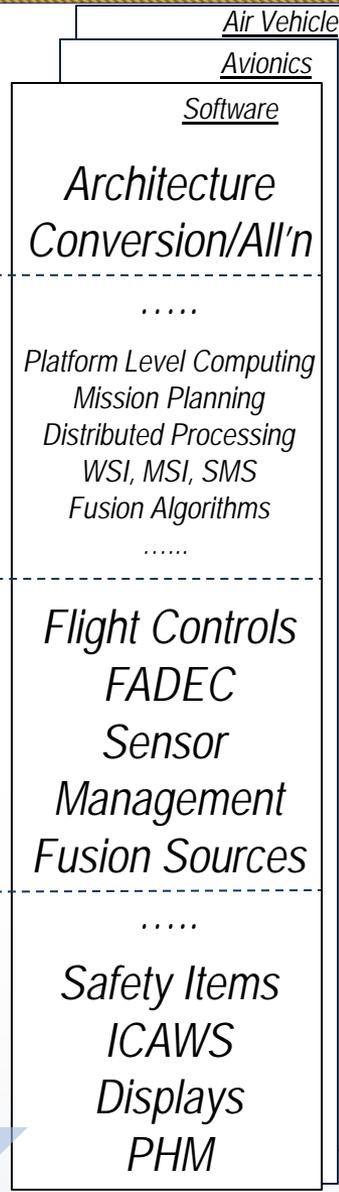


Airframe, Propulsion, WRAs, Sensors, Weapons
Allocated Sub-Systems, Functions



End Items
Components

Dependent on Levels

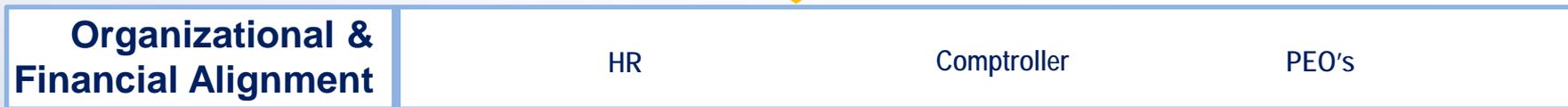
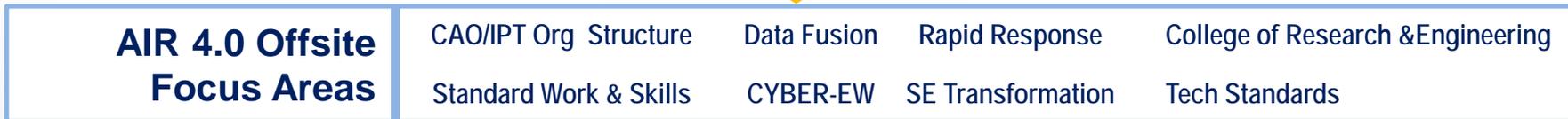




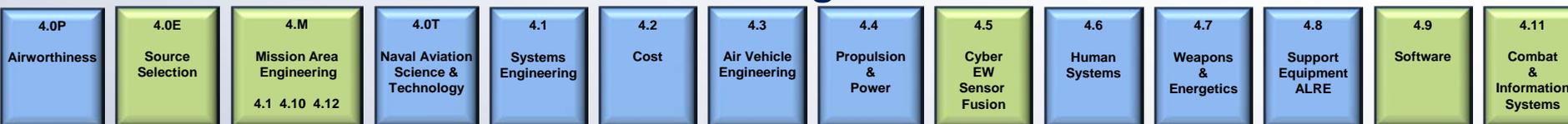
Current AIR 4.0 Organization



NAVAIR Commander's Guidance

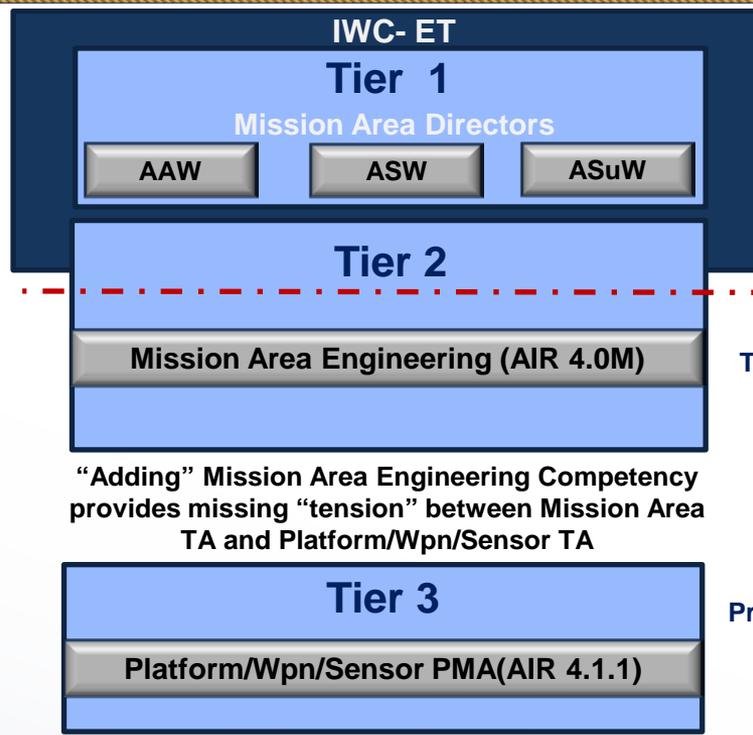


AIR 4.0 Reorganization





NAVAIR IWC / Mission Area Engineering Alignment



“Adding” Mission Area Engineering Competency provides missing “tension” between Mission Area TA and Platform/Wpn/Sensor TA

DEVELOP, INTEGRATE & CERTIFY MTB

Competency-fed Integration Team (Generate ICTB + Enforce Mission Level Standards)

ENVIRONMENT & ENFORCEMENT

Program Level Competence (Implement Standards)

- AIR 4.1**
- SE Tools & Process
- SETR
- Airworthiness Risk Mgmt
- Product Integrity & Certification
- OA
- Safety
- IA
- IT
- “Ilities”
- Metro



ENABLER'S:

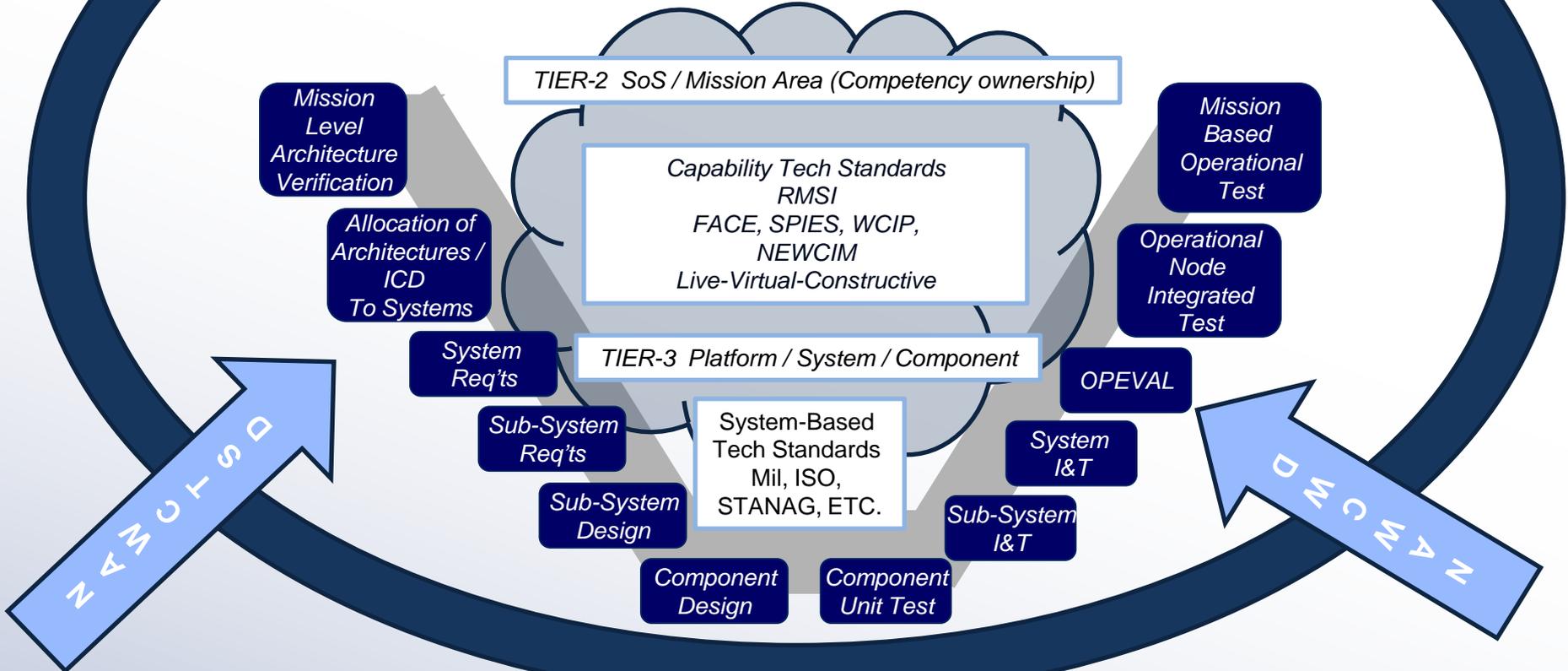
Integrated Collaboration Network
Training (College of Research & Engineering)
Product Alignment
Standard Work



MASE / MATE / MAL Collaboration SUPPORTED BY NAWC INFRASTRUCTURE

NAWCAD

Integrated Mission Area Collaboration Network
*Composed of AIR 4.0/5.0/6.0 Mission Area Competence
enabled by an IT-based collaboration network*





Things to Consider

How will our mission change given Strategic Scan?

Are we positioned with resources (people, facilities) to support the Defense Strategy to:

- *Shift operational focus and forces to the Asia-Pacific*
- *Sustain commitments to key allies and partners in Middle East & Europe*
- *Maintain engagement in other regions*
- *Continue to aggressively pursue global terrorist networks*

What core capabilities do we bring to DoN that will help make these strategic shifts?

Should we divest from certain efforts? If so, where?



Summary

Mission vs. Platform focused

- **Mission Technical Baseline**
- **Integrated Capability Technical Baseline**
- **Integrated Warfighting Capability Package**

Aligns with NAVAIR Commander's Guidance and Intent

- **People**
- **Integrated Warfighting Capability**
- **Affordability**

Ensures Integration & Interoperability of Programs

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Small Business Program Update

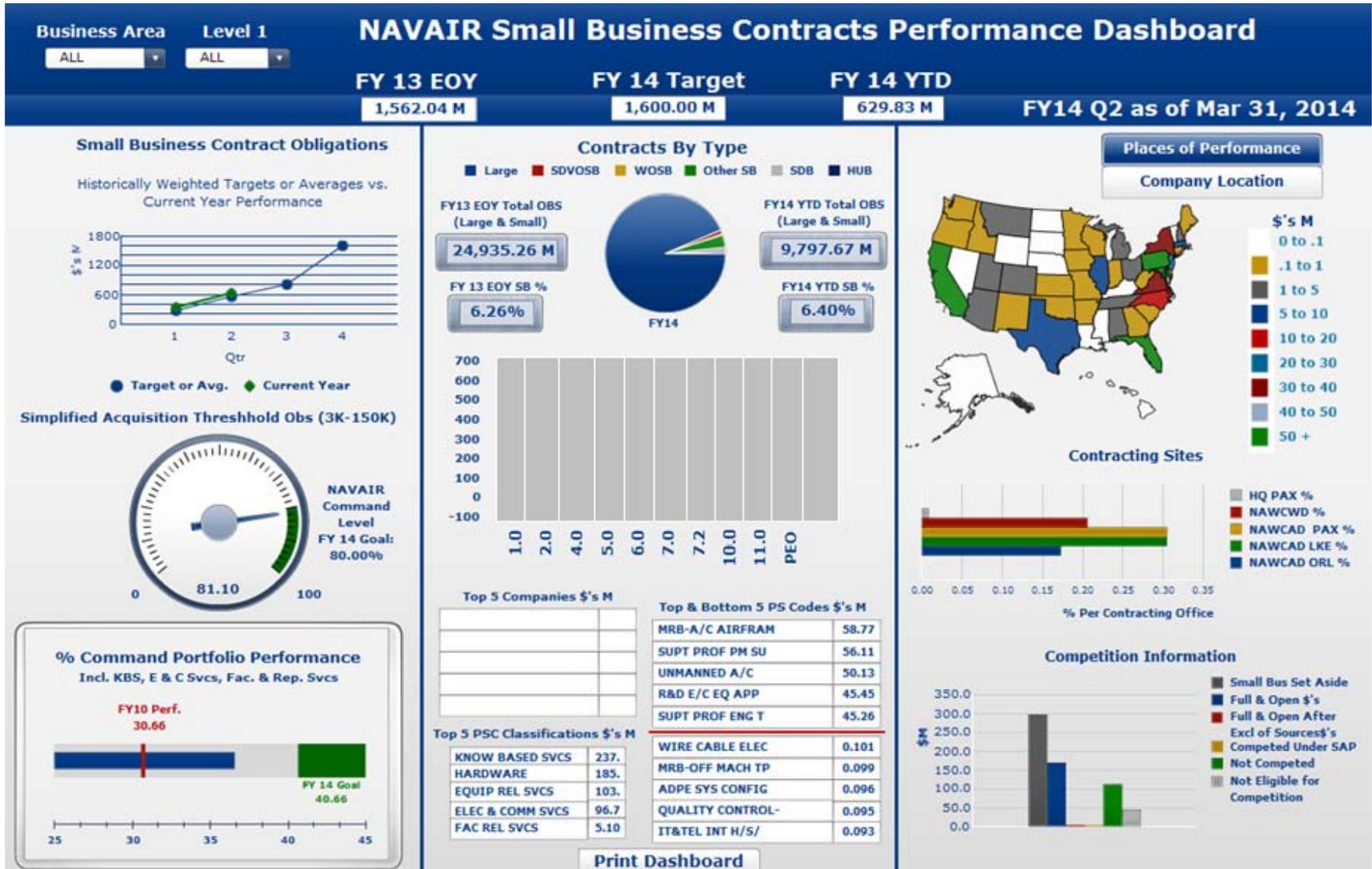
Presented by:

**Emily Harman, Associate Director
Office of Small Business Programs**

May 16, 2014



NAVAIR's SB Dashboard, 2nd Quarter FY14





NAVAIR Obligations for FY14

Location		Small Business			Small Disadvantaged Business			SDVOSB			Women-Owned			HUBZone		
	Eligible	Target	Dollars	Current	Target	Dollars	Current	Target	Dollars	Current	Target	Dollars	Current	Target	Dollars	Current
NAVAIR	11.27B	\$1.6B	759M	6.73%	2.00%	214M	1.90%	0.75%	142M	1.27%	1.00%	112M	0.99%	0.20%	47M	0.42%
HQs	8.9B	0.5%	10M	0.12%	0.10%	2M	0.023%	0.0016%	27K	0.000%	0.114%	614K	0.006%	0.009%	0	0.000%
Pax River	812M	25.2%	220M	27.11%	9.86%	75M	9.24%	4.15%	33M	4.14%	5.75%	52M	6.42%	1.50%	21M	2.66%
Lakehurst	471M	53.4%	242M	51.41%	12.34%	28M	5.98%	7.93%	59M	12.65%	7.00%	25M	5.40%	1.71%	23M	5.08%
TSD	645M	24.0%	129M	20.00%	12.69%	42M	6.61%	1.50%	10.3M	1.59%	5.50%	23M	3.57%	0.149%	14.1K	0.00%
NAWCWD	384M	40.0%	156M	40.70%	16.70%	66M	17.32%	3.00%	39.2M	10.21%	3.00%	10.8M	2.81%	0.25%	2M	0.53%
Small Business Assessable Market (SBAM): Target = 17% / Actual = 11.26%							Yellow denotes less than 1/10th away from target.									
Simplified Acquisition Threshold: Target = 80% / Actual = 86.94%																
Service Improvement: Target = 40.66% / Actual = 36.15%																

Data from FPDS-NG, 5 May 2014

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