

Pre-Decisional



Naval Enterprise Open Architecture



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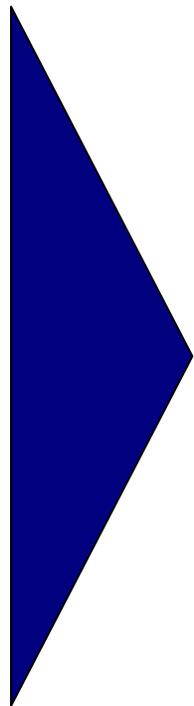
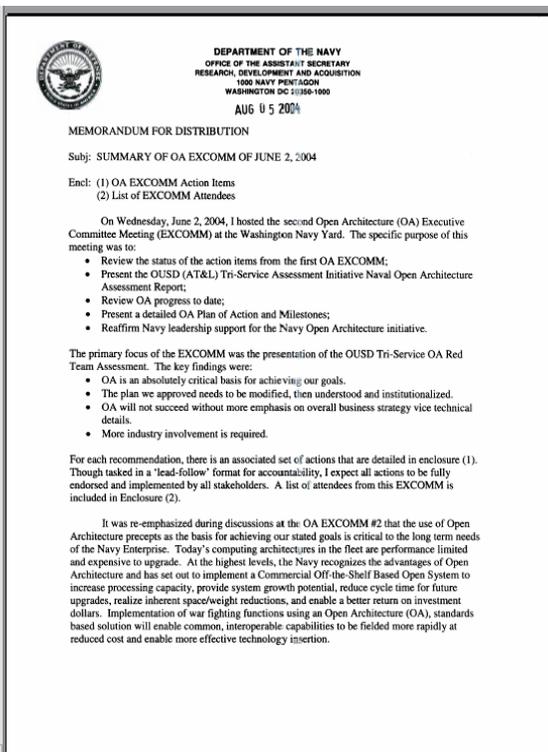
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Open Architecture Enterprise Effort



- Navy leadership established the Open Architecture Enterprise Effort to guide the implementation of open architecture across the enterprise



- Create a Naval Enterprise OA Organization
→ OA Enterprise Team (OAET)
- Prepare and promulgate Navy-wide business strategy to support OA goals
- Increase involvement of industry and academia
- Investigate alternative strategies for budgeting and contracting for platforms and their combat systems to maximize OA benefits

“PEO IWS is assigned overall responsibility and authority for directing the Navy’s OA Enterprise effort”



OA Transformation Roadmap

- The Navy, led by PEO IWS and the OAET, has developed an OA Transformation Roadmap comprised of four key components

1. OA ENTERPRISE COORDINATION

The OA Enterprise Coordination is the overarching structure needed to manage the initiative, keep activities aligned, and ensure the initiative stays on schedule

2. CHANGE MANAGEMENT / COMMUNICATIONS

Change Management / Communications involves the cultural adoption of OA principles and practices through stakeholder management, communications, training, and OA Knowledge Management

3. OA PROGRAM MATURITY DEVELOPMENT

ASSESS → PLAN → EXECUTE → FEEDBACK

Program Maturity Development involves the process of baselining the OA maturity of systems and family of systems and determining plans of action

4. OA INFRASTRUCTURE IMPLEMENTATION

ASSESS → DEFINE → IMPLEMENT

OA Infrastructure Implementation entails the people, process, and technology changes needed to institutionalize OA principles and practices across the enterprise



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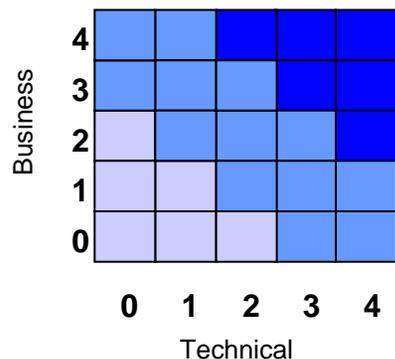


Analytical Tools



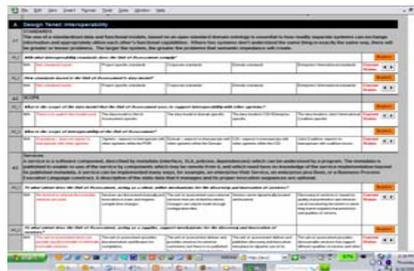
- The OAET has developed analytical tools to assist PMs in determining the “level of openness” of their programs...

OA Assessment Model
Version 1.0 (8 March 2005)



- Graphical depiction of the current OA maturity state
- Approved by EXCOMM

Prototype
OA Assessment Tool



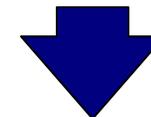
- Set of business and technical questions to help PMs understand how to become more open
- More accurate assessment of OA maturity state
- Tool is being updated based on alpha test results

Where is my program today?

What are the alternatives for advancing towards OA?

Is a business case needed?

What are the benefits and costs of moving forward?



BCA Template

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Note: Secretary Young's August 5, 2004 EXCOMM Memo required PEO-IWS and the OAET to “provide programs with analysis tools needed to make tradeoffs”

3. OA PROGRAM MATURITY DEVELOPMENT

ASSESS

PLAN

EXECUTE

FEEDBACK

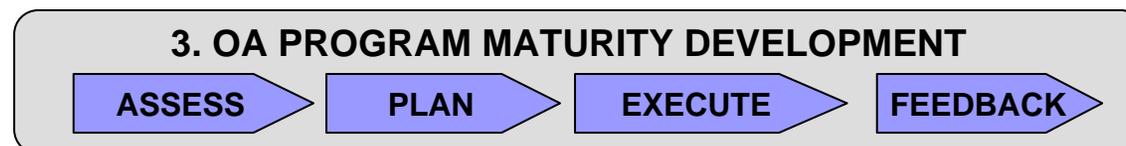
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OA / Fn Alignment Experimentation Strategy



- End-to-End Force Level System Engineering
 - Experimentation to resolve issues
- Testing reusable component effects across systems and domains
- Foster team work and common understanding across domains
- Use Open/Collaborative Engineering Environment across Naval Enterprise
 - Leverage existing netted environments of land-based test sites and live assets where applicable
 - Hook up labs and fleet connectivity only as needed—leverage existing facilities and networks
 - Data Repository/Tools – Enterprise Level Engineering Assessment Capability
 - Leverage existing tools (e.g. ASN RDA CHENG/NCEE,...) and processes where applicable
- Seamless OA/Fn Integration
 - Reducing the risk of delivering non-interoperable products

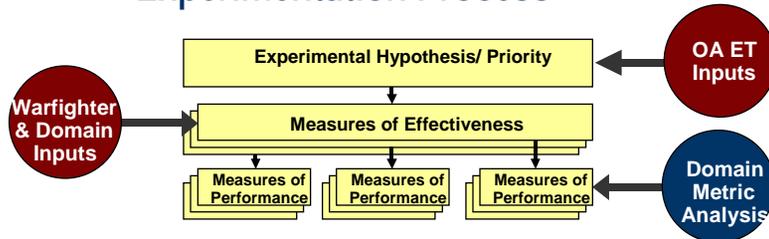




OA FORCEnet Risk Reduction

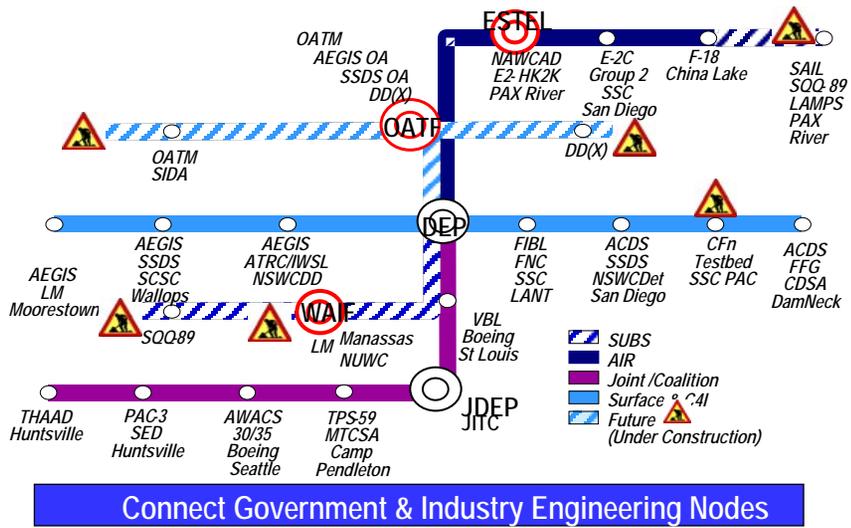


OA/FN Alignment / Integration Experimentation Process



- Integrated Product Team Deliverables:**
1. Prioritized Engineering Assessment Candidate Topic List
 2. OA/FN Risk Reduction Engineering Assessment(s)
 - Event X Assessment Plan
 - Event X Assessment Results
 - Event X Demonstration

OA Enterprise Common Engineering Nodes View



"The road ahead .."

	2006	2007	2008	2009	2010	2011
Activities Plan: Quarterly IPR	▲ IPR	▲ IPR	▲ IPR	▲ IPR	▲ IPR	▲ IPR
Bi Annual Events	▲ Event	▲ Event	▲ Event	▲ Event	▲ Event	▲ Event
Event/Task						
Prioritization (Notional) Planning						
Development/Integration	→ IPV 6 Integration Demo	→ DIB Integration Demo	→ BSN Integration Demo	→ LB SBT Demo	→ Land Based IFC Demo	→ JTRS Integration Demo
Execute/Assess						
Report/Demo (Alignment)						
With other Joint And Navy Experiments	JEFEX 06	JTFEX 06	Silent Hammer 07			
Where possible and feasible Government Collaboration	PEO C4I/SPAWAR PEO IWS/NAVSEA	Trident Warrior 06 Sea Viking 06	MIT APL IAT	Weekly Telecons		
	PEO T/NAVAIR PEO SUBS/NUWC	RDA CHENG RCIP NAVSEA 62 VWL				

Engineering thru Spiral Experimentation Strategy
 Directly supports the Navy Enterprise OA Transformational Roadmap

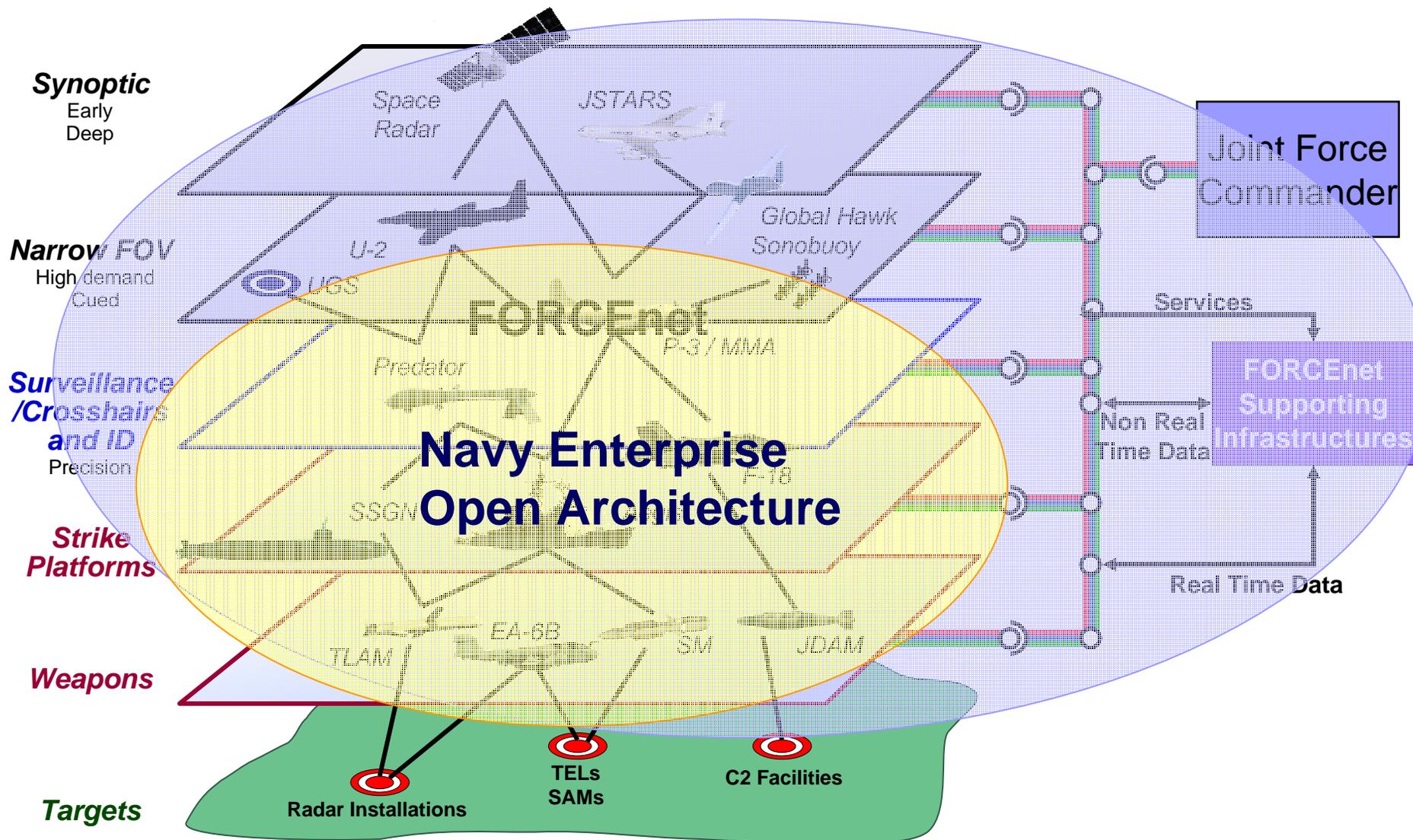
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Operational Context View



The Net-Centric Lattice Strike Example

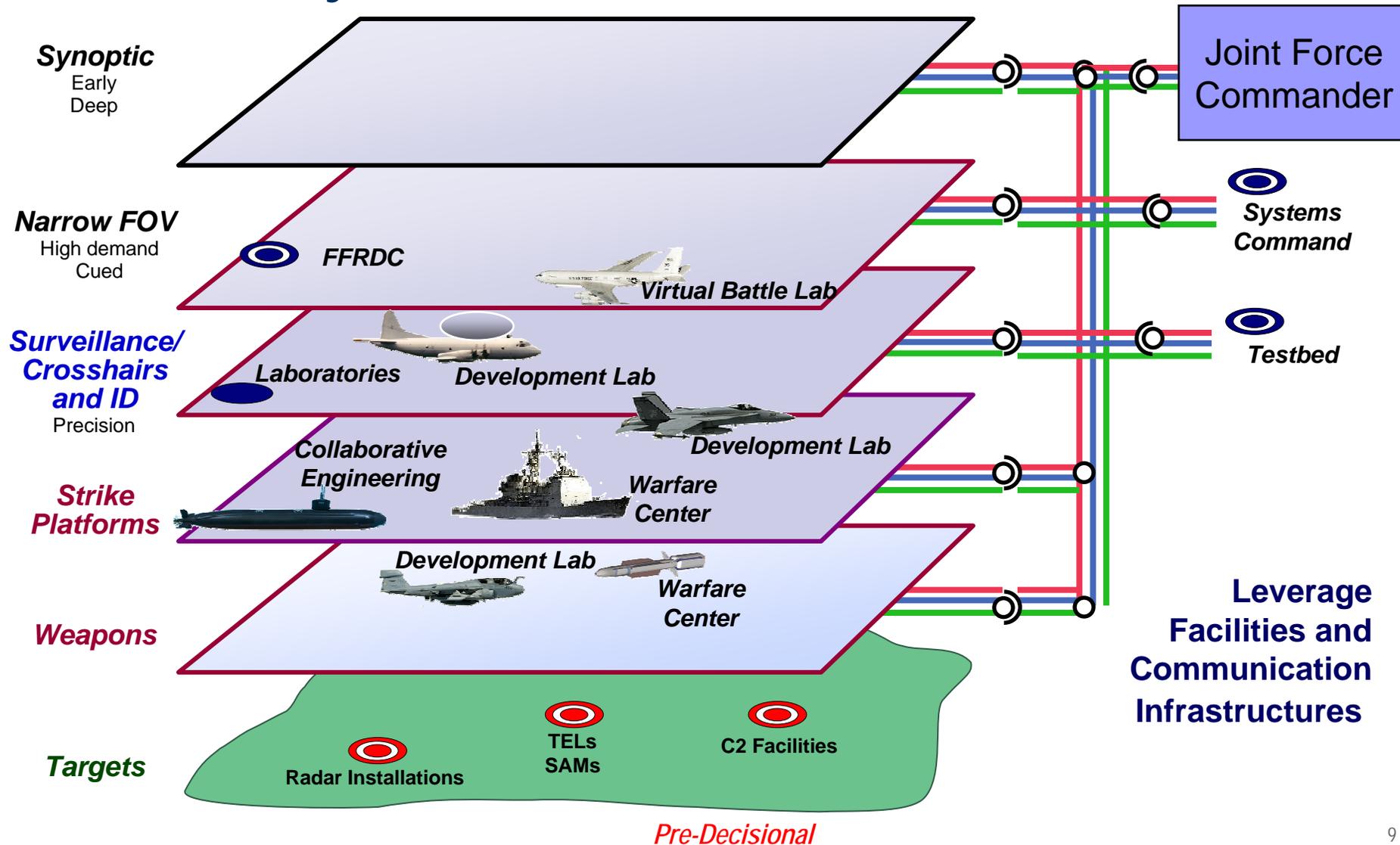


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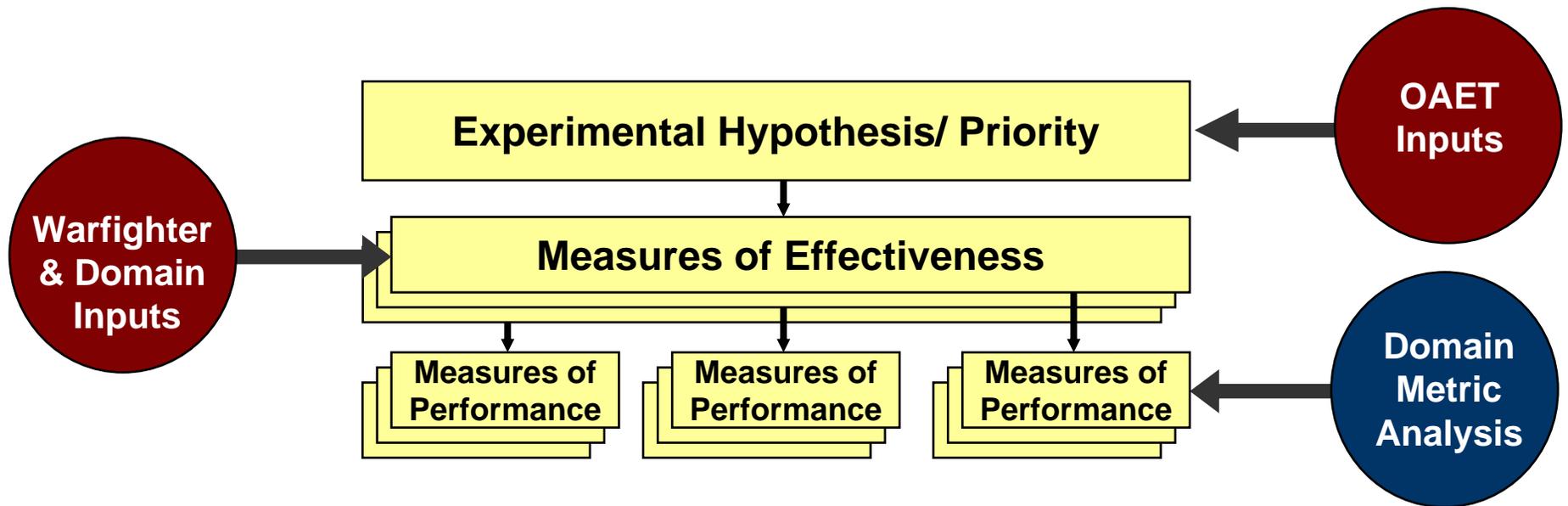
Land-based Test Sites Connectivity View

The Net-Centric Lattice Strike Example





Methodology for Measuring OA/FN Risk Reduction Experimentation

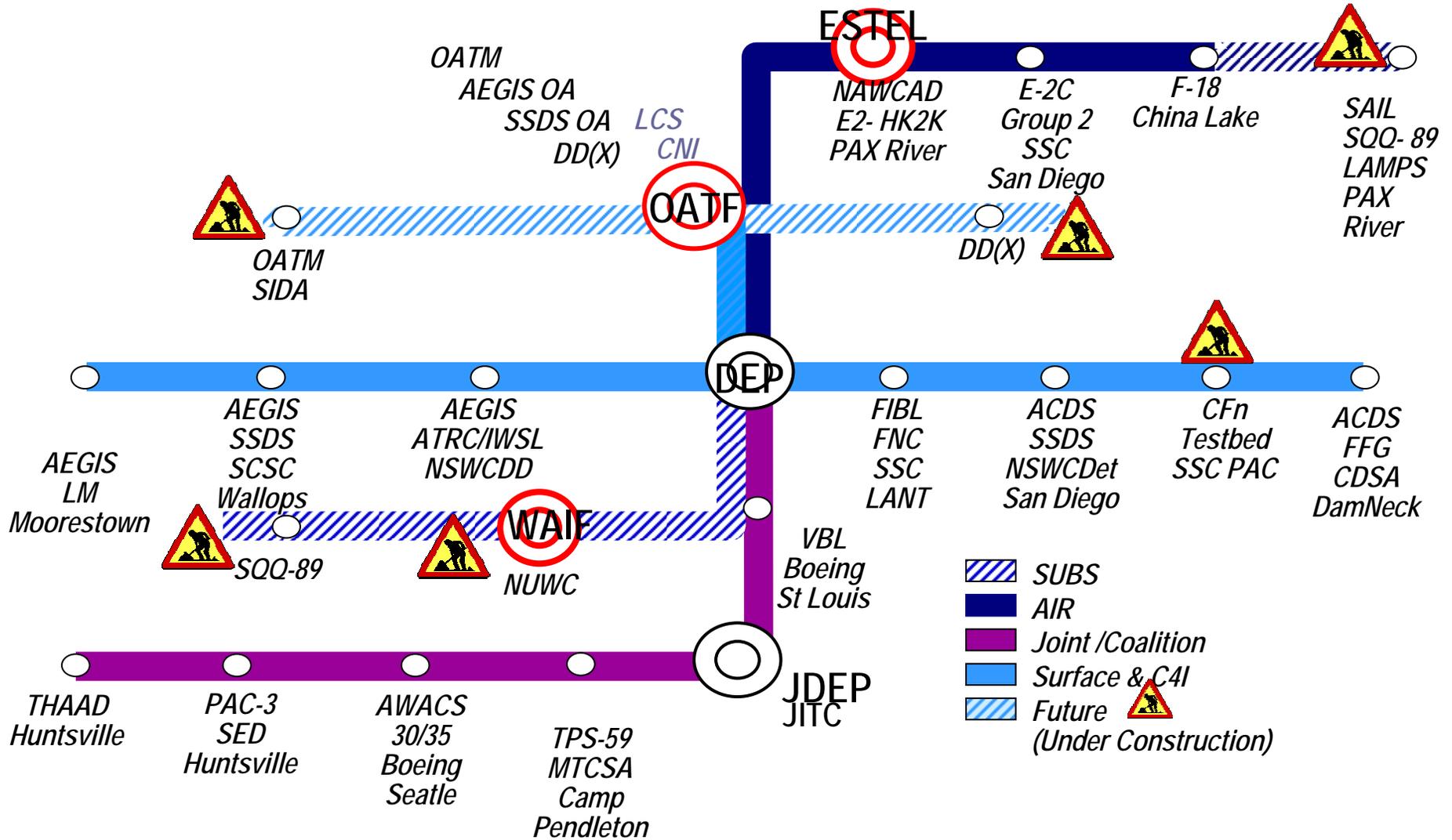


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OA Enterprise Common Engineering Nodes View



Connect Government & Industry Engineering Nodes

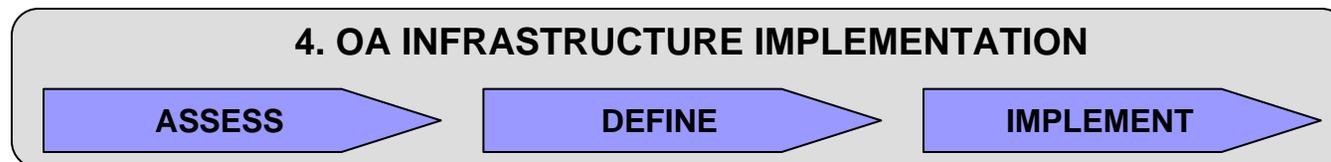
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Standards and Architectures



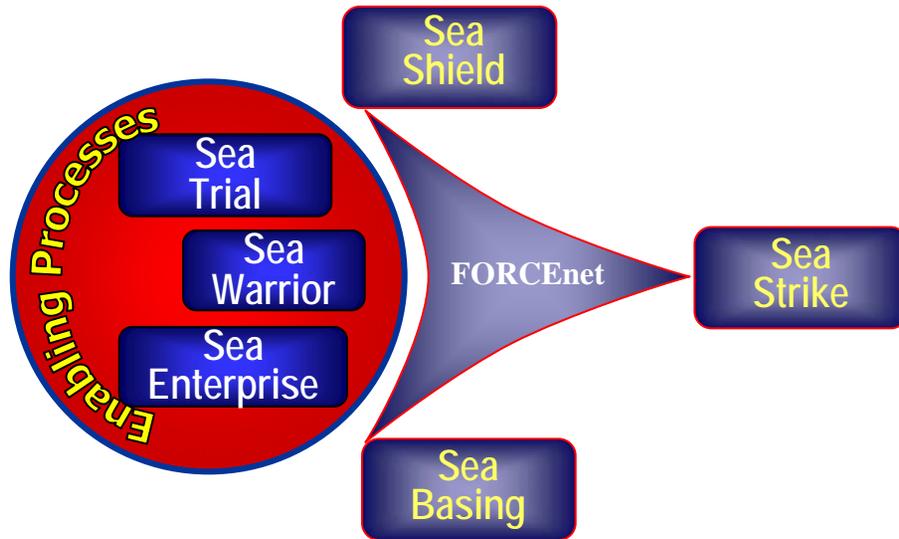
- The OAET is coordinating activities concerning standards and architectures
- Standards Reconciliation and Streamlining
 - SPAWAR and NAVSEA continue to work on integrating the NESI and OACE
 - The Network Centric Operations Industry Consortium, other consortia, and individual contractors have been solicited to conduct concurrent reviews
- Development of Enterprise Architecture Guidance
 - PEO C4I is leading the OAET Architecture Working Group (AWG) with academia and other participants (PEOs) including the other services and DoD
 - The AWG is clarifying the precepts and processes which lead to more effective understanding and use of Open Architecture
 - The AWG is developing recommendations for architecture frameworks and tools that can be used to support Naval OA
 - The AWG may also look at emerging technology and architecture trends that will improve future system implementation models



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Summary



- To transform the Force...
...we must transform
the way we do business
 - Contracting
 - Communications
 - Cooperation
 - Reuse Existing Components

- Naval Enterprise Open Architecture is more than just a technical engineering change
- Requires a collaborative efforts between the Government and Industry, and across Naval Domains

