



System Engineering Department 4.1

23 May 2012

Presented to:
Industry Day 2012

Presented by:
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TACAIR EW IPT Site Lead



System Engineering Department Mission / Vision



The Systems Engineering Competency provides Naval Aviation's acquisition decision makers with the support necessary to guarantee that aircraft, weapons, and other systems delivered to our Sailors and Marines are operationally suitable and effective and will be ready for the fight whenever called upon. It provides expertise across a broad spectrum of disciplines, beginning with systems conception and continuing throughout the life cycle, to ensure maximum levels of technical performance while maintaining acceptable levels of risk and affordability.

*The people of the Systems Engineering Competency are **recognized experts** within their varied fields, **critical to program success**, and actively sought after by Program Management to optimize their systems and maximize probability of success.*

*Our Systems Engineers are authoritative voices within the Naval Air Systems Command **when evaluating the technical completeness of system designs** ranging from minor modifications to complex, major acquisition programs.*



AIR 4.1 Systems Engineering

Vision

Naval Aviation systems will meet the needs and expectations of fleet users through rigorous application of Systems Engineering principles, and the people and processes of AIR-4.1's broad range of technical disciplines will enable Program Managers to better balance competing priorities of cost, performance, and schedule.

Missions

Conduct Air Platform Systems Engineering

Directly support PEOs and PMs in managing requirements and lead technical activities of acquisition programs for Naval Aviation systems.

Execute Systems Level Engineering Functions

Provide people and processes to ensure proper application of a broad range of specialized systems level engineering disciplines across the NAVAIR organization.

Perform Software / Systems / SoS Integration

Provide leadership and technical expertise for the acquisition, development, and sustainment of software for Naval Aviation's aircraft and weapons systems and Systems Integration Laboratories.

Acquisition Documentation

Requirements Management

Early Systems Engineering MDD to MS B

Developmental Planning MDD to MS A

Lead Systems Integrators

Technical Leadership/Platform CHENG

System Engineering Design Reviews

Systems Engineering Tools/Methods

Platform In-Service Engineering Site Leads

System Safety

Mass Properties

Manufacturing and Quality

Combat Survivability and Vulnerability

Reliability and Maintainability

Electromagnetic Effects

Anti-Tamper

Air / Ship Integration

Critical Safety Item Management

Systems Engineering Policy, Process, Training and Education

Software Development / Integration

Software Acquisition Management

Software Support Activities

Systems Integration Labs and Tools

System of Systems Integration

System of System Simulation

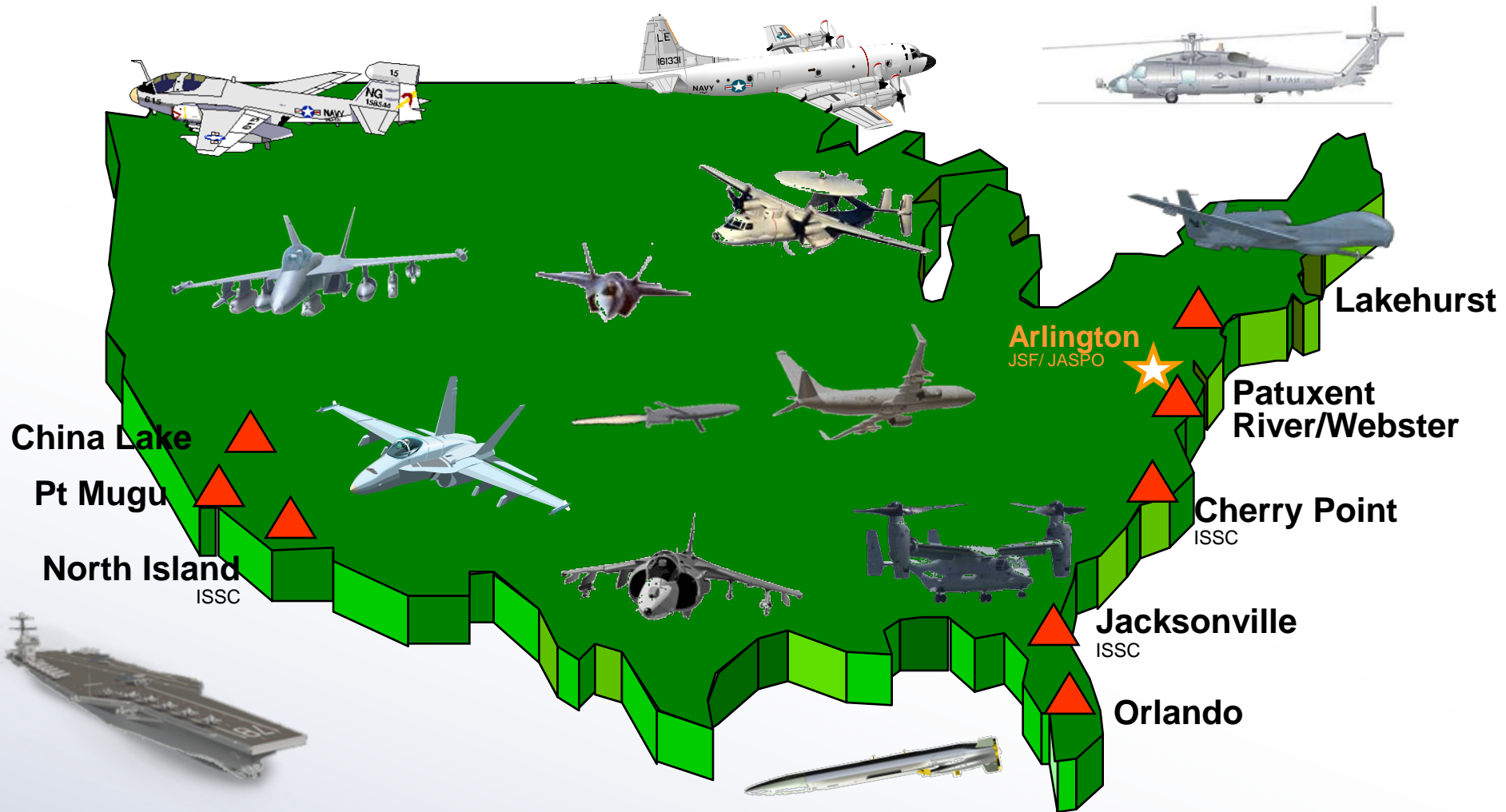
Mission Systems Engineering and Architecture Development

Systems Interoperability





AIR 4.1 National * Sites & Staffing *



**Engineering
Concepts into Reality**

**4.1 Total Workforce:
Over 2,000**



AEA IPT Contracts



AEA IPT Contract w/ L-3



Description Summary of Program Requirements

Provide Engineering, Technical and Programmatic services including design, development, integration, test and evaluation of Operational Flight Programs (OFPs), for various EW products within the Airborne Electronic Attack (AEA) Integrated Product Team (IPT) located at Point Mugu, California.

Provide systems and in-service engineering test support, intelligence data analysis, sensor engineering, EW development support, and threat analysis in support of various programs.

Various Programs supported to include, EA-6B, EA-18G, E-2C, MH-60R, BAMS, P-8A, Unmanned Air Systems, flight simulators, training systems, other advanced electronic attack derivatives and initiatives, including Foreign Military Sales (FMS), etc.

Acquisition Strategy

- Single Award
- Full and Open (prior Sole Source)

Period of Performance

- 3 Years
- No Options

Milestones

3rd Qtr FY 12



RFP Release

4th Qtr FY 13



Contract Award

Point of Contact

NAWCWD Public Affairs Office
 Code 750000D
 1 Administration Circle
 China Lake, CA 93555-6100
CHLK-WDSiteContent@navy.mil

Funding

- \$10M - \$50M
- RDT&E, APN, Production, O&M

Incumbent Contractor Current Contract Number

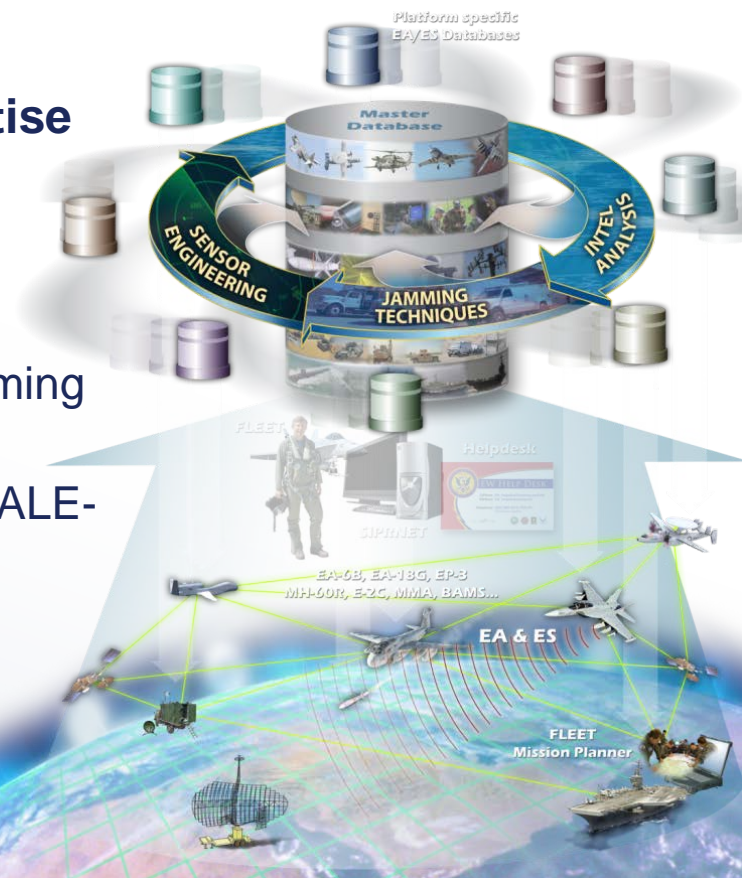
- L-3 Services
- N68936-08-D-0027



Additional Information



- Higher level clearance required
- Fleet Liaison engineers stations at:
 - Naval Air Station Whidbey Island, Washington
 - Nellis Air Force Base, Nevada
 - Includes Pre-Deployment Briefings
- Radar and Communication Jamming Expertise
- EW Intelligence Analysis
 - Modernized Integrated Database (MIDB)
 - Electronic Intelligence Parametric List (EPL)
 - Electronic Warfare Integration & Reprogramming (EWIR) databases
 - Generic Area Limitation Environment-Lite (GALE-Lite)
- Sensor Engineering
- JMPS EW Mission Planning Environment
- EW Modeling and Simulation





AEA IPT Contract w/ CTI



Description Summary of Program Requirements

Provide Engineering, Technical and Programmatic Services for the various programs. Efforts include design, develop, integrate, test and distribute all Operational Flight Programs (OFPs) and Block Upgrades to the Fleet training devices, plus the development of communications jamming and receiver simulations.

These requirements will be provided within the AEA IPT located at the Naval Air Warfare Center, Weapons Division, Point Mugu, California.

Programs supported: EA-6B, EA-18G, and other advanced electronic attack derivatives.

Acquisition Strategy

- Single Award
- Full and Open (prior Sole Source)
 - SeaPort-e

Period of Performance

- 5 Years
- No Options

Milestones

4th Qtr FY 12



RFP Release

2nd Qtr FY 14



Contract Award

Point of Contact

NAWCWD Public Affairs Office
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Funding

- \$10M - \$50M
- RDT&E, APN, Production, O&M

Incumbent Contractor Current Contract Number

- Chesapeake Technology International Corp.
- N68936-09-D-0017



Additional Information



- **Requires extensive knowledge of aircraft computer architecture and software**
 - EA-6B ICAP III Maintenance and Flight Simulators
 - USQ-113 Communications Jamming and Receiver Simulations

- **Work will be performed at:**
 - Marine Corps Air Station (MCAS) Cherry Point, North Carolina
 - NAWCWD Point Mugu, California
 - NAWCWD China Lake, California
 - NAWC Aircraft Division (NAWCAD) Patuxent River, Maryland
 - Naval Air Station (NAS) Whidbey Island, Washington
 - MCAS Yuma, Arizona
 - MCAS Iwakuni, Japan



AEA IPT Contract w/ TBD



Description Summary of Program Requirements

The contractor shall fabricate, test and deliver production AN/ALQ-231(v)1 Intrepid Tiger Pod Assemblies (per NAVAIR drawing package), associated hardware, and incidental engineering activities as required in individual task orders.

The contractor shall perform engineering and technical services to modify or develop variants of AN/ALQ-231(v)1 Assemblies and piece parts in order to counter new threats and to support new airborne platform integration (USMC F/A-18C/D, UH-1 and AH-1).

Intrepid Tiger is a Rapid Deployment Capability.

Acquisition Strategy

- Single Award
- Full and Open
 - SeaPort-e

Period of Performance

- 5 Years
- No Options

Milestones

3rd Qtr FY 12



RFP
Release

1st Qtr FY 13



Contract
Award

Point of Contact

NAWCWD Public Affairs Office
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1 Administration Circle
China Lake, CA 93555-6100
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Funding

- \$5M - \$10M
- RDT&E, APN, Production, O&M

Incumbent Contractor Current Contract Number

- N/A



Additional Information



- Precision Electronic Warfare (EW) pod designed to provide USMC fixed, and rotary wing aircraft with a distributed, adaptable and net-centric Airborne Electronic Attack (AEA) capability to counter current and future target sets
 - Communications jammer
 - Future capability upgrades include battle field electronic surveillance, communications relay and network nodal extension
- Establishes first networked hardware and EW services architecture (EWSA) in support of Marine Air-Ground Task Force EW 2020 vision



AEA IPT Contract w/ TBD



Description Summary of Program Requirements

The objective of this order is to support the development of Information Technology solutions required for new EW technologies and techniques to support intelligence analysis of emerging threats, document those threats, find, acquire or develop technologies that will provide a theoretical defense or countering action.

In addition, to provide systems and software engineering for the continual development of EW Battle Management and live and virtual EW environment efforts; specifically the development, integration, test and evaluation of a network centric Electronic Attack System of Systems (SoS) Service Oriented Architecture (SOA).

Includes development and installation of new servers, software and database architectures.

Acquisition Strategy

- Single Award
- GSA GWAC Alliant Program
 - Government Wide Acquisition Contract

Period of Performance

- 5 Years
- No Options

Milestones

3rd Qtr FY 12



RFP
Release

4th Qtr FY 12



Contract
Award

Point of Contact

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Funding

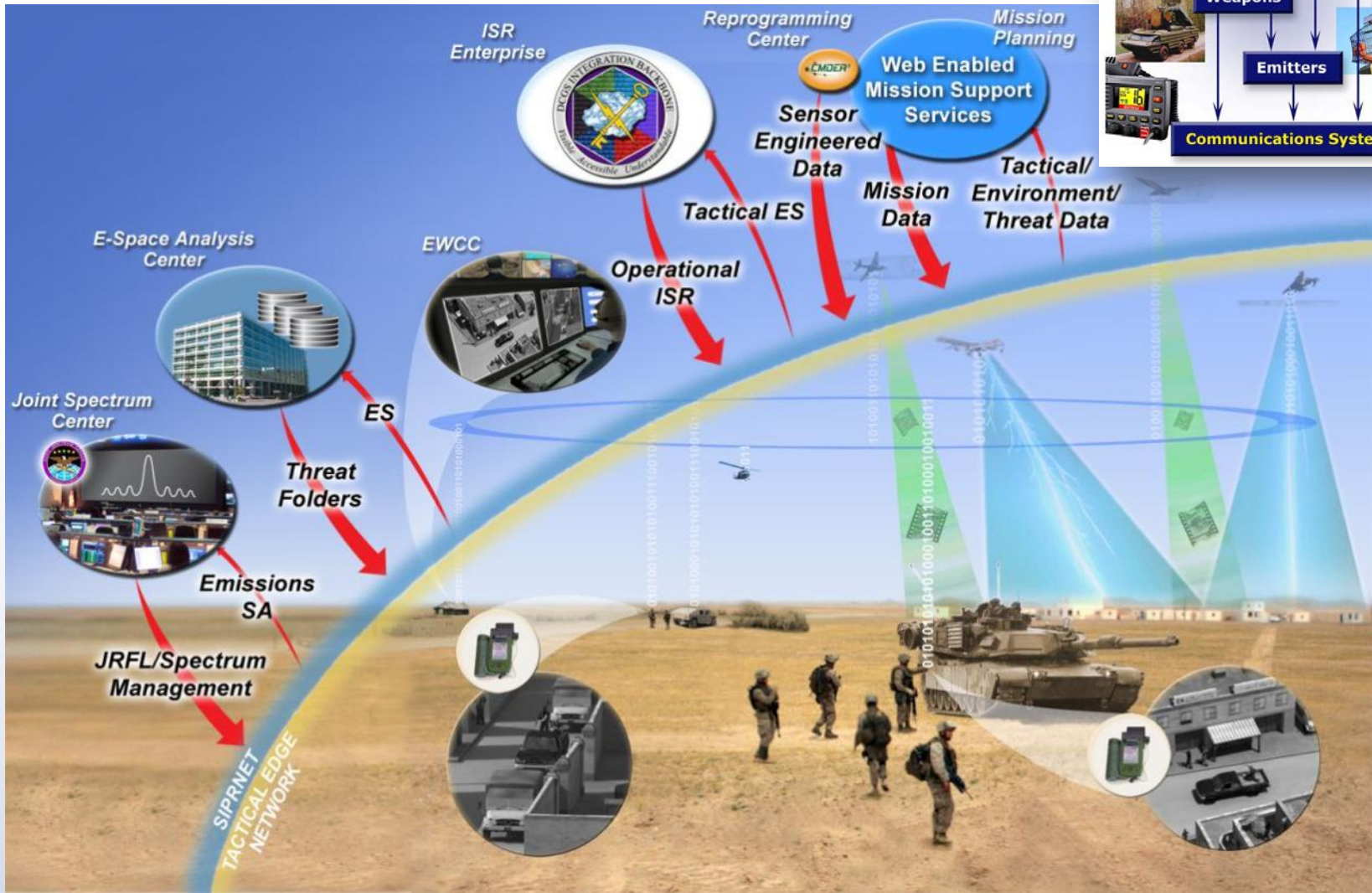
- \$10M - \$50M
- RDT&E, APN, Production, O&M

Incumbent Contractor Current Contract Number

- N/A



EW Services Architecture



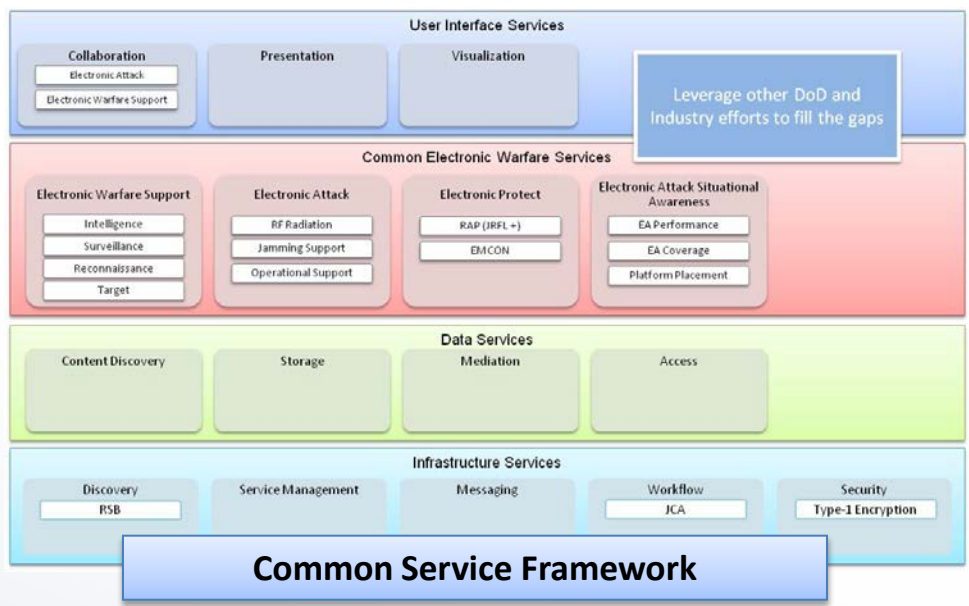
SOA makes data assets Visible, Accessible and Understandable



Additional Information - 2



Common Data Sources and Formats



Common Service Framework

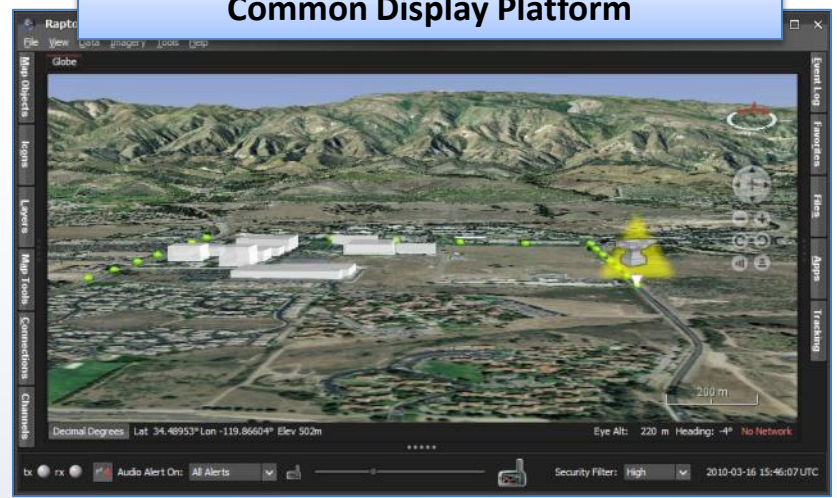
EWBM Group

- EWBM is the result of capabilities working together
 - Electronic Warfare
 - Spectrum Management Operations
 - Signals Intelligence
- EWBM effort should result in a “contract” between spectrum reliant organizations agreement on common service architecture and common display platform

Results

- Common framework must be government owned
- Government entity must have oversight
- Promote configuration management vice standards
- Gives industry a sandbox to develop in
- Allows Government and Industry to focus on delivering capability

Common Display Platform





TACAIR EW IPT Contract w/ NGPRB

Description Summary of Program Requirements

NG is to provide engineering and technical support services to the Tactical Aircraft (TACAIR) Electronic Warfare (EW) Integrated Product Team (IPT) at Naval Air Warfare Center Weapons Division (NAVAIR WD), Point Mugu, CA. Services include to provide engineering services that support the design, development, evaluation, and deployment of TACAIR strike and assault EW Systems/Suites. The TACAIR EW Systems/Suites are deployed on FMS, Navy and Marine Corps tactical aircrafts such as F-16, F/A-18, AV-8B, P-3, EA-6B, and various types/models/series of helicopters. NG will also provide engineering services that support the design, development, evaluation, and deployment of EW SE Systems that work with the AN/USM-670 EW Test Set, the AN/USM-713 Swept Frequency Measurement Test Set and the Handheld Radar Simulator (HRS) Test Set. All three test sets are used to test EW and avionics systems and their associated Radio Frequency (RF) transmission lines in Navy, Air Force, Army, and FMS operational aircraft at the Organizational Level (O-Level) of maintenance.

Acquisition Strategy

- Single Award
- Seaport

Period of Performance

- 1 Base year
- 4 Option years

Milestones

1st Qtr FY 13



RFP
Release

3rd Qtr FY 13



Contract
Award

Point of Contact

NAWCWD Public Affairs Office
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China Lake, CA 93555-6100
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Funding

- \$10M - \$50M
- RDT&E, APN, FMS, O&M

Incumbent Contractor Current Contract Number

- NGPRB
- N00178-04-D-4091



TACAIR EW IPT Contract w/ LM

Description Summary of Program Requirements

LM is to provide engineering and technical support services to the Tactical Aircraft (TACAIR) Electronic Warfare (EW) Integrated Product Team (IPT) at Naval Air Warfare Center Weapons Division (NAVAIR WD), Point Mugu, CA. Services include software engineering in support of tools for the development and test of EW system User Data Files (UDFs) and Mission Data Files (MDFs). Technical support includes developing, improving and incorporating security provisioning (SP) into the EW Software Support Facility (EWSSF) toolset maintained at the Electronic Combat Simulation and Evaluation Laboratory (ECSEL). The EWSSF includes actual EW avionics hardware housed in test benches, threat simulators, commercial test equipment, and proven and evolving software tools hosted on networked personal computers. The software tools provide a Graphic User Interface to the operator to process data, store results in a relational database, and communicate with commercial test equipment to develop and test EW system UDFs and/or MDFs.

Acquisition Strategy

- Single Award
- Seaport

Period of Performance

- 1 Base Year
- 4 Option years

Milestones

3rd Qtr FY 12



RFP
Release

1st Qtr FY 13



Contract
Award

Point of Contact

NAWCWD Public Affairs Office
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Funding

- \$10M - \$50M
- RDT&E, APN, FMS, O&M

Incumbent Contractor Current Contract Number

- LM
- N00178-04-D-4079



Questions and Answers Information Exchange

***The reason we're here!
Raise your hand and we'll bring
you a microphone***