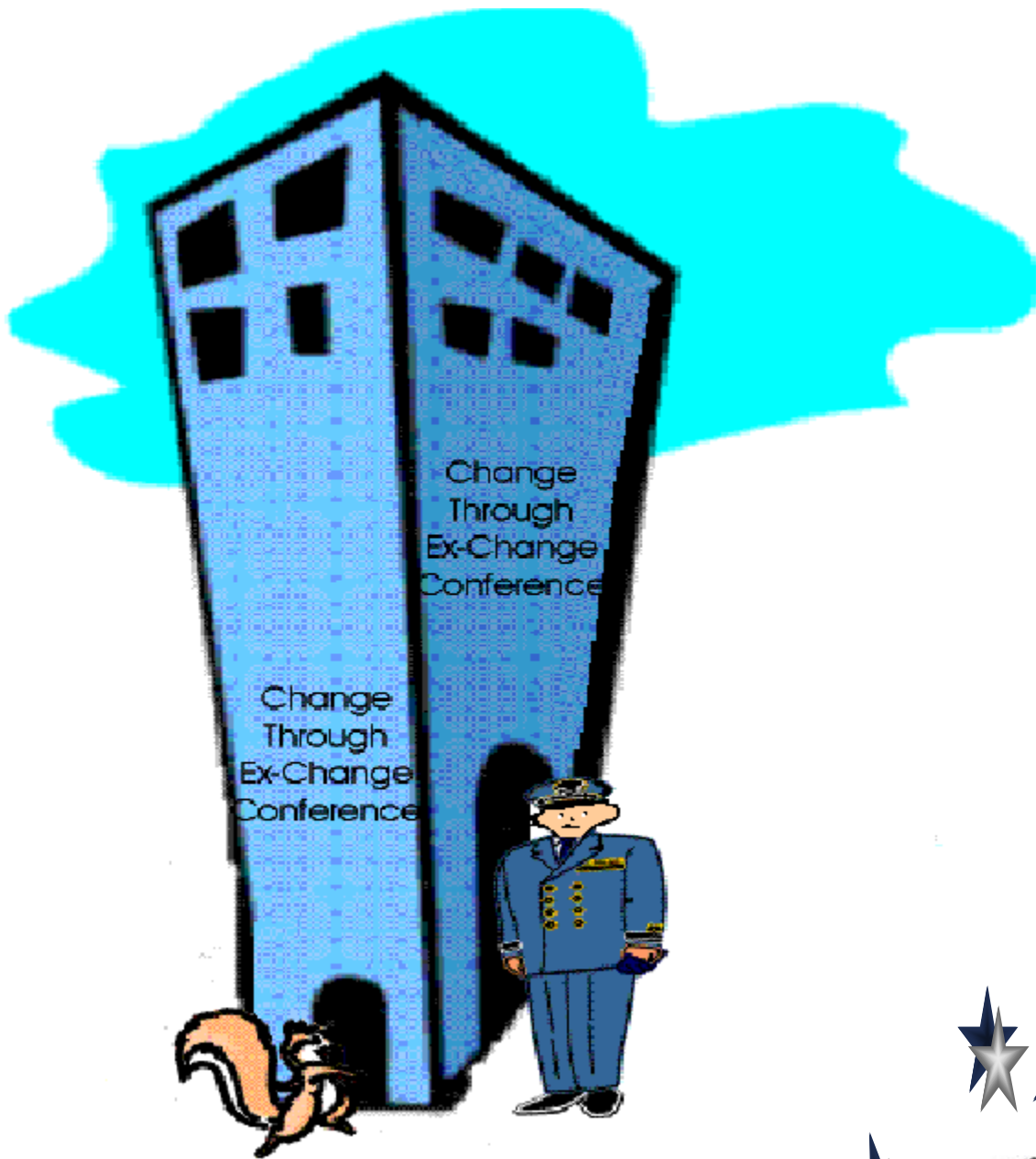


# Change Through Ex-Change Innovations



*Monday, 4 May 1998  
Crystal City Marriott, Crystal City, VA*



## Introduction

*Ideas are contagious.* Change is a never ending process, and we must use every vehicle possible to consistently communicate the new vision and strategies that encompass change. The new science of memes, or thoughts, says that memes evolve by natural selection in a process similar to that of genes in evolutionary biology. Effective, potent ideas are ones that out-propagate other ideas, ones best at self-replication.

That's the concept behind Change Through Ex-Change. DoN has good processes in place to share successes and lessons learned, but Change Through Ex-Change focuses on the ideas and innovations that our programs have applied, are working, and that they feel might be beneficial for other programs to try. While Change Through Ex-Change does provide visibility of our program successes, its focus is to provide a structured, creative environment to promote the ex-change of innovative ideas across all programs, across all ACAT levels.

DoN programs were asked to submit two ideas, approaches, or process innovations that could be of assistance to other Navy -- Marine Corps programs. This document is a compilation of these innovative ideas, which are diverse in content and come from across the systems Commands.

The Change Through Ex-Change Conference, held on 4 May 1998 in conjunction with Acquisition Reform Week, is a formal process to accelerate the exchange of these innovative ideas. During the conference, four of these ideas are formally briefed out, followed by an opportunity for questions. During the Conference, free time is allotted for one-on-one exchanges between participants. At the end of the Conference, each attendee is charged with informally continuing the exchange started in this formal setting.

The 144 innovative ideas in this volume have been placed into 73 categories. The categories are alphabetically listed in the Table of Contents. On the first page of each category there is a list titles for the innovative ideas in the category. A complete listing of innovative ideas by title is in an Index at the end of the document. These innovative ideas are also available in DoD Deskbook, over the Internet [<http://www.acq-ref.navy.mil>] and on disk and CD from the Acquisition Reform Office, (703) 602-0263 or 5506.

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- ◆ Contractor investment for new military acquisition and upgrade programs
- ◆ D7 Bulldozers Exchange Programs
- ◆ Enhanced GBU-24E/B Laser Guided Hard Target Penetrator
- ◆ Government/Contractor Software Procurement Reconciliation
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# Acquisition Reform Week

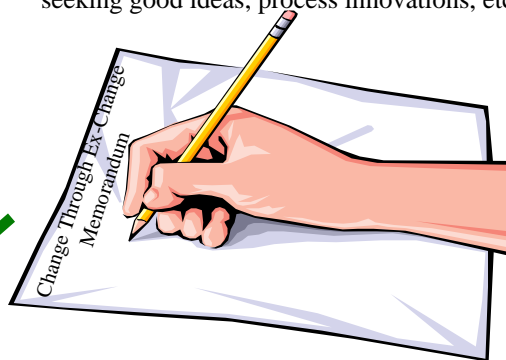
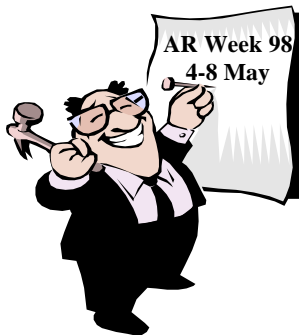
## Change Through Ex-Change Conference

### Ex-Change Process

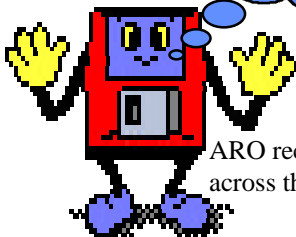
23 Feb 1998

Acquisition Reform Week 98 Memo by the  
Honorable John W. Douglass

Memo to all ACAT programs and activities  
seeking good ideas, process innovations, etc.



Data  
Gathering  
Form

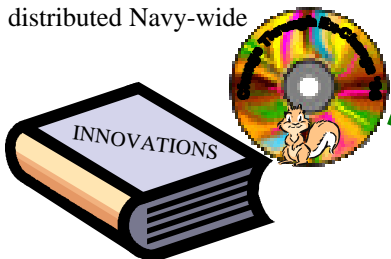


ARO receives data from  
across the Navy-Marine Corps

All of the innovations are reviewed  
-4 are selected to be formally  
briefed during the conference



All 144 innovations are  
pulled together into a  
single document and  
distributed Navy-wide

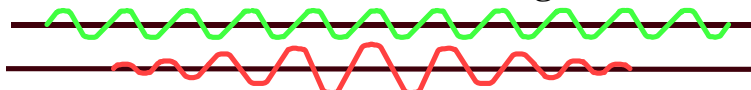


Change Through  
Ex-Change Conference  
4 May 1998



[HTTP://www.acq-ref.navy.mil](http://www.acq-ref.navy.mil)

Continuous Ex-Change



## ACQUISITION OVERSIGHT

- ◆ Performance Measurement and Assistance Program (PMAP). A Process for Performance Measurement in Acquisition

⇒ (Acquisition Oversight) -- Performance Measurement and Assistance Program (PMAP). A Process for Performance Measurement in Acquisition

NAVFAC

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***What is the name of your program?***

Performance Measurement and Assistance Program Team

***Give a description of this idea and how it fits in the program:***

NAVFACENGCOM has restructured its Performance Management Reviews (PMRs) from being “Compliance Oriented” as directed by ASN and leads the Navy in Restructuring Acquisition Oversight. The Naval Facilities Engineering Command PMAP Focus Team has introduced a new program of acquisition oversight that moves away from the primary focus of regulatory/statutory compliance reviews and into a multi-faceted program utilizing results-based, self-assessment metrics to measure the quality of contracting operations and determine customer satisfaction. This program utilizes an approach emphasizing prevention rather than detection and is intended to empower the contracting activity to make continuous improvements in their process.

***How has this new improvement been applied?***

PMAP was rolled-out 1 October 1997. NAVFAC’s new approach is designed to measure and assess the full spectrum of a contracting office’s efforts. The new program is based upon an approach designed for measuring organizational performance with a view toward helping ensure customer satisfaction. The program is comprised of five different parts or perspectives which make up what is called a “Balanced Scorecard”. These five perspectives are entitled: Learning and Growth (can we continue to improve and create value?), Customer (how do our customers see us?), Associate (how do our employees see us?), Internal (what must we excel at?), and Financial (how do we look to the tax payers?). These five perspectives comprise the Balanced Scorecard and are used to measure the performance of a contracting office through surveys, on-site assessments, validation of an office’s Quality Management Plan (QMP) (a detailed procedure outlining an office’s contracting processes) and annual benchmarking of all contracting offices for the purposes of determining a “best-in-class” standing and identifying areas for office improvement. Finally, feedback is provided to the contracting office which differentiates between superior performance and areas targeted for improvement based upon the QMP and input from management, employees and customers.

***How is it innovative and creative?***

- Focuses on assistance while meeting statutory and other mandates.
- Goes beyond old PMRs! Expanded scope with “Balanced Scorecard” approach to Performance Measurement!
- Considers Management, Associate, and Customer perspectives in addition to contract file assessments.
- Empowers activity to make improvements.
- Places importance on prevention rather than detection.
- Emphasizes “Service to Customers”.
- Concentrates on “Overall Health” of the acquisition organization not just regulatory and statutory

- contract compliance's.
- Provides for "Sharing of Best Practices & Lessons Learned."

***What were the results and lessons learned in developing this improvement?***

With the implementation of the PMAP, NAVFACENGCOM will realize the tangible results of a significant annual dollar savings relative to the overall cost of the corporate program as well as a considerable time savings previously expended on lengthy on-site reviews of over 150 world-wide offices.

The NAVFAC "Balanced Scorecard" approach has streamlined the contracting oversight and review process. Time is saved by considerably shortening lengthy reviews and a significant cost saving has been realized. This reinvention not only measures the overall "health" of a contracting office but also provides a vehicle for sharing best practices and a "highway" for continuous improvement in the contracting process. The Command is now cutting red tape, putting customers first, empowering employees to get results and maximizing cost savings in the process.

▼ ▼  
**ACQUISITION PLAN**

- ◆ Effective Establishment and Prioritization of Acquiring Aviation Support Equipment to Meet Fleet Use Requirements

⇒ **(Acquisition Plan) -- Effective Establishment and Prioritization of Acquiring Aviation Support Equipment to Meet Fleet Use Requirements**

NAVAIR

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Fax: (301) 757-6862/6902

E-mail address: gultnieksmc.nimitz@navair.navy.mil

***What is the name of your program?***

Aviation Support Equipment Acquisition Prioritization Program

***Give a description of this idea and how it fits in the program:***

The Aviation Support Equipment Program Managers, NAVICP, the resource sponsors and fleet type commanders participate in a week-long conference to prioritize the fleet support equipment requirements in order to properly prioritize funding lines for the following fiscal year.

***How is it innovative and creative?***

This process directly couples the requirements generation process into the acquisition plan by bringing the major stakeholders together in one forum to negotiate the effective division of APN-7 funding for the following fiscal year. This way, the acquisition plan is thus bought into by both the program office and the fleet.

***How has this new improvement been applied?***

This Aviation Support Equipment APN-7 Conference has been held for the past few years.

***What were the results and lessons learned in developing this improvement?***

Aviation support equipment is procured in accordance with priorities previously established by the fleet users, so most fleet users can be content with the solutions.

***What other information would help another program evaluate its applicability towards their program?***

Evaluate using a conference -type forum to bring stakeholders together to properly prioritize funding to effectively meet requirements.

▼ ▼

## ACQUISITION STREAMLINING

- ◆ A Streamlined Engineering Change Proposal (ECP)
- ◆ Acquisition Streamlining
- ◆ Advanced Processing Build (APB) Process (Change is a fact of life)
- ◆ Aircraft Requirement, Modification and Maintenance Model: Acquisition Guide
- ◆ Broad based application of alpha acquisition to a major EMD effort for the Tactical Tomahawk
- ◆ Contractor investment for new military acquisition and upgrade programs
- ◆ D7 Bulldozers Exchange Program
- ◆ Enhanced GBU-24E/B Laser Guided hard Target Penetrator
- ◆ Government/Contractor Software Procurement Reconciliation
- ◆ NAWCTSD Acquisition Guide
- ◆ Non-Developmental Item acquisition; Use of IPTs; SPI; CAIV
- ◆ Remanufacturing

⇒ **(Acquisition Streamlining) -- A Streamlined Engineering Change Proposal (ECP)**

NAVAIR (PEO-CU)

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***What program are you with?***

Standoff Missile Systems Program, PMA-258

***Give a description of this idea and how it fits in the program:***

We're in the process of upgrading the Harpoon Cruise Missile which requires a Class I ECP. Our idea is to streamline this ECP and only incorporate it in those items that are necessary to execute the ECP.

***How is it innovative and creative?***

We'll still execute the intent of an ECP without including excess information that is not required, saving the program time and money.

***How has this new improvement been applied?***

We're in the process of developing the streamlined ECP.

***What were the results and lessons learned in developing this improvement?***

The final results are yet to be determined. The estimates are that we'll save the program approximately \$50,000.

---

⇒ **(Acquisition Streamlining) -- Acquisition Streamlining**

NAVAIR

**Terry Witte**

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***What is the name of your program?***

ANVIS-9 NIGHT VISION GOGGLES

***Give a description of this idea and how it fits in the program:***

Replacement of the high cost, low reliability, Cats Eye Night Vision Goggles with the relatively low cost, high reliability, NDI ANVIS-9 Night Vision Goggles. Acquisition reform cycle time reduction initiative was implemented prior to milestone one and total cost of ownership initiative was used effectively to expedite these assets to the fleet in a fraction of the time used for prior acquisitions, resulting in a 20 million dollar reduction in life cycle costs and higher fleet readiness.

***How is it innovative and creative?***

Use of NDI, cycle time reduction, and reduction of life cycle costs through acquisition reform/acquisition streamlining.

***How has this new improvement been applied?***

Replacement of Cats Eye Night Vision Goggles with ANVIS-9 Night Vision Goggles.

***What were the results and lessons learned in developing this improvement?***

A reduction of 20 million in life cycle costs was obtained.

***What other information would help another program evaluate its applicability towards their program?***

A review of O&S Costs with a view of replacing high cost drivers with lower cost NDI components.

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⇒ **(Acquisition Streamlining) -- Advanced Processing Build (APB) Process (Change is a fact of life.)**

NAVSEA

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***What is the name of your program?***

Acoustic Rapid COTS Insertion (A-RCI)



***Give a description of this idea and how it fits in the program:***

Establish process to address changing requirements with out adverse impact to the “formal ACAT Program”. APBs collect mature advanced development product and incorporates them into the A-RCI Program on an annual basis.

***How is it innovative and creative?***

Responding to new or changing program requirements in the dynamic Navy environment has “Engineering Changed” programs to death. Institutionalizing a rapid change process outside of the A-RCI Program allows A-RCI to maintain it’s cost, schedule and performance baseline. At the same time advanced development products will no longer sit “on the shelf” waiting for the next development to provide yesterday’s improvements.

***How has this new improvement been applied?***

The first APB has been sea tested and is being integrated into A-RCI. Testing results have been excellent.

***What were the results and lessons learned in developing this improvement?***

Results are excellent. Lesson learned is no one organization has complete insight.

***What other information would help another program evaluate its applicability towards their program?***

Any programs that can benefit from current advanced development products need to establish an APB Process.

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⇒ **(Acquisition Streamlining) -- Aircraft Requirement, Modification and Maintenance Model: Acquisition Guide**

Naval Audit Service

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***What is the name of your program?***

Aircraft Requirement, Modification, and Maintenance Model

***Give a description of this idea and how it fits in the program:***

The Model is an acquisition strategy that advocates a team approach to systematically integrate and simultaneously apply all necessary disciplines and processes to redefining a weapon system’s operational requirements and restructuring of its modification and maintenance programs. The goal is to efficiently and more effectively manage program cost, schedule, and performance risks while satisfying users’ operational requirements.

***How is it innovative and creative?***

A key feature of the Model is that it streamlines the number of aircraft actually needed for mission performance by downsizing the active aircraft inventory to cover essential requirements. Another feature is that it increases the number of aircraft to be upgraded and maintained concurrently. A third feature (and incentive) of the Model is that it restructures a weapon system’s program schedules and budgets, allowing for the redistribution of cost avoidance’s/savings to satisfy a program manager’s underfunded and unfunded requirements.

***How has this new improvement been applied?***

The immediate customer for the Model was the Department of Navy’s Program Executive Officer, Tactical Aircraft Programs (F-14 Program Manager (PMA-241)). Using this concept, the F-14 aircraft community achieved substantial cost avoidance, reinvested dollars saved to satisfy unfunded/underfunded program needs, and minimized aircraft downtime. Although the Model was developed for the F-14 aircraft, it has application (with appropriate revisions) to other aircraft or procurement programs as well. The Model is currently being applied to the F/A-18

and EA-6B Aircraft Modification and Maintenance Programs and being validated during ongoing audits by the Naval Audit Service.

***What were the results and lessons learned in developing this improvement?***

The "Aircraft Requirement, Modification, and Maintenance Model" represents a continued commitment within the DoN to implement, where appropriate, economies and efficiencies in the spirit of recent acquisition reform initiatives. The features of the Model require that improvements to aircraft be limited to those needed to meet operational requirements, and that managers should consider aircraft installation schedules that are cost effective and minimize aircraft downtime. For example, while each aircraft upgrade may have a separate and distinct purpose, economies and efficiencies can be gained by reducing the number of times the Navy brings an aircraft into the depot and tears down the airframe to install modifications and upgrades as well as perform scheduled maintenance. The key is to restructure the modification and maintenance schedules to increase the number of aircraft upgraded and/or maintained concurrently, and provide funding needed to execute the redesigned program.

***What other information would help another program evaluate its applicability towards their program?***

Establishing and implementing a successful requirement and concurrency model for the modification and maintenance of weapon systems is based on a structural approach that encompasses the following six phases:

- Integrated Team Formulation Phase
- Up-front Planning Phase
- Requirements Definition Phase
- Inventory Management Phase
- Validation Review Phase

Each of these phases is supported (integrated) by joint working groups led by the Program Manager of the weapon system. Within each phase, clearly defined management and technical processes must be applied to achieve improvements in weapon system program requirements, concurrency, cost, downtime, and performance.

The Model containing these phases has been documented and published by the Naval Audit Service in a booklet titled, "Aircraft Requirement, Modification, and Maintenance Model" dated 12 February 1998. Requests for copies of the Model should be addressed to either: Naval Audit Office, Director of Production, P.O. Box 9, Jacksonville, FL 32212; or Program Executive Officer (PMA-241), Tactical Aircraft Programs, 47123 Buse Rd., Unit #452, Patuxent River, MD 20670-1547.

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**⇒ (Acquisition Streamlining) -- Broad based application of alpha acquisition to a major EMD effort for the Tactical Tomahawk**

NAVAIR (PEO-CU)

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Tomahawk All Up Round Program

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***What program are you with?***

Tomahawk all up Round Program, PMA-280

***Give a description of this idea and how it fits in the program.***

The current Tomahawk missile system was developed in the late 1970's as a strategic weapon and incremental/evolutionary changes being incorporated over the years. The Tactical Tomahawk is a program jointly conceived by the Navy and Raytheon to satisfy emerging requirements from the warfighters. It is an innovative

approach utilizing performance specs, agile manufacturing techniques and incorporates features in the missile to make it more suitable in the tactical environment, simplify the missile design and manufacture, and reduce the unit production costs by 50%. In order to accomplish this, the Navy pursued acquisition reform/alpha contracting initiatives which shifted a number of the existing paradigms, including:

- Section 845
- CAIV
- Performance Specification
- Streamlined Mil-Specs and Standards
- Streamlined CDRLs
- Electronic Data Exchange
- COTS/NDI
- Contractor/Government IPTs
- Collocation with industry
- Multi-year contracting

***How is it innovative and creative?***

All of the initiatives are being incorporated in an existing program as part of a restructure of the Tomahawk Baseline IV effort. The aims of the program are to improve the missile systems tactical capability and to fund the EMD out of the existing program funding stream by drastically cutting the production cost. This will allow the Navy to obtain more new missiles with enhanced capability for the same total program funding.

***How has this new improvement been applied?***

Application of these initiatives to the EMD contract include:

- Performance spec replacing several detail segment specs
- Trading key performance parameters for cost (range, launch depth)
- Eliminating all but four Mil Specs and Standards
- Reducing over a 100+ CDRLs to 26
- Establishing an electronic data system, Contractor Integrated Technical Information System (CITIS), for electronic access to all program documents
- Joint contractor and government IPTs
- Planned collocation of key program personnel at the contractors facility
- Emphasis on utilizing COTS/NDI software and hardware to reduce cost

***What were the results and lessons learned in developing this improvement?***

Although the contract has not been let for the EMD of Tactical Tomahawk it has provided useful information and insight into streamlining other development efforts within the Program Office.

***What other information would help another program evaluate its applicability towards their program?***

Lessons learned of how to structure an EMD effort of this magnitude (ACAT-1C), which initiatives promised the best value (return on investment) and which initiatives did not (e.g. final contract type adopted was not a Section 845 due to questions regarding its efficacy for a non prototype development effort).

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⇒ **(Acquisition Streamlining) -- Contractor investment for new military acquisition and upgrade programs**

NAVAIR (PEO-CU)

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***What program are you with?***

Standoff Missile Systems Program, PMA-258.

***Give a description of this idea and how it fits in the program:***

Have the contractor who is producing or upgrading the item invest some of their own money in the development and testing whenever there is an FMS market available for them to recoup their investment.

***How is it innovating and creative?***

In the past, the government usually paid for all new procurements and upgrades. With the decreasing number of dollars available for new programs, it saves money for the government to have the contractor invest in the non-recurring costs.

***How has this new improvement been applied?***

The primary contractor for the Harpoon Block II upgrade is going to fund all of the development costs as well as part of the T&E.

***What were the results and lessons learned in developing this improvement?***

Total savings to the government is estimated at \$60M. Whenever there is an FMS market available to the prime contractor where they have the ability to recoup their investment, the government should take advantage of and require the contractor to, fund part of the program.

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⇒ **(Acquisition Streamlining) -- D7 Bulldozers Exchange Program**

MARCOR

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***What is the name of your program?***

Exchange Equipment Program

***Give a description of this idea and how it fits in the program:***

We have established a unique equipment exchange program with industry that will provide the engineer community with new and remanufactured engineer equipment. The engineer equipment exchange program trades equipment above what is rated within the Marine Corps and equipment that has been replaced by the acquisition of

new equipment for new/remanufactured equipment. The unique aspect of the exchange program is that no appropriated funds are used to acquire new or remanufactured equipment. The exchange program therefore allows us to acquire new or improved items of equipment in an era when our procurement budgets do not otherwise support such acquisitions.

***How is it innovative and creative?***

Prior to initiation of the equipment exchange program, our engineer equipment would be turned into the Defense Reutilization and Marketing Office (DRMO) for disposal and the Marine Corps would not receive anything for it. We have discovered that there is a market for our used equipment and that we can take advantage of that market and modernize our engineer equipment.

***How has this new improvement been applied?***

The first exchange traded D8 bulldozers to Caterpillar, Inc., in exchange for remanufacturing a quantity of our older D7 bulldozers. This initial program netted the Marine Corps \$2M worth of equipment remanufacturing at no cost. This program has shown to be such a huge success that we are presently negotiating follow on exchanges. We have received an initial offer from Caterpillar for \$8M in exchange for some of our other engineer equipment that we no longer rate. This \$8M will be applied to acquiring new/remanufactured items of engineer equipment.

***What were the results and lessons learned in developing this improvement?***

Engineer equipment can be remanufactured for approximately 35% of the cost to procure a replacement item and extends the service life of the equipment an additional 10-15 years.

***What other information would help another program evaluate its applicability towards their program?***

The engineer equipment exchanges will net the Marine Corps over \$12M in either new or remanufactured equipment. This equipment will improve readiness and modernize our fleet of aging equipment. The engineer equipment exchange program was borne out of necessity and plays a vital role in our master plan to modernize our fleet of aging equipment. Additionally, the equipment exchange program is a process innovation that reengineered the disposal process for engineer equipment and pays huge dividends without the use of appropriated funds. The engineer equipment exchange program provides substantial financial gains, is a new way to manage the equipment inventory, and improves readiness.

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⇒ **(Acquisition Streamlining) -- Enhanced GBU-24E/B Laser Guided Hard Target Penetrator**

NAVAIR

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***What is the name of your program?***

GBU-24 Laser Guided Hard Target Penetrator

***Give a description of this program and how it fits in the program:***

During a review of Desert Storm lessons learned the fleet commanders cited the lack of an accurate hard target penetrator as their number one weapons system concern. In response to the fleet's requirement the Navy fielded a variant of the USAF's GBU-24 hard target penetrator weapon system in January 1994 as a Rapid Development Capability initiative. This weapon variant was designated GBU-24B/B. The GBU-24B/B provides significant capabilities but technology advances offer opportunity for added improvement. The need exists to capture these advances which enable the GBU-24 Hard Target Penetrator to remember the last laser spot location and continue to navigate in the event laser designation is lost. In addition, this modification could reduce the air crew workload and collateral damage from miss-hits as a result of loss of laser designation. Texas Instruments, Inc. (now Raytheon Texas Instruments Systems (RTIS) ) developed a modification to the GBU-24B/B which integrates a

Global Positioning System, a Ring Laser Gyro Inertial Measurement Unit and a MIL-STD-1760 standard bus interface into the existing GBU-24 weapon. Several prototypes were successfully demonstrated by the USN and USAF and following this demonstration, the USN Weapons Operators Advisory Group identified the "enhanced" GBU-24 as a "Top Ten" acquisition priority urgently required by the fleet. A formal requirement to field the modified GBU-24 was established by Chief of Naval Operations in June 1997.

***How is it innovative and creative?***

The acquisition strategy and development approach is truly unique. The current GBU-24 Hard Target Penetrator now in production will be modified and procured via a performance based Engineering Change Proposal. The contractor has agreed to guarantee the "enhanced" GBU-24 performance. If the modified weapons don't meet performance thresholds, the contractor will make whatever modifications are necessary for them to do so.

***How has this new improvement been applied?***

The new variant is designated GBU-24E/B and will use the existing logistic support system of the GBU-24B/B with no changes to the maintenance or supply support philosophy. It will have the same 1760 interface as the JDAM. A greatly increased capability will be provided to the fleet with minimum required testing and program risk.

***What were the results and lessons learned in developing this improvement?***

Following the USN decision to go ahead with this modification, the USAF quickly followed suit, making this a "Joint" effort. This is truly a quick response, government/contractor team success story. We are planning to go from receipt of requirement to IOC in 22 months!

***What other information would help another program evaluate its applicability towards their program?***

This initiative forces customer-driven decision making. Given a finite amount of resources, the question is "Where are our priorities best placed?" The initial answer has to come from the warfighter because it's the warfighter's life that's on the line. That's a very strong incentive to choose wisely. So in response to a Fleet prioritization of an accurate hard target penetrator as the number one weapons system concern, we are fielding an enhanced GBU-24 that will continue to navigate to the target despite loss of laser designation. This was not brought forward by the program manager and the various oversight staffs in a vacuum. It was first bounced against the Operators Advisory Group where it broke out as a top user priority. This capability is being fielded because it was really needed, not because of a love for new technology. The GBU-24B/B was fielded via a Rapid Development Capability initiative. The enhanced GBU-24 will go from requirement to production in a matter of months through a performance-based ECP with performance guarantee. Time is money. In this instance the Program Manager stressed the system (in response to customer pull) with bold approaches to speed and cost.

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**⇒ (Acquisition Streamlining) -- Government/Contractor Software Procurement Reconciliation**

NAVAIR (PEO-CU)

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***What is the name of your program?***

Theater Mission Planning Center (TMPC) Program

***Give a description of this idea and how it fits in the program:***

This approach reconciles the intrinsic need of the government to have its requirements met while meeting the acquisition reform credo of "don't tell the contractor how to do the work". In essence what we have done is ask the contractor to tell us how they want us to work with them in terms of their software development process by adapting the Software Development Plan (SDP) and other deliverables to this purpose.

In the past we have blindly required the contractor to conform to a MIL-STD-(1679/2167/498/etc) development approach that is sub optimal by today's standards. Instead, we are allowing the contractor to work to best commercial practices while wrapping that process in an event driven 498 management framework. By doing this we have achieved the dual goal of 1) having the contractor performing with higher productivity and shorter schedules, and 2) maintaining a development environment familiar to the government side of the team, i.e., an event driven model.

The SDP is the primary document in this approach. Normally the SDP is a reflection of how the contractor intends to meet the requirements of MIL-STD-498. In this case we ask the contractor how he intends to do the work for us without any constraints other than the required content of deliverable documents and software builds. The SDP then becomes the means of mapping the contractor's development process to the government's management process. The SDP also, in some cases, will map deliverable content to DD-1423s.

***How is it innovative and creative?***

The approach uses the existing MIL-STD-498 software management structure to achieve an event driven program without compromising the contractor's process autonomy.

***How has this new improvement been applied?***

We have applied this approach in two software acquisition contracts as part of the Tomahawk Baseline IV program.

***What were the results and lessons learned in developing this improvement?***

The primary lesson learned is that it is possible to divorce contract for; what we want, when we want it, and for how much money without telling the contractor how to build it.

***What other information would help another program evaluate its applicability towards their program?***

The only things to be careful of in this approach are contractor proprietary practices explaining things properly to the government side of the team. The contractor will have a natural resistance to conveying company practices to the government in any form so it is important to approach the SDP from the standpoint of the contractor telling the government how they want to do the job. It's their choice not ours. Our contractors have bought in to this because it is in their best interest to not have the government telling them how to do their job.

The government team typically wants to tell the contractor how to do the job. In order for this to change, the team has to buy into the notion that things really haven't changed. We still specify what we want, when we want it, and negotiate how much we want to pay for it. These have always been the important elements of acquisition. The idea that we know more about software development than the contractor is more often than not misplaced hubris.

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⇒ **(Acquisition Streamlining) – NAWCTSD Acquisition Guide**

NAVAIR

**Rick Neff**

Acquisition Guide, 1.0AP

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***What is the name of your program?***

NAWCTSD Acquisition Guide

***Give a description of this idea and how it fits in the program:***

This program is an intranet and internet based system, which provides a macro to micro look at the overall integrated acquisition process. The program shows NAWCTSD internal acquisition processes mapped into an acquisition roadmap based on the DoD 5000 series documents weapon system acquisition process.

***How is it innovative and creative?***

The process flow charts of the acquisition process show the relationships between each step in the process. The information is developed by and for cross-functional subject matter experts.

The program is open to the world. Contractors are better prepared to do business with us. Sponsors are better informed as to our capabilities of how we will execute their programs.

The program contains information and accesses information from many non-NAWCTSD sources. This includes Army, Air Force, Department of Energy, OSD, SPAWAR, NAVAIR, FAA and others. Since many organizations are in the acquisition business and are dealing with acquisition reform, we seek out the best and most creative content.

Information contained within portions of the program have resulted in the cancellation of paper based acquisition related instructions which were difficult to maintain.

***How has this new improvement been applied?***

By making it easily accessible and widely available on both our internal intranet and on our external internet site.

***What were the results and lessons learned in developing this improvement?***

The results have been:

- An increase in use of standardized processes, documents, and forms.
- Better awareness by our employees as to how we as a corporation do business.
- New employees in particular are able to come up to speed quicker with less formal training.
- Better awareness by our contractors as to how we do business.
- Better awareness by our sponsors as to how we do business.
- A reduction in printing costs associated with printing paper instructions.
- An increase in currency of information. Information, which used to take months to revise in our instructions, can now be updated in days.
- A reduction in irrelevant information.

Lessons learned include:

- Develop acquisition process information from a cross-functional IPT/IPPD perspective.
- The more process information you share with sponsors and contractors the better.
- Don't just provide an encyclopedia of information, but provide and show how each process relates to the others.
- Keep the information current.

***What other information would help another program evaluate its applicability towards their program?***

See the NAWCTSD Acquisition Guide at <http://www.ntsc.navy.mil/refer/acqguide/acqguide.htm>



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⇒ (Acquisition Streamlining) -- Non-Developmental Item Acquisition; Use of IPTs; SPI; CAIV

NAVAIR

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***What is the name of your program?***

PRC-90 Survival Radio And URT-33 Replacement Program

***Give a description of this idea and how it fits in the program:***

In order to replace five existing radios and beacons with two state of the art systems, we initiated a best value, non-developmental item, competition with performance specifications, which is part of the specifications and standards reform initiative. PMA-202 formed an IPT, another initiative, comprised of not only government members but also representative of the privatized NAWC Indianapolis, thereby creating a win-win relationship by leveraging a new industry partner. This is an approved Abbreviated Acquisition Program that considers contractor past performance and systemic performance improvements. When the contract is awarded, we will pursue implementing single process initiatives to reap additional economies and efficiencies for our program. In the spirit of CAIV initiative, we had a period of open discussions with industry and provided all interested bidders with a draft request for proposal. Their comments were used to amend the system performance requirements to achieve the most optimum system at the lowest total cost of ownership to the Fleet, our customer.

***What were the results and lessons learned in developing this improvement?***

Lower life cycle costs, lower procurement costs, lower cycle time.

***What other information would help another program evaluate its applicability towards their program?***

All programs should review the principles listed above for applicability to their programs. Review of request for proposal and system performance specifications for applicability to other programs.

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⇒ (Acquisition Streamlining) -- Remanufacturing

MARCOR

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***What is the name of your program?***

Generator Exchange program

***Give a description of this idea and how it fits in the program:***

Based on our past success with the equipment exchange program, we have expanded the scope of the program to include generators. We have been offered \$1.2M for approximately 1,000 old generators that were initially scheduled to go to DRMO due to them being replaced with the new Tactical Quiet Generators (TQGs).

This \$1.2M will be applied to remanufacturing approximately 36 of our current 100KW generators and extend their service life for another 10 to 15 years. Once all of the tactical generators are replaced with the TQGs, the generator exchanges will net an additional \$1.5M-\$2.0M that will be applied to remanufacturing/procurement of electrical equipment.

***How is it innovative and creative?***

This \$1.2M will be applied to remanufacturing approximately 36 of our current 100KW generators and extend their service life for another 10 to 15 years.

***How has this new improvement been applied?***

We have been offered \$1.2M for approximately 1,000 old generators that were initially scheduled to go to DRMO due to them being replaced with the new TQGs.

***What were the results and lessons learned in developing this improvement?***

The engineer equipment exchanges will net the Marine Corps over \$12M in either new or remanufactured equipment. This equipment will improve readiness and modernize our fleet of aging equipment. The engineer equipment exchange program was borne out of necessity and plays a vital role in our master plan to modernize our fleet of aging equipment. Additionally, the equipment exchange program is a process innovation that reengineered the disposal process for engineer equipment and pays huge dividends without the use of appropriated funds. The engineer equipment exchange program provides substantial financial gains, is a new way to manage the equipment inventory, and improves readiness.

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## AWARD FEE CONTRACTS

- ◆ Award Fee performance element based upon CAIV
- ◆ Single solicitation with multiple awards for four regions, utilizing a Two Phased “Best Value” Design-Build process that will include oral proposals and minimal submittals

⇒ **(Award Fee Contracts) -- Award Fee performance element based upon CAIV**

NAVAIR

**Ken Caniglia**

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***What is the name of your program?***

United States Marine Corps (USMC) Light/Attack Helicopter Upgrades Program (PMA-276)

***Give a description of this idea and how it fits in the program:***

CAIV is one of the four performance elements to be measured in determining H-1 Upgrade Program award fees to the contractor. The CAIV parametrics are as follows:

- Provide DTC plan and 2 DTC reports.
- Establish DTC targets for all IPTs.
- Demonstrate control of DTC targets within all IPTs with the objective of reducing recurring production and O&S costs.
- Demonstrate tracking system for flyaway cost and O&S cost.
- Plan supplier outreach activities.
- Conduct one DTC review.
- Develop and demonstrate CAIV savings tracking system. System should include backup documentation for specific areas where savings were achieved.

***How is it innovative and creative?***

The linking of award fees to CAIV performance continues to give the contractor the incentive to give CAIV the higher level management visibility that it needs to succeed. The idea was initially innovative and creative because it combined two acquisition reform initiatives to provide LCC savings. Innovation and creativity continue as the CAIV initiatives and trade studies continue to drive down the LCC of the weapon system. As the EMD contract matures, the CAIV parametrics are refined to maintain the impetus on cost reduction and trade-offs.

***How has this new improvement been applied?***

As noted above, CAIV has been incorporated as an evaluation element to determine the contractor’s award fee.

***What were the results and lessons learned in developing this improvement?***

The final outcome of this improvement is yet to be determined, but indications are that it will turn out to be a good pairing of acquisition reform ideas. One of the main lessons learned if using this idea, make sure that the contractor and government have the same interpretation of what CAIV is. The best way to do this is to develop a CAIV Plan for documenting both the ground rules and the tracking method for CAIV savings.

***What other information would help another program evaluate its applicability towards their program?***

CAIV White Paper from the Acquisition Reform Office published by Alex Bennet. The White Paper is

available on the AR home page at <http://www.acq-ref.navy.mil>.

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⇒ **(Award Fee Contracts) -- Single solicitation with multiple awards for four regions, utilizing a Two Phased “Best Value” Design-Build process that will include oral proposals and minimal submittals**

NAVFAC

**Michael Howard**

Environmental RAC, ACQ 021

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***What is the name of your program?***

Environmental Remediation Action Contract (RAC), Request for Proposal (RFP). New and improved process for award.

***Give a description of this idea and how it fits in the program:***

The new RAC RFP is an example of a combination of a number of innovative ideas. During Phase I, the field of competition of all proposals received, will be narrowed to a total of three contractors per region. The criteria used in Phase I will include Past Performance/Experience, Financial and Management, Key Personnel, and Small business commitment. These selected few will continue on to Phase Two of the process, utilizing Oral Presentations and Cost/Price Data to select for contract award.

***How is it innovative and creative?***

It is the intent of the Naval Facilities Engineering Command to streamline this solicitation as much as possible. The consolidation of four separate RFPs into a single solicitation is the first step. Others include an industry forum that was held on 6 November 1997, at the Naval Construction Battalion Center. Approximately eighty firms attended, including those that would propose as prime contractors and many small businesses interested in subcontracting possibilities. Contractors were encouraged to indicate their concerns and submit recommendations prior to the conference, and were allowed to continue to do so until the release/publication of the solicitation. A separate e-mail address was established to facilitate contractor submissions. In Naval Facilities Strategic Business Plan, the process used for this solicitation is in line with the goal of participating in, and monitoring innovative acquisition strategies, focusing on reducing costs of contractor selection and product delivery processes.

***How has this new improvement been applied?***

The Environmental clean-up program will extend years into the future and contract support is necessary to attain the goals of that program. It was determined that, in order to save costly efforts by both the government and industry to reprocur four separate contracts, and to assure maximum competition, a single streamlined solicitation process would be developed, taking advantage of acquisition reforms which have occurred since the procurement of the original contract seven years ago.

***What were the results and lessons learned in developing this improvement?***

The industry forum produced the following: It was determined that the use of several “sample problems” in prior solicitations were really “no value added” and that this solicitation would not include them. Reliance would be based on past performance, and verification with DCAA of proposed rates, combined with a cost realism analysis.

***What other information would help another program evaluate its applicability towards their program?***

There are approximately ten national remediation companies that could compete for these contracts. Past experience has shown that approximately seven proposals are received on individual procurements; it is believed that the streamlining initiatives under consideration for this procurement will result in increased competition. Historically, forty to sixty percent of the contract effort on remedial action contracts have been subcontracted; only 27% of this work goes to large business, with the rest being dispersed among small, small disadvantaged, and

woman-owned businesses and historically black colleges and universities and minority institutions. There are also nine current mentor-protégé agreements approved by DoD for the current RAC contracts and more are expected. Thus, there is a large opportunity for other than large businesses to share in the remediation dollars forecast for this effort.

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## BLANKET PURCHASE AGREEMENTS

- ◆ Provide a series of BPAs to provide a broad breadth of expertise and computer hardware readily available DoD/Navy wide through an on-line service

⇒ **(Blanket Purchase Agreements) -- Provide a series of BPAs to provide a broad breadth of expertise and computer hardware readily available DoD/Navy wide through an on-line service**

### SPAWAR

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### *What is the name of your program?*

Information Technology Electronic Commerce (ITEC) Direct - Links BPAs for computer hardware and support services - Tactical Advanced Computers (TAC), Information Technical Support Services (ITSS)

### *Give a description of this idea and how it fits in the program:*

Shortens the procurement process time by having vehicles already in place to meet emerging programmatic needs at a moment's notice. Five BPA's have been awarded for the TAC – Joint Work Station providing DoN-CIO approved and Navy compatible hardware. Seven BPAs are in place with various teaming partners and contain extensive subcontractors. Added to this data base are consultants and industry leaders which will allow maximum flexibility and choices. Each one of these BPAs are available to the ordering community through an integrated process in ITEC Direct.

### *How is it innovative and creative?*

BPAs have already been completed and rates negotiated to allow rapid access to various vendors with a two to three day turn around for the placement of orders. Note: volume is being tracked to allow further discounts. Information Technology Electronic Commerce (ITEC) Direct provides links with the five TAC BPAs and each of the seven IT service BPA holders' homepages. Each vendor provides on-line over the Internet Ordering Guides, pricing, and labor category descriptions. Hardware prices are updated continually to reflect the latest market conditions. The BPA holders are required to maintain a www homepage describing their services. These homepages provide information to potential users on the services available and the pricing of the various services. One BPA holder, SAIC, has gone a step further and set up a "chat room". When a potential user wants to work with SAIC, the potential user goes into SAIC's homepage and beeps the SAIC technical POC informing the SAIC POC that the potential user wants to set up a meeting in the chat room. Then all interested parties (e.g., the SAIC technical POC, the potential user's technical POC, and/or the potential user's ordering officer) meet in this on-line chat room and work on setting up a SOW and any other required documents. The chat room is secured so that only the participants can access the chat room. Once a SOW is agreed upon, then SAIC starts working on their proposal.

### *How has this new improvement been applied?*

Orders have been placed with the various BPA holders for various ITSS requirements and hardware orders. The customers have been highly satisfied with their ability to get their requirements under contract in a timely manner. In the case of SAIC, potential users have taken advantage of the chat room and have been highly satisfied with the quick response and creation of a SOW.

### *What were the results and lessons learned in developing this improvement?*

Results have been positive on the user side. Lessons learned include ways to improve the process in future BPA awards.

***What other information would help another program evaluate its applicability towards their program?***  
All DoD programs are able to utilize the BPAs to obtain their requirements.

▼ ▼  
**BUSINESS PROCESS IMPROVEMENT**

◆ System supported-accelerated business process improvement

⇒ **(Business Process Improvement) -- System supported-accelerated business process improvement**

SPAWAR

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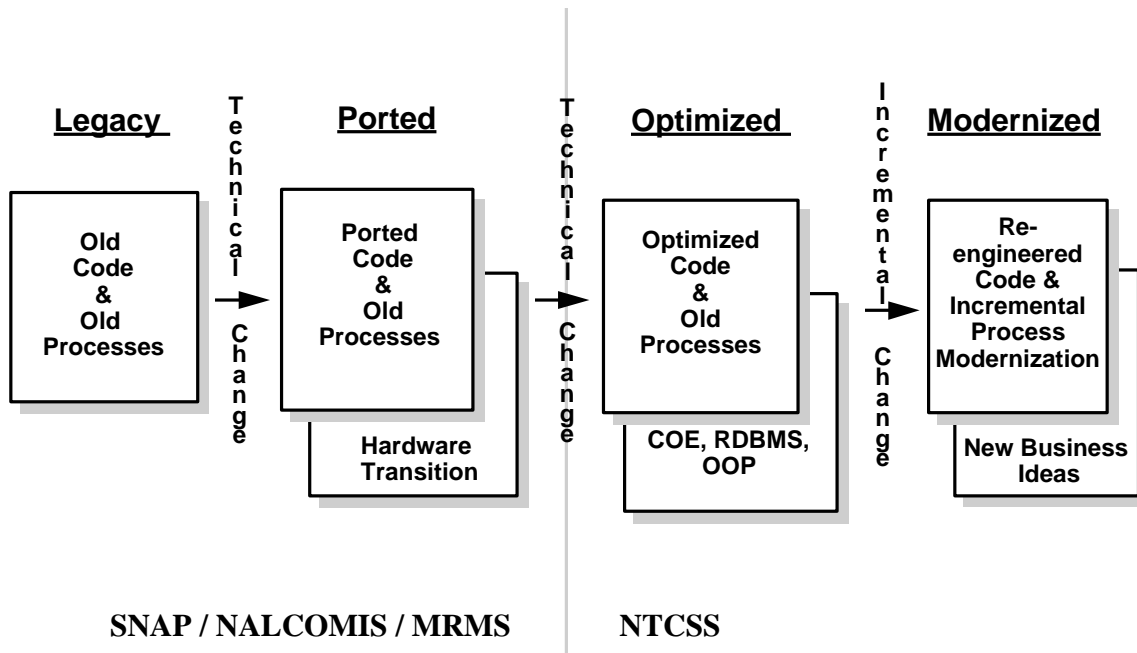
***What is the name of your program?***

Naval Tactical Command Support System (NTCSS)

***Give a description of this idea and how it fits in the program:***

System Supported, Accelerated Business Process Improvement is the last phase in the NTCSS program. Execution of the NTCSS program is evolutionary, starting with the legacy systems on proprietary hardware and software. The legacy systems consist of the Shipboard Non-tactical ADP Program (SNAP), Naval Aviation Logistics Command Management Information System (NALCOMIS) and the Maintenance Requirements Management System (MRMS). The legacy systems are replaced with “state of the shelf” COTS hardware and software operating systems that comply with the Common Operating Environment (COE) standards. The legacy software is “ported” to a form that will run in the new environment, or emulators are used. No change in functionality occurs at this point, however, system speed is greatly increased and hardware maintenance costs are greatly reduced. In the next phase, the software is “optimized”. Optimization consists of rewriting the software in a fourth generation language, introduction of a relational data base management system and use of a graph user interface. Again, no change in functionality occurs, however, operator productivity is increased and software maintenance costs are greatly reduced. At this point, the foundation has been laid for changes in functionality via Business Process Improvements. The following figure is a graphic presentation of the process.





The functional managers are now free to review and improve their business processes and support them with low cost prototypes based on the previously installed NTCSS infrastructure. The NTCSS Program Office enters the process early, reviewing the new business process and prototype, as well as performing the analysis and preparing the documentation required for oversight review by OSD. The Information System required to support the improved business process can now be developed in accordance with DoD 5000.2-R with appropriate SECNAV and OSD oversight. OSD has approved a streamlined approach to Business Process Improvement efforts utilizing a single document called a Business Process Improvement Management Plan.

***How is it innovative and creative?***

This approach allows a large information system development program with many functional users in various communities to perform business process improvements in the shortest time and within an established program of record, which assures executability supportability and oversight. The approach modifies the classic BPI model which requires process owners to reengineer their business processes, analyze the results and then develop an information system that will support the new processes. The NTCSS BPI model provides early relief for users of old legacy systems with a new hardware and software operating environment that speeds up the applications and reduces maintenance costs. The upgraded system provides a foundation for the functional managers to reengineer their business processes and develop low cost, proof of concept, prototypes. The results of the BPI can be measured early on it terms of cost and benefit. The NTCSS Program Office is a partner of the functional managers in BPI efforts and provides the analysis and documentation required to assure the OSD MAISRC that the program is executable and will yield a return on investment appropriate for a BPI.

***How has this new improvement been applied?***

This approach has been used with the Automated Maintenance Environment (AME) effort, which is an improvement to the business processes supported by the Naval Aviation Logistics Command Management System (NALCOMIS). It is a reengineering of the maintenance process used to support the later models of the F/A-18 aircraft with future applicability throughout the Fleet. There were prototypes in the Fleet, which have been used to measure benefits and estimate the future value of AME. The NTCSS Program Office, in partnership with NAVAIRSYSCOM, has performed an analysis of the prototype and delivered a Business Process Improvement Management Plan to OSD. Installation of the first AME systems is scheduled for May or June of this year. In addition, there are several other BPI efforts ongoing and in various stages of maturity.

***What were the results and lessons learned in developing this improvement?***

The initial results of the AME BPI effort are excellent. The program is progressing rapidly with

appropriate OSD visibility. The most important lesson learned is the value of negotiating the format and content of a single document for OSD. The use of Business Process Improvement Management Plans to keep OSD informed of BPI progress has proven to be of great value.

***What other information would help another program evaluate its applicability towards their program?***

Other programs should visit the NTCSS Web Site to review the AME Business Process Improvement Management Plan and the Functional Economic Analysis referenced in it. The plan can be found under the Documents Section of the NTCSS Web Site at <http://c4iweb.spawar.navy.mil/pmw151>.

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CAIV

- ◆ Aggressive up-front plans will expose potential cost overruns before they happen, allowing CAIV to be a proactive and effective process.
- ◆ Maintaining the Navigation Subsystem warfighting requirements while significantly reducing Life Cycle Support costs by reengineering the TRIDENT I and TRIDENT II Navigation subsystems with COTS components.

⇒ (CAIV) -- Aggressive up-front plans will expose potential cost overruns before they happen, allowing CAIV to be a proactive and effective process.

NAVAIR

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***What is the name of your program?***

East Coast Shallow Water Range (ECSWR)

***Give a description of this idea and how it fits in the program:***

Attempting to prevent cost overruns in a historically overrun-prone cost-plus-fee environment, the ECSWR program took several measures to ferret out potential growth areas before irreversible commitments had occurred. Cost-type contract competitions invariably incentivize bidders to minimize risk areas that will, with high probability, cause cost growth. It is a contention of the Program Manager that cost-growth in this environment is caused as much or more by poor contractor baseline planning than by other factors. Bidders will assume optimal yet unrealistic conditions if at all possible to achieve competitive advantage. This works against the government's need to have a robust and realistic baseline plan for managing and tracking progress. The ECSWR attacked this problem with pre-contract and post-contract actions. As an acquisition strategy, the EC-SWR acquisition IPT proceeded with an Alternative Source Selection procedure, termed "Four-Step Source Selection Procedures", defined under DFARS cite 215.613-70, and authorized under FAR cite 15.613, to determine a best value winner. An apparent successful offeror was selected but prior to contract award the Government and the apparent successful offeror came to closure on baseline, terms, and conditions. Thus the competitive environment was maintained while uncertainties, assumptions, and risks were peeled back so the engineering content of the bid was completely clear or clarified. Non-specific or generic requirements in the RFP were better defined as the specifics of the desired government application come into focus. A 30 day negotiation period was allotted to reach final agreement, after which lack of success would mean termination of discussions with the apparent successful offeror and a shift to the runner-up. Post award, the ECSWR team demanded that a sound detailed engineering plan be in place before allowing the contractor to proceed at full speed. As a result of this up-front emphasis on going-in baseline definition, the program not only discovered hidden cost growth items, but determined the program as requested by the fleet was unexecutable without major requirements scope reduction. Working in an IPT environment with the contractor and the fleet, the requirements tradeoffs inherent in the CAIV approach were then made while most of the program resources remained unexpended. While these measures caused a slowdown in the kickoff of the program, the time was used to create a good government-contractor partnership with full understanding and ownership of a team-developed plan emphasizing realism. Formal kickoff of the unthrottled development activity is imminent pending milestone decision authority approval.

***How is it innovative and creative?***

It is innovative in that it chose an acquisition strategy that allowed the baseline to be refined and CAIV tradeoffs made early.

***What were the results and lessons learned in developing this improvement?***

All indications so far indicate that this was successful.

***What other information would help another program evaluate its applicability towards their program?***

This technique applies to any cost type contract.

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**⇒ (CAIV) -- Maintaining the Navigation Subsystem warfighting requirements while significantly reducing Life Cycle Support costs by reengineering the TRIDENT I and TRIDENT II Navigation Subsystems with COTS components**

SSP

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TRIDENT

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***What is the name of your program?***

The TRIDENT Strategic Weapons System (SWS) programs managed by Director, Strategic Systems Programs (SSP).

***Give a description of this idea and how it fits in the program:***

As is the case with most weapons systems, the SWS must operate in a military environment and remain survivable. The Navigation Subsystem is one of five tactical subsystems within the SWS and it must maintain continuous operation throughout a nominal 70-day deterrent patrol. High performance and availability requirements are imposed at the Navigation Subsystem level to meet the system level requirements. Though the nominal submarine patrol environment is benign, the SWS system requirements dictate that the Navigation Subsystem must operate during and after short-term high stress environmental conditions.

These high-level system requirements have not changed in the era of acquisition reform. The challenge SSP has addressed is how to continue to provide navigation equipment and systems which meet the long-term mission duration, performance and availability requirements while applying acquisition reforms associated with the use of COTS.

During operational deployment of the SWS, the Government-industry team for each subsystem endeavors to maintain performance while achieving lower, level annualized costs. These costs become the CAIV. The TRIDENT I and TRIDENT II Navigation Subsystems are highly reliable but fairly complicated subsystems designed in the 1970s and 1980s. Due to the rapid growth in commercial electronics, and especially the personal computer, commercial solutions to military shipboard equipment designs have become appealing. Coupled with a zero growth U.S. defense budget and the Department of Defense mandated acquisition reform initiatives, new shipboard equipment designs have seen increasing application of COTS solutions. In evaluating overall support costs, it became obvious that the systems could be redesigned with recent technology COTS components and the resulting system would be simpler and less costly to maintain. The concern is that as this trend continues to grow, how do we ensure that the equipment's and systems deployed will continue to support the sailor while in a warfighting environment?

This presentation focuses on the systems engineering effort used by the SSP Navigation Subsystem IPT to address this question. Specific discussion addresses the process used in the COTS selection efforts, reports on the evolving design approach, provides test and fleet results, identifies the COTS sparing and long term COTS logistics

support approach, and highlights lessons learned. Cost data is not presented, but the COTS based alterations discussed provided significant life-cycle-cost savings.

***How is it innovative and creative?***

This approach is a complete process of well defined technical disciplines to select and manage COTS components to achieve the capabilities required for warfighting systems while managing the risks. SSP is able to execute this approach within its existing system as it is one of the few organizations within the Government or DoD to have cradle-to-grave responsibility for its systems. When the flexibility exists to trade operational support funds for the reengineering of the system with COTS components, the team can use COTS reengineering to insert the latest technology into the fleet and achieve equal performance at lower cost over the life cycle. The life cycle focus is motivated by the continuing involvement of both the Government program office and contractor members of the team as it is clear to all that they must live with the decisions they make.

***How has this new improvement been applied?***

The backfit of the TRIDENT I Navigation Subsystem configuration provided an opportunity for an infusion of COTS components and open architecture design features to reduce life-cycle subsystem support costs. The flowed down system requirements continued to require the Navigation Subsystem to operate over the entire deterrent patrol while maintaining performance and availability, under both benign and short-term war-fighting conditions. The use of COTS in the Navigation Subsystem continued to require adherence to sound system-engineering principles.

To start the process, the high-level subsystem requirements were revalidated. Once these requirements were verified, the subsystem functional requirements were reviewed to identify areas of potential COTS insertion. To further limit the technical risk while increasing the opportunities to insert COTS, the decision was made to maintain all the existing environmental requirements at the equipment or box level.

An open architecture with standard interfaces and bus structures was selected. This was done by first identifying commercial technology trends to enable forecasting where the large commercial user base would be in the future. As a result of this technology forecast, several technology decisions were made. Once decisions like which type of bus structure and processor family would be supported in the future were made, selection and evaluation of candidate COTS items was performed.

A structured approach was developed to select COTS items and evaluate their ability to meet the subsystem requirements. To maintain a high degree of confidence in future support of a selected COTS item, adherence to using only the commercially accepted technologies was essential.

For a given item such as a processor module or a hard drive, the government/contractor navigation team surveyed the commercial market. Once potential sources were identified, these sources were queried on performance, logistic support, customer base, commitment to the candidate technology, reliability data, design change notification, quality and workmanship standards, warranty, source acceptance, production support, repair support and price. In addition, a financial review of each candidate vendor was performed.

Following the market survey, selection and procurement of two or three candidate products was made to support evaluation. Samples procured were initially subjected to functional tests to verify the vendors advertised specifications. The functional tests included profiling which not only verified adherence to published standards such as VME and SCSI, but also identified unique features that were not common in the market place. Because use of a feature in an equipment design that was not available from multiple sources could lead to dependence on a single source, it was avoided. Also, a visual inspection of the vendor's stated workmanship standards were performed.

One of the most important steps in the COTS selection process was the conduct of pre-qualification engineering tests to assess the inherent environmental performance and survivability of the COTS candidate products. Testing included EMI, temperature, humidity, shock and vibration testing. Also, realistic environmental levels were determined for the COTS items to which the equipment cabinet was required to provide. The equipment cabinet provided a cocoon around the COTS items and maintained the required environmental protection.

Successful completion of the pre-qualification engineering testing enabled making an informed selection of

the COTS items used in the final design, and identified the necessary equipment design requirements to ensure proper protection of the COTS modules and assemblies. Early performance of the pre-qualification testing in the development cycle reduced the probability of surprises during the formal equipment level qualification tests and maintained an acceptable level of technical risk.

After some minor corrective actions, all qualification tests were passed and the design was finalized. In the qualification tests, COTS based equipment designs successfully demonstrated they can survive and operate in both benign and short-term warfighting conditions. Especially notable is the harsh shock test without failure.

***What were the results and lessons learned in developing this improvement?***

A phased, systems engineering approach to COTS insertion into the Navigation Subsystem has been used to manage the technical risk. After gaining the experience and knowledge from a pilot effort, SSP was able to quantify the technical risk of COTS insertion into the core navigation functions. Acceptable levels of technical risk were attained. The COTS based designs have been tested to the full range of specified environmental conditions and have passed. Long-term COTS supportability issues are addressed through quarterly COTS reviews. Following the SSP COTS management process, the subsystem logistic effectiveness metric continues to exceed the SWS requirements.

Several of the more significant findings are provided as follows:

- COTS based equipment designs (hardware and software) can meet the SLBM SWS requirements.
- The design approach followed, supported SSPs need to achieve life-cycle-cost savings while maintaining an acceptable level of technical risk.
- Buyer beware when using COTS items in a military weapon system.
- Vendors do not always report design changes.
- Vendors use customers as beta sites to find design problems.
- Access to the vendor's technical staff is not always available.
- Not all COTS based technologies advance at the same rate, e.g. disk drive technology advanced at a much faster rate than digital interface modules.
- All COTS spared items must be functionally tested in the navigation specific application prior to fleet delivery.
- Quarterly reexamination of COTS supportability is required.

***What other information would help another program evaluate its applicability towards their program?***

Deployment of systems and equipment's that use COTS items can continue to support the sailor while in a warfighting environment. The system designer must follow sound systems engineering principles, which include the collection of empirical data throughout the development cycle. A sound logistic and engineering support system after initial deployment is required to continue to assure the sailor can meet the mission requirements. Managers need to recognize that after initial deployment, COTS based subsystem designs continue to undergo a moderate level of redesign throughout the equipment's life cycle. The continuing redesign effort necessitates a core of the original design team be retained throughout the life cycle. This life-cycle support requires careful planning to minimize the cost in a way that can be structured using a level annualized budget.

▼ ▼  
**CDRL MANAGEMENT**

- ◆ All CDRLs Provided in Contractor Format
- ◆ Electronic CDRL Management
- ◆ Library of Electronic Documents (LEDS)

⇒ **(CDRL Management) -- All CDRLs Provided in Contractor Format**

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***What is the name of your program?***

Infrared Search and Track (IRST)

***Give a description of this idea and how it fits in the program:***

Allow contractors to provide CDRL deliverables in the format in which they were produced.

***How is it innovative and creative?***

This alleviates the contractors' labor and cost burden associated with converting their data to a format dictated by the government.

***How has this new improvement been applied?***

Language was included in the contract, which allowed delivery of CDRLs in contractor format.

***What were the results and lessons learned in developing this improvement?***

Resulted in timely delivery of CDRLs with fewer burdens to the program. Learned that if the contractor uses electronic media as their format, distribution of CDRLs is accelerated. Also, if contractor chooses to use Portable Document Format (PDF), can submit deliverables without the potential of the item being changed/revised.

***What other information would help another program evaluate its applicability towards their program?***

Determine if the program's contractor develops deliverables via electronic media. If their electronic media is compatible with the governments, the program should consider allowing contractor format CDRLs.

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⇒ **(CDRL Management) -- Electronic CDRL Management**

NAVAIR

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***What is the name of your program?***

United States Marine Corps (USMC) Light/Attack Helicopter Upgrades Program  
(PMA-276)

***Give a description of this idea and how it fits in the program:***

The program office set up a server for posting, tracking and approving CDRLs from the contractor. The contractor is provided access to the server on-line. Using this method, CDRLs can be electronically submitted, approved and stasured.

***How is it innovative and creative?***

It was a creative use of electronic commerce to increase the efficiency of tracking CDRLs. It was innovative because it has tremendously improved the turnaround time and response rate of the program's CDRLs.

***How has this new improvement been applied?***

As noted above, the program office has implemented electronic submittal, tracking, stasuring and approval of CDRLs.

***What were the results and lessons learned in developing this improvement?***

This initiative has greatly improved the CDRL turnaround time and response rate. The lesson learned is that this is the only way to go when dealing with CDRL submission and tracking. The other lesson learned is to expect some growing pains as everyone gets used to this way of doing business.

***What other information would help another program evaluate its applicability towards their program?***

A program considering this idea would need to consider the cost of implementing the idea (minimal) and the computer skills of the contractor and government personnel involved. Knowing this information would help the program office during the early stages of implementation. Neither of these concerns, cost and skill level, should keep a program from using electronic CDRL management.

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⇒ **(CDRL Management) -- Library of Electronic Documents (LEDS)**

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***What is the name of your program?***

Sparrow Missile Program

***Give a description of this idea and how it fits in the program:***

In order to meet DoDs goals for "paperless operations", Sparrow technical data (current and historical) is being converted to a digital format. Drawings, Specifications, Contracts, CDRL deliverables and Engineering Changes available for viewing via LEDS.

***How is it innovative and creative?***

The use of electronic submittals reduces the time involved for processing changes, and submittal and review of CDRLs. It also allows for sharing of technical information with the other services. Users have access to the most current information.



***How has this new improvement been applied?***

LEDS resides at China Lake and has numerous users (Raytheon, Point Mugu, Warner Robins (on joint efforts), PEO(T), NAVAIR) with viewer capability only. LEDS is accessed through NAWC and levels of access are determined depending on the user and the need to know.

***What were the results and lessons learned in developing this improvement?***

The time required to review and provide comments on Engineering Changes has been greatly reduced. Problems/Issues are identified and resolved in a timely manner. The contractors are receptive to managing data electronically.

***What other information would help another program evaluate its applicability towards their program?***

Efforts are on going to ensure compatibility between LEDS and JEDMICS.

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## CO-LOCATIONS WITH INDUSTRY

- ◆ Improved approach: During the product prototype final fabrication, testing, and initial delivery phase, encamp selected government members at contractor site for focus on “targets of opportunity” to improve cost, schedule, and performance

⇒ **(Co-Location with Industry) -- Improved approach: During the product prototype final fabrication, testing, and initial delivery phase, encamp selected government members at contractor site for focus on “targets of opportunity” to improve cost, schedule, and performance**

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***What is the name of your program?***

C-9B / DC-9 Avionics Upgrade Program

***Give a description of this idea and how it fits in the program:***

A small band of government IPT members should be sent to the contractor prototype site to facilitate and energize the daily efforts on the first product. One acquisition management person, one systems engineering person, at least one operator from a user command, and at least one maintainer from a user command is a good mix, but exact choices should be tailored to the specific program.

***How it is innovative and creative?***

Ordinarily, permanent government employees at the contractor site are overloaded and somewhat ingrained in “the normal way” of doing things, and they do not always spot opportunities for creative improvement. Bringing in a team of outsiders with a fresh perspective is needed. Co-Location begins at a carefully timed point (such as the mid-point of product first item build) when the first government person arrives to set up a team room and communications/computer tools for the others. The rest of the focus team arrives when testing and checkout begins. The team members cruise the contractor spaces and intermesh with day-to-day events under any excuse that sounds good, but the real objective is to spot opportunities to make the product and processes better. The team stays involved with all design, fabrication, test, and paperwork aspects, seeking to “pick the fruit from any low branches” when good ideas and improved processes are casually mentioned by contractor IPT members (e.g., at the water cooler) that could help make the product/program better. They facilitate looking into these opportunities, and when promising they negotiate approvals from the impacted competencies (including contractor executives). One or two improvements are all that is needed to reduce costs or cycle times, or to launch improve processes for quality of the product.

***How the new approach has been applied?***

I am an Electronics Engineer. I was a member of a small Joint Test Team who encamped at Lockheed Martin Aircraft Company, Greenville SC during the August-October 1997 period for C-9B avionics upgrade tests. Our band of government team members included two Navy pilots, two Navy and one USMC Crew Chief, a Navy Avionics maintenance specialist, and one other Civil Service engineer from the avionics T&E community. While we were on-site for the testing, we spotted many opportunities for better methods, quality improvements, maintainability or operator human factors, and efficiency improvements through process control and refinement. We discussed these with contractor and government senior IPT people and in several cases changes were made that benefited the program and product.

One example was changing the mounting angle for a cockpit computer control and display unit to enhance human factors and viewing angle for pilots of differing anthropomorphic dimensions (our short female Navy pilots saw things from a different angle than the taller contractor design engineers). Our Navy pilots spotted the problem right away, worked shoulder-to-shoulder with the contractor design engineers to use computer aided design tools to virtually prototype several potential corrections, evaluate them at the computer, fabricate a prototype, and then test it on the ground and in flight. The “fix” was done without adding to the schedule or increasing costs. If we hadn’t arrived until late in the game, we could have listed the problem as a deficiency to be corrected through retrofit at some time in the future: Because we were there early, it was fixed when the first airplane was delivered on time.

***What other information would help another program evaluate its applicability towards their program?***

“Being there” just sort of creates opportunities to improve things. Being there for testing is as good an excuse as any other, and it avoids slowing things down by putting the contractor employees on the defensive.

## COMMERCIAL BASED PERFORMANCE SPECIFICATION

◆ Low cost approach for establishing a sophisticated on-orbit capability

⇒ **(Commercial Based Performance Specification) -- Low cost approach for establishing a sophisticated on-orbit capability**

SPAWAR

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***What is the name of your program?***

Geodetic/geophysical follow-on satellite (GFO)

***Give a description of this idea and how it fits in the program:***

Use of a performance based specification, commercial practices, technology transfer, unique performance incentives, use of commercial launch services and turnkey procurement enabled the Navy to acquire a sophisticated on-orbit operational capability at a relatively low cost.

***How is it innovative and creative?***

- The prime contractor was given turnkey responsibility to deliver an on-orbit capability.
- Used shared commercial launch services. The traditional method would have been for the government to buy the launch vehicle separately and pay for separate integration services.
- Performance based requirements.
- Contractor used best commercial practices to design system to meet a performance specification.
- Contractor earns fee based on on-orbit performance of satellite.
- Small Navy management team.
- Provisions to benefit non-Navy users.
- Information (data) is being provided to the civilian community. This includes direct delivery of processed data to the National Oceanic and Atmospheric Administration and NASA.

***How has this new improvement been applied?***

The contractor successfully designed and delivered the first commercially built operational (military) radar altimeter satellite system.

Government expertise in satellite altimetry was transferred to U. S. industry. U. S. industry was given a competitive advantage in a worldwide marketplace.

Contractor procured shared launch services from a commercial source thereby delivering satellite on-orbit for approximately \$14M compared to a traditional single-mission launch of \$25M-\$30M.

***What were the results and lessons learned in developing this improvement?***

Sophisticated operational on-orbit capability was achieved for less than \$85M. A similar system developed using the traditional acquisition process cost ten times more to achieve an on-orbit capability. Established a U.S. competitive advantage in lightsat capability. This included stimulation of commercial investment in capabilities such as state of the art graphite epoxy structural material and an off-the-shelf spacecraft bus that is readily available to other lightsat projects. Given that the performance specifications are correctly defined, using this approach essentially eliminates the need for costly Engineering Change Proposals.

***What other information would help another program evaluate its applicability towards their program?***

Can the technology be transferred to industry? Is there a civilian or multinational application for your system? Are commercial techniques/approach applicable?

▼ ▼  
**COMMERCIAL CONTRACT ADMINISTRATION**

◆ Commercial Contracting – FAR Part 12

⇒ (Commercial Contract Administration) -- Commercial Contracting - FAR Part 12

MARCOR

**Capt. Jeff Wilson**

Team Water Purification Filter (TWPF)

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***What is the name of your program?***

Team Water Purification Filter

***Give a description of this idea and how it fits in the program:***

The idea was to procure small, handheld COTS water filtration units for use by infantry and reconnaissance units, in the same manner as any of the manufacturer commercial customers. The idea has been extended to the procurement of spare and repair parts for these systems; resulting in large cost savings, both in procurement and life cycle support of the system.

***How is it innovate and creative?***

This strategy provides for just-in-time support for spares and repair part.

***How has this new improvement been applied?***

The procurement package for TWPF has been used as a model for other COTS purchases throughout Marine Corps System Command.

***What were the results and lesson learned in developing this improvement?***

The initial procurement cost was 40% of the budgeted cost of the system. Additionally, by using the IMPAC Visa Card to procure spare and repair parts at the using unit level, a cost savings of 50%-60% will be realized, in addition to the cost avoidance of the 16% DLA pass through overhead cost.

***What other information would help another program evaluate its applicability towards their program?***

This initiative was supported by an extensive market survey. Not only were possible hardware solutions identified, but the methods of operation utilized by commercial customers in this specific market (water filtration devices) were also captured. FAR Part 12 discusses with some detail the type of information that must be identified in order to determine the applicability of contracting in this manner.

▼ ▼  
**COMMERCIAL SUPPORT**

- ◆ Conversion of a military aircraft to a commercial counterpart configuration in order to utilize the Federal Aviation Administration (FAA)/Original Equipment Manufacturer (OEM) support system
- ◆ Fleet Automotive Support Initiative (FASI)

⇒ **(Commercial Support) -- Conversion of a military aircraft to a commercial counterpart configuration in order to utilize the Federal Aviation Administration (FAA)/Original Equipment Manufacturer (OEM) support system**

NAVAIR

**George R. Johnson**

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***What is the name of your program?***

TH-6B

***Give a description of this idea and how it fits in the program:***

The idea is to utilize the already existing FAA/OEM system to provide program support (maintenance, logistics, engineering) for an aircraft that was originally a military derivative of a commercial product.

***How is it innovative and creative?***

The USNTPS had the problem of supporting a military aircraft when the lead service (Army) withdrew support. The typical thought process would have been to find an organic solution (procure another military aircraft or establish a Navy organic infrastructure to replace the Army support). This idea is creative because we took steps to reconfigure the aircraft to its commercial configuration in lieu of the more expensive alternatives. To the best of our knowledge, it is the first Navy aircraft that has been reconfigured from a military to a commercial aircraft.

***How has this new improvement been applied?***

This improvement has been applied at the United States Naval Test Pilot School (USNTPS), Patuxent River, MD. The USNTPS had been operating 6 OH-6B aircraft using organic (Army) program management, engineering and logistics support. When the Army removed the OH-6B aircraft from their inventory, they disestablished their support to the USNTPS, rendering the aircraft unsupportable. The problem faced was finding a method to support the aircraft, or obtaining a replacement aircraft for use in the training syllabus. Utilizing the OEM's commercial configuration data, the aircraft were converted to a commercial type aircraft and now use the FAA/commercial maintenance practices. Program management support is provided by PMA-207, including engineering and logistics support. It requires only one program manager in PMA-207 and part-time support from AIR 3.0 and 4.0. When needed, expert engineering and/or logistics support is available via contract to the OEM.

***What were the results and lessons learned in developing this improvement?***

The result was the conversion of all six OH-6B helicopters to the commercial MD-369 (TH-6B) aircraft and the utilization of the FAA/OEM maintenance practices and program management. The USNTPS was able to continue using the aircraft, with very minor disruption, for use in their training syllabus. This innovation saved millions of dollars that would have been spent in obtaining another aircraft to replace the OH-6B or to establish Navy infrastructure to keep the OH-6B in service.

***What other information would help another program evaluate its applicability towards their program?***

Any item which was procured as a military derivative of a commercial item can be maintained by

commercial standards once a configuration study is performed and the item is reconfigured back to the commercial configuration.

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⇒ **(Commercial Support) -- Fleet Automotive Support Initiative (FASI)**

MARCOR

**Mjr G. Patricio**

Precision Logistics

Combat Support & Logistics Equipment

Commander, Marine Corps Systems Command

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***What is the name of your program?***

Prime vendor contractor in support of life cycle management of fielded equipment.

***Give a description of this idea and how it fits in the program:***

Prime Vendor Contractor in support of Life Cycle Management of fielded equipment. Examples Class IX/CLI, 782 gear/CBIRF. In the case of already fielded systems, working with DLA we are awarding regional contracts to Prime Vendors in support of the systems for all Class IX and maintenance overflow. These regional contracts beginning with the southern California and Southeast regions will support all Marine installations within those regions. However, as these projects demonstrate success, all other military installations will be able to order products and services from these contracts. The goal of the Prime Vendor initiatives is to reduce cost while significantly reducing inventory and order ship time

***How is it innovative and creative?***

This is the first time that a contract based on commercial practices is awarded in support of military equipment.

***How has this new improvement been applied?***

Contract award expected in May 1998.

***What were the results and lessons learned in developing this improvement?***

New initiative in support of ground weapons systems. Both the contracting agency DLA (DSC Columbus) and the Marines, 1st FSSG, 2nd FSSG and SYSCOM went through the process with some basic ideas on what we wanted but not sure of all the details and how industry would respond. The response from industry has been tremendous and as a result, we have proposals from world-class logistics providers and integrators.



▼ ▼  
**COMPUTER SYSTEMS**

- ◆ Electronic Visualization of the New Attack Submarine Design
- ◆ Standard commercial information architecture has significantly increased fleet training effectiveness at very low cost

⇒ **(Computer Systems) -- Electronic Visualization of the New Attack Submarine Design**

NAVSEA

**Michael S. Brown**

New Attack Submarine Program

PMS450

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***What is the name of your program?***

New Attack Submarine (NSSN) Program

***Give a description of this idea and how it fits in the program:***

The arrangement of the piping, wiring, components, assemblies and structure of the New Attack Submarine is reviewed electronically using 3-dimensional computer generated images of the design to ensure form and fit into the submarine. The detailed arrangement of these systems ensures construction interference's are eliminated and maintainability, i.e. access to these systems, is considered prior to construction.

The goal is to eliminate the rework associated with typical ship construction done with 2-D drawings and eliminate or minimize the cost of physical mock-ups of the submarine. Also, real time feedback can be given to the designers if problems exist in the arrangement.

***How is it innovative and creative?***

Prior to the advent of 3-D electronic product model and electronic visualization, full-scale mock-ups were required for many areas of the submarine to determine proper arrangements. As well, it is expected the number of Engineering Revisions to drawings, and their realization in physical structure will be significantly reduced during construction.

Input from the fleet and maintenance activities on operation and maintenance of the submarine is gathered on a scheduled quarterly basis using this system to show how the current submarine design and arrangement will support effective operation and efficient maintenance throughout the submarine's service life.

***How has this new improvement been applied?***

Each week, the NSSN design yard, Electric Boat, presents arrangement details of the submarine, via computer generated images to the Navy Program Office. The cognizant Navy technical personnel can review the arrangement details at the PMS450 office and discuss acceptability with Electric Boat designers over a video teleconference connection to Groton, CT. Feedback from Navy technical and operations personnel is then used either to concur/approve or highlight issues to be addressed by the designers to improve the arrangement or design.

***What were the results and lessons learned in developing this improvement?***

Given that a weekly review of the design is conducted, the formats of the presentations have been modified over time to be most effective. The design yard develops a schedule of arrangement drawings to review several days in advance of the presentation to the Navy. The presentation format has been developed to readily highlight technical, arrangement and maintenance issues.

***What other information would help another program evaluate its applicability towards their program?***

Electronic Visualization is particularly valuable for large, complex systems which require the assembly of many components into a cohesive arrangement. It is not an inexpensive process and should be considered for use relative to the complexity of the design product/project involved.

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⇒ **(Computer Systems) -- Standard commercial information architecture has significantly increased fleet training effectiveness at very low cost**

NAVAIR

**Capt. R. W. Jacobs**

Tactical Training Ranges

PMA-248

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***What is the name of your program?***

Large Area Tracking Range (LATR)

***Give a description of this idea and how it fits in the program:***

The LATR is a GPS based instrumentation system that is placed onboard ships and aircraft to provide tracking information in real time to ranges and fleet commanders. As a result of some farsighted and low cost innovations, the system has completely changed the way the Commanders, Second and Third Fleets prepare battle groups, amphibious ready groups, and joint task forces for war. Originally designed with dedicated LATR display and debrief terminals to be used at range operations centers, members of the LATR IPT worked with the Joint Maritime Command Information System program, as well as fleet trainers to leverage fleet C4I systems using internet protocols for distributing exercise track histories in real time. The ability of off-range exercise players and sea-borne exercise participants and commanders to get such feedback has made a big difference in training value of large and expensive exercises. Participants can get feedback while it is still meaningful instead of waiting for delayed exercise analysis reports, and commanders can assess results immediately and react accordingly to enhance training payoff. Further actions are in work to distribute debriefs onto local PC terminals, using the www. Using commercial standard network architectures at very little cost, the team has significantly enhanced and evolved LATR into the premier tool used by the CONUS-based fleets to assess readiness of deploying forces.

***How is it innovative and creative?***

It made use of the commercial network standard architecture to enable extending LATR display and debrief to fleet C4I systems.

***How has this new improvement been applied?***

It has been applied to three fleet ranges and is the basis for the development and move to IT-21 based range display and debrief systems.

***What other information would help another program evaluate its applicability towards their program?***

This applies to any program that uses special displays or communication architecture.

▼ ▼  
**CONCURRENT ENGINEERING**

◆ Concurrent Engineering of the Low Pressure Turbine Blade for the F414 Engine

⇒ **(Concurrent Engineering) -- Concurrent Engineering of the Low Pressure Turbine Blade for the F414 Engine**

NAVAIR

**Don Blottenberger**

F414-GE-400 Engine Program, AIR-4.4.3.1

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***What is the name of your program?***

F414-GE-400 Augmented Turbofan Engine Program for the F-18 E/F Aircraft Program

***Give a description of this idea and how it fits in the program:***

Concurrent engineering takes a parallel approach to design, integration and manufacturing activities. Traditionally design activities like design drawings preparation, tooling design, casting development and first castings were completed in series style with one activity following completion of the previous. In concurrent engineering these activities overlap and sometimes happen simultaneously. We used this approach to design the low pressure turbine blade for the F414 engine.

***How is it innovative and creative?***

It breaks from traditional methods and results in a reduction of development time and in some cases cost.

***How has this new improvement been applied?***

In addition to the LPT blade, the F414 team applied this philosophy across all functional design areas and in all redesign cases.

***What were the results and lessons learned in developing this improvement?***

The results for the LPT blade show a 20 week reduction in cycle time from start of design through first part production. Total development and design time was reduced from 44 weeks to 24 weeks. Consistent results were seen on all efforts using concurrent engineering.

***What other information would help another program evaluate its applicability towards their program?***

Concurrent engineering is made easier through the effective use of IPTs and frequent technical reviews.

▼ ▼  
**CONSOLIDATION OF WEAPONS SUPPORT**

**◆ Consolidation of Navy Nuclear Weapons Support**

⇒ **(Consolidation of Weapons Support) -- Consolidation of Navy nuclear weapons support**

NAVAIR (PEO-CU)

**Mullins, Douglas**

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***What program are you with?***

TOMAHAWK Cruise Missiles, PMA-280

***Give a description of this idea and how it fits into the program:***

The termination of all Navy nuclear weapons except TRIDENT and TOMAHAWK dictated the need to reduce the nuclear weapons logistics infrastructure to the minimum required. By the early 1990s, the storage and maintenance of TRIDENT nuclear weapons had been reduced to two locations and by the mid-1990s, the number of locations for TOMAHAWK nuclear weapons had been reduced to two locations as well. Consolidation of the nuclear weapons was put forth as a means to halve the number of support sites and to reduce life cycle costs of TOMAHAWK.

***How is it innovative and creative?***

This was the first time that consolidation of Navy nuclear weapons had been addressed.

***How has this new improvement been applied?***

The relocation of TOMAHAWK nuclear weapons to strategic weapons facilities was accomplished without disruption or degradation of TOMAHAWK or TRIDENT nuclear weapon readiness. Training, support equipment installation, transfer of technical documentation, and the movement of TOMAHAWK W80 warheads by DOE Secure Trailer (SST) and the movement of missiles (without warheads) by commercial carriers was successfully completed without incident.

***What were the results and lessons learned in developing this improvement?***

The number of Navy facilities supporting nuclear weapons has been cut in half with resultant annual cost savings and greatly reduced life cycle costs. Payback of investment costs occurred in only two years. Cumulative costs savings exceeds \$14M in only five years.

***What other information would help another program evaluate its applicability toward its program?***

Programs should look for opportunities with other programs who share common goals to reduce redundant support infrastructure through consolidation of support functions.

▼ ▼  
**CONTRACT DATA REDUCTION**

◆ Reduction of Contract Data

⇒ **(Contract Data Reduction) -- Reduction of Contract Data**

NAVAIR (PEO-CU)

**Tim Barnes**

AQM-37C, PMA-2081

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***What program are you with?***

AQM-37 Aerial Target Program

***Give a description of this idea and how it fits in the program:***

The AQM-37 IPT continues to look for ways to reduce effort and thus, cost. The Defense Contract Management Command, members of the IPT, offered to provide data to the team for quality, reliability and production currently being received under contract. This government generated data report would permit elimination of the respective contract data items in the contract.

***How is it innovative and creative?***

The required data is eliminated from delivery on the contract but still available to the competencies of the team. This change reduces the contract cost without eliminating the required data.

***How has this new improvement been applied?***

The data is still collected by the contractor in company's data base as required as part of doing business. DCMC has access to the data and produces a report in a format agreed to by the government IPT. DCMC is routinely using the data so there is no extra work for them except for preparing the report. A Memorandum of Agreement was prepared between DCMC, NAVAIR and NAWCWD to formalize the process.

***What were the results and lessons learned in developing this improvement?***

The lesson learned was to look within the IPT for unrealized resources to reduce cost and effort. Holding frequent team meetings (whole IPT) to discuss problems, situations, goals and objectives can provide ideas and innovations for cost savings and improving efficiency.

▼ ▼  
**CONTRACTING**

- ◆ Cooperative Research & Development Agreement (CRADA)
- ◆ Coordination with related Programs
- ◆ Program Offices need a notification process or access to a data base that provides information on pending or implemented COTS hardware and software changes
- ◆ Prototype Other Transactions Using Interactive Contractor/Government Processes
- ◆ Special Contract Requirement for Acquisition Reform Incentives
- ◆ TBIP and Tomahawk AUR Government folks were frequently at a disadvantage during the last year since we knew very little regarding Tactical Tomahawk and our RMSC counterparts knew every minute detail and they conducted all business with this end goal in mind

⇒ **(Contracting) -- Cooperative Research & Development Agreement (CRADA)**

NAVAIR

**Gordon Turner**  
AARGM, PMA-242

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***What is the name of your program?***

Advanced Anti-Radiation Guided Missile (AARGM) - AARGM is a SBIR program

***Give a description of this idea and how it fits in the program:***

It enables the special teaming arrangement between the USN and the Contractor (SAT) that provides mutual benefits in order to evaluate AARGM capability.

***How is it innovative and creative?***

The prime contractor contracts with the government to obtain expertise in active anti-radiation homing and in return provides expertise in passive anti-radiation homing to the government.

***How has this new improvement been applied?***

The agreement is currently being negotiated between USN and SAT.

***What were the results and lessons learned in developing this improvement?***

Negotiation in process/Lesson learned - TBD

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⇒ **(Contracting) -- Coordination with related Programs**

NAVSEA

**J. J. Louden**  
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***What is the name of your program?***

Acoustic Rapid COTS Insertion (A-RCI)

***Give a description of this idea and how it fits in the program:***

Three contract efforts were effectively merged by the Integrated Development Plan (IDP) allowing the Navy to manage three related efforts as one program with out losing Program identity.

***How is it innovative and creative?***

In over 25 years of submarine sonar developments in one location separate program offices were established and funded for each program and sometimes separated by effort (Development & Production). The inefficiency of this approach combined with a reduced budget forced an evaluation of how we do business. The IDP development eliminated redundant efforts.

***How has this new improvement been applied?***

A-RCI Program coordinated with the BQG-5A and the NSSN C3I Programs at Lockheed Martin, at NUWC and with our support contractors.

***What were the results and lessons learned in developing this improvement?***

Results are excellent. Lesson learned - nothing is easy. Combining with a large program brings different program challenges.

***What other information would help another program evaluate its applicability towards their program?***

Work with your prime contractor to find efficiencies.

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⇒ **(Contracting) -- Program Offices need a notification process or access to a data base that provides information on pending or implemented COTS hardware and software changes**

NAVAIR

**Mark Dady**

Tomahawk Weapons Control System, PMA-282

Naval Air Systems Command, Code PMA-282

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***What is the name of your program?***

Tomahawk Weapons Control System

***Give a description of this idea and how it fits in the program:***

Changes in the hardware and software configurations of COTS equipment or software may have an adverse impact on DoD Tactical systems using the COTS item. Often minor changes such as firmware may not result in a part or item number change with the vendor but will affect the DoD application of the item. The TOMAHAWK Weapons Control System Program has experienced problem with TAC-3 and TAC-4 FDDI Drivers whose firmware has changed and caused problems with the system startup and diagnostics programs.

***How is it innovative and creative?***

This is being served up as a lessons learned to be considered under similar situations.

***How has this new improvement been applied?***

Our program office has not taken formal contractual steps to require formal notification as defined above. I believe it is a global issue that must be explored in order to assess slight differences in the COTS utilization in the fleet usage environment. As we have no guarantees in a COTS environment, we need to be alerted to upcoming changes which may lead to parts obsolescence and life cycle support.

***What were the results and lessons learned in developing this improvement?***

Without proper and timely notification, there lacks the planning to affect design changes as a result of “factory” changes outside of our control.

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**⇒ (Contracting) -- Prototype Other Transactions Using Interactive Contractor/Government Processes**

**Multiple:**

- ◆ Other Transaction Authority (OTA) Agreements for Prototyping.
- ◆ Fixed Milestone Payments with continuance contingent on mutual satisfaction.
- ◆ Oral Proposals; Integrated Cost/Technical Best Value Evaluation.
- ◆ Streamlined, Commercial-based Performance Specifications; with CAIV.
- ◆ Integrated Product/Process Development starting with spec development.

SPAWAR

**Michael Cotner**

SPAWAR 02-22A

Fixed Distributed System – Commercial (FDS-C), PMW181 (Rod Mackinnon)

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***What is the name of your program?***

Fixed Distributed System – Commercial (FDS-C)

***Give a description of this idea and how it fits in the program:***

FDS-C is a potential ACAT III development program meant to provide the basis for the Navy’s future long-term deep-ocean underwater surveillance. The reason it is “potential” is that in order to evolve as a cost-effective alternative to other surveillance methods it must demonstrate the necessary technical capability at a fraction of the cost of the previous FDS design.

SPAWAR felt the only way to really get this point across to potential builders was to start from scratch and eliminate all barriers to communication, then to jointly work every step of the way – from spec development and team configuration through the entire prototype build and test phase of the program. The OTA, then recently granted for any appropriate DoD Services’ advanced research programs, provided the foundation. Face-to-face communications with potential offerors, both individually and jointly, throughout the “OTA process” (including proposals) provided the building block.

***How is it innovative and creative?***

It was one of the first Navy applications of the OTA for prototypes, and one of few programs relying on intensive pre-proposal communications with potential offerors, oral proposal presentations, and joint cost/technical evaluation teams.

***How has this new improvement been applied?***

A key feature of the Agreements that evolved from the interaction is the solution developed to bridge the gap between the desire to fix price development, but limit liability if insurmountable problems evolve. The solution was to incorporate fixed milestone payments (no progress or cost incurred payments) based on a series of fairly short-term performance events. Payment for each event depends on the contractors’ “best efforts” to successfully accomplish the event, but either party may walk away after each event if the future is bleak.



***What were the results and lessons learned in developing this improvement?***

KEY RESULT: Already market dynamics have improved with the creation of a team to compete with our past standard bearers. We have two development teams, with no increase in funding, rather than the one we could have expected given business as usual. The new team sees a formidable but potentially rewarding challenge; the old team understands that it doesn't do any good to control a market that could disappear.

LESSONS LEARNED: Interactive OTA Process: efficient and effective due to open interaction emphasizing Government partnership, short need-to-evaluation cycle, and informal pre-proposal discussions. Real-time means less time due to better understanding of cost basis and design approach. Dynamic rather than static procedures get people actively involved in helping rather than standing around waiting for someone else to deliver.

ORAL PRESENTATIONS: Allowed evaluator feedback which led to greater, quicker understanding of offerors' approaches, and in turn allowed offerors a more tangible feel for the evaluators' concerns, thus allowing potential misunderstandings to be avoided. We weren't picky. There was no technical transfer. Videotaped, but never used them.

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⇒ **(Contracting) -- Special Contract Requirement for Acquisition Reform Incentives**

MARCOR

**A. Dellaterz**

Howitzer, Medium Towed 155mm, XM777 (LW155) C2112  
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***What is the name of your program?***

Lightweight 155mm Towed Howitzer

***Give a description of this idea and how it fits in the program:***

The JPMO wants to encourage the Prime Contractor to take a proactive role in Acquisition Reform. To do this, a Special Contract Requirement entitled, Acquisition Reform Incentives, was incorporated into the LW155 Contract. The Contractor is encouraged to identify Government directed processes and requirements that are over-specified or not cost effective. The Contractor is to submit Acquisition Reform Incentive proposals and will share in any net acquisition savings.

***How is it innovative and creative?***

This contract clause is an innovative way to get the Contractor to give serious consideration to Acquisition Reform because of the potential financial benefits that could accrue to him.

***How has this new improvement been applied?***

This Acquisition Reform clause is in the LW155 EMD Contract signed on 17 March 1997.

***What were the results and lessons learned in developing this improvement?***

It is too early to assess results and develop lessons learned.

***What other information would help another program evaluate its applicability towards their program?***

A copy of this clause will be made available upon request to the JPMO to all programs for review and applicability.

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⇒ **(Contracting) -- TBIP and Tomahawk AUR Government folks were frequently at a disadvantage during the last year since we knew very little regarding Tactical Tomahawk and our RMSC counterparts knew every minute detail and they conducted all business with this end goal in mind**

NAVAIR

**Cdr. Rick Smith**

TBIP, PMA-2803C

Naval Air Systems Command, Code PMA-2803C

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*What is the name of your program?*

TBIP

*What other information would help another program evaluate its applicability towards their program.*

I suggest that those involved in on-going programs in situations where it is possible that the program and or programs would be terminated or drastically changed have insight into what is going on. Not as decision makers but as observers.

▼ ▼  
**CONTRACTING – ALPHA CONTRACTING**

- ◆ Contracting - Statement of Objectives (SOO)
- ◆ FY 99-03 Multiple Year Alpha Contracting Process

⇒ **(Contracting – Alpha Contracting) -- Contracting - Statement of Objectives (SOO)**

NAVAIR

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***What is the name of your program?***

Predator Medium Altitude Endurance (MAE) Unmanned Aerial Vehicle (UAV)

***Give a description of this idea and how it fits in the program:***

SOO Contracting is an extension of Alpha Contracting which involves the Government and the contractor jointly developing the Statement of Work (SOW). SOO contracting entails issuing the RFP with a Statement of Objectives (vice a SOW) which describes the objectives of the prospective contract. With the guidance of the Statement of Objectives the contractor is requested to develop a SOW. Similar to Alpha Contracting, in which the contractor and Government jointly develop the proposal, the contractor-prepared SOW is evaluated jointly by both contractor and Government for revision/refinement and inclusion in the contract.

***How is it innovative and creative?***

Typically, the Government provides a SOW to the contractor as direction for developing the proposal. Usually, several contentious issues emerge during the proposal preparation and negotiation contracting phases. These issues arise as a result of differing interpretations of SOW language. Consequently, several iterations of Government-contractor discussions are required to clarify each other's position. With SOO Contracting, in contrast, contentious issues are minimized (if not eliminated) because the SOW is jointly developed. As a result, there are improved lines of communications and an improved proposal process.

***How has this new improvement been applied?***

SOO contracting is currently in process for two prospective contracts.

***What were the results and lessons learned in developing this improvement?***

Yet to be determined.

***What other information would help another program evaluate its applicability towards their program?***

The SOO contracting method is appropriate for both cost and fixed type contracts, however, it is best suited for R&D efforts where specific definition of effort is uncertain. Having the contractor and Government jointly develop the SOW is a communication tool that is beneficial for all proposed contracting efforts.

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⇒ **(Contracting – Alpha Contracting) – FY 99-03 Multiple Year Alpha Contracting Process**

NAVAIR

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***What is the name of your program?***

T45 Training System (T45TS)

***Give a description of this idea and how it fits in the program:***

The FY 96, FY 97, and FY 98 T45 Airframe Contracts, with exception of the Integrated Logistics System (ILS) and the Ground Training System (GTS) portions of the contracts, were “Parametrically” priced. There was little to no participation by the T45TS program management and technical personnel in the negotiation of these contracts. Because of the lack of participation, there were misunderstandings as to how the contract was priced. As a result, this generated mistrust by the program management and technical people in the contractor, McDonnell Douglas, and in the contracting process.

***How is it innovative and creative?***

The Alpha process draws upon the program management and technical personnel of both the Government and the Contractor to work together as an IPT to structure the contract. A pure Alpha process is one where Government and Contractor personnel, teaming together, would determine contract requirements, develop the methodology for pricing the requirements, and validate the contract pricing. The T45TS Multiple Year Alpha Contracting process is a hybrid process. In the T45TS Alpha scheme, Government and Contractor personnel teamed together to develop a pricing methodology and to validate the pricing data. Contract pricing, normally accomplished via PCO led negotiations, will be performed by program management and technical personnel from the Government and the Contractor with oversight by the PCO. Government and Contractor personnel will work together to provide the rationale and justification necessary to support contract pricing. The certified cost proposal will be provided to the Government upon completion of contract pricing. The Alpha process provides the opportunities for better communications between the Government and the Contractor, and provides for ownership and better understanding of the contracting process by Government and Contractor program management and technical personnel.

***How has this new improvement been applied?***

The Alpha process is being applied to the T45TS FY 99-03 Multiple Year Contract procurement.

***What were the results and lessons learned in developing this improvement?***

It is anticipated that a Contract Award will take place by the July-August 1998 time frame. This is a savings in the normal contracting times by 5 to 6 months. This equates to administrative savings for the program. It is also anticipated that the trust and the understanding between the Government and Contractor will be enhanced because of an understanding by the Contractor of what is required and expected under the terms and conditions of the contract and an understanding by the Government as to what is being procured under the contract.

***What other information would help another program evaluate its applicability towards their program?***

The Alpha process deviates from the normal method of PCO led negotiations, which could be a threat to both Government and Contractor ways of doing business. By its nature, the Alpha process requires a high level of acceptance and support by all levels of both Government and Contractor management. An environment of trust is needed between all parties if Alpha is to succeed. Savings in contract execution administrative time are likely using the Alpha process. The Contractor must know that the Government’s intention is to cover the Contractor’s costs and

to provide the Contractor with a fair and equitable profit. The Government must have confidence that the Contractor has trimmed all excess from its pricing. Given these conditions, cost savings are likely for the Government.

▼ ▼  
**CONTRACTING – COMMERCIAL ITEMS**

- ◆ Use of Airline-type Commercial Practices to ensure delivery of a state-of-the-art product
- ◆ Use of Commercial Manuals
- ◆ V-22 Commercial Engine and Support Procurement

⇒ **(Contracting – Commercial Items) -- Use of Airline-type Commercial Practices to ensure delivery of a state-of-the-art product**

NAVAIR

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***What is the name of your program?***

C-40A

***Give a description of this idea and how it fits the program:***

The Navy required a Navy Unique Fleet Essential Airlift Replacement Aircraft (the NUFEA-RA Program). This aircraft, since designated the C-40A, was required to replace the aging C-9 fleet. We structured the procurement and negotiations process to allow Boeing Aircraft (the winner of the Firm Fixed Price competitive procurement) to deliver a state-of-the-art product. This is a common practice between the airlines and aircraft manufacturers where lead-times are significant. The Navy contract was awarded 29 August 1997. The first aircraft will be delivered in December 2000. All technological improvements which are developed and certified by the FAA in the interim can be incorporated in our aircraft.

***How is it innovative and creative?***

It eliminates the requirement to “lock in” the configuration of the product on a Firm Fixed Price COTS contract at award date, allowing the flexibility necessary to acquire a state-of-the-art product.

***How has this new improvement been applied?***

Boeing offered the 737-700 new technology aircraft in response to the Navy’s request for proposal. The Navy did not request and Boeing did not specify any particular equipment to be designated by manufacturer and model number except the basic aircraft itself. Instead, general capabilities and performance requirements were specified. The Navy will be working with Boeing right up until actual manufacture to ensure the latest state-of-the-art product is delivered. For instance, if Collins develops an improved, FAA certified auto-pilot between now and the time Boeing requires delivery from Collins, we can get the improved auto-pilot. This applies to everything about the aircraft from complex avionics to paint.

***What were the results and lessons learned in developing this improvement?***

We are early in the process but benefits are already apparent. Through two configuration conferences, Boeing has made the Navy aware of numerous possibilities in such areas as avionics, cabin configurations and oxygen systems to name a few.

***What other information would help another program evaluate its applicability towards their program?***

Any COTS procurement where significant lead-time is required can benefit from not “locking in” the exact configuration of the final product at contract award.

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⇒ **(Contracting – Commercial Items) -- Use of Commercial Manuals**

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***What is the name of your program?***

C-40A

***Give a description of this idea and how it fits the program:***

The Navy required a Navy Unique Fleet Essential Airlift Replacement Aircraft (the NUFEA-RA Program). This aircraft, since designated the C-40A, was required to replace the aging C-9 fleet. Rather than requiring a complete set of NATOPS manuals as was done for the C-9, we encouraged the Fleet (CNARF) to consider use of COTS manuals with a NATOPS supplement.

***How is it innovative and creative?***

It eliminates the considerable expense of converting numerous commercial manuals into NATOPS format and the recurring cost associated with updating unique manuals.

***How has this new improvement been applied?***

CNARF has decided to use all commercial manuals with a NATOPS supplement for those unique Navy requirements not covered in the commercial manuals.

***What were the results and lessons learned in developing this improvement?***

We are early in the process. Cost savings of not having Boeing develop unique Navy NATOPS manuals is \$2Million.

***What other information would help another program evaluate its applicability towards their program?***

Any COTS procurement where commercial manuals are normally offered should consider using this alternative.

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⇒ **(Contracting – Commercial Items) -- V-22 Commercial Engine and Support Procurement**

NAVAIR

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***What is the name of your program?***

V-22 Osprey

***Give a description of this idea and how it fits in the program:***

The V-22 program office has determined the most effective method to procure and support the V-22 engine is through a commercial contract with Allison Engine Co. (AEC). AEC will support the engine via their Power-By-The-Hour (PBTH) program. PBTH requires the customer to pay for support of the engine on an hourly fee per flight hour. Allison's PBTH program is responsible for parts and replenishment at the organizational level and maintenance and supply support beyond the 0-level. Allison is contractually required to meet both supply

requisition response times and maintain inventory management effectiveness and availability metrics. Marines, Sailors and Airmen will perform 0-level maintenance.

***How is it innovative and creative?***

One of the first programs to maximize the use of contractor provided, long term, total life-cycle logistics support that combines depot-level maintenance along with wholesale and selected retail material management functions.

***How has this new improvement been applied?***

Commercial engines are on contract and commercial logistics support will commence in 1999.

***What were the results and lessons learned in developing this improvement?***

Significant life cycle cost savings can be achieved by exploring new and innovative concepts for system support.

***What other information would help another program evaluate its applicability towards their program?***

The program office has maintained the various analyses which led to the commercial decision and the methodology/process for implementation.



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## CONTRACTING – JUSTIFICATION, APPROVAL & PARTNERING

◆ Block Justification and Approval for International directed source procurements

⇒ **(Contracting – Justification, Approval & Partnering) -- Block Justification and Approval for International directed source procurements**

NAVSEA

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***What is the name of your program?***

NATO SEASPARROW Project Office encompassing ESSM, MK-48, Rearchitechured NATO SEASPARROW Missile System (RNSSMS), LLLTV, and TAS MK-23

***Give a description of this idea and how it fits in the program:***

Currently each procurement that is processed requires it's own individual J&A for a "c(4)" exception (International directed source). By changing the J&A process approval to have one "block" J&A encompass the approval of all directed procurements upon the execution of each years budget, which contains the coming year's requirements and is approved by the International steering committee, the J&A process which normally takes a week to two weeks to obtain the necessary signatures could be significantly shortened by gaining a block approval once vice multiple individual approvals throughout the year.

***How is it innovative and creative?***

NSPO has the unique opportunity under international agreement to direct sources through the Steering Committee. If somehow (i.e., blanket J&A tied to the Steering Committee budget each year) we could get the necessary approvals on a blanket basis, we could bring the prime contractor's on to a greater extent in procurement development (i.e., SOW, CDRLs, etc...). In my opinion this would eventually reduce cycle time by reaching agreement on what is expected/desired out of each procurement before the PR leaves NSPO. This would avoid to a large extent miscommunication/misinterpretation that results in contractor's proposing (based on their interpretation of our requirements vs. a mutual understanding). By establishing this in the front end of the procurement process through partnering the proposal generation, tech evaluation, negotiation and contract award process should go smoother as their is a common understanding of the requirements going in. In addition, processing the J&A approval once vice multiple times will cut cycle time for each individual procurement.

***How has this new improvement been applied?***

Has not been applied yet. The current plan is to apply this process with the next budget approval.

***What other information would help another program evaluate its applicability towards their program?***

This process improvement would only be applicable to International programs with directed sources.

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**CONTRACTING – MILESTONE BILLING**

◆ **ATFLIR Engineering Development Model (EDM) Contract Option**

⇒ **(Contracting – Milestone Billing) -- ATFLIR Engineering Development Model (EDM) Contract Option**

NAVAIR

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***What is the name of your program?***

F/A-18 Advanced Targeting Forward Looking Infrared (ATFLIR)

***Give a description of this idea and how it fits in the program:***

The ATFLIR program has a required Initial Operating Capability (IOC) date of May 2002 (to meet F/A-18E/F first deployment); however, the required FY 98/99 funding was not available. As a result, the government and contractor entered into an innovative commercial business contractual approach. With this EDM contract option approach, the government will not pay for fabrication of the EDMs until they are ready for delivery in October FY 00. This delivery date is when additional funding should be available from a POM 00 issue.

***How is it innovative and creative?***

Any and all costs associated with the fabrication of the EDMs will be placed on the contract as an option. The contractor will be at risk for costs associated with the EDM fabrication and the government will only pay for the design task and initial test assets in FY 98/99. If funds become available in FY 00 and the government exercises the EDM option the government will recognize pre-option cost in payment for EDM fabrication.

***How has this new improvement been applied?***

The option methodology allows the contractor to complete EDM fabrication and maintain schedule for May 02 IOC without additional funding in FY 98/99.

***What were the results and lessons learned in developing this improvement?***

The EDM option utilizes a commercial business practice after buying fully fabricated EDMs by recognizing pre-option costs to solve short term funding shortfalls.

***What other information would help another program evaluate its applicability towards their program.***

The key ingredient to making this innovative commercial business practices succeed was the ability to segregate hardware deliveries from the baseline development tasks.

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**CONTRACTING – NAVY EXCHANGE**

- ◆ Public Private Ventures (PPVs) as implemented under Nonappropriated Fund Instrumentality (NAFI) procurement procedures

⇒ **(Contracting – Navy Exchange) – Public Private Ventures (PPVs) as implemented under Nonappropriated Fund Instrumentality (NAFI) procurement procedures**

NAVSUP

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***What is the name of your program?***

Nonappropriated Fund Instrumentality (NAFI) Public - Private Ventures (PPVs)

***Give a description of this idea and how it fits in the program:***

NEXCOM serves as the headquarters element of the Navy Exchange System (NES), which consists of several "business lines," designed to enhance the quality of life for our navy family by providing them with the resale products and services they want. The NES is a self sufficient operation which generates nonappropriated fund revenues to pay for its overhead and to contribute to Morale, Welfare and Recreation programs that support our military patrons. This is done without the use of taxpayer dollars. Our PPV program provides a means of obtaining the most demanded brand names and the best business practices of the industry leaders, resulting in increased customer satisfaction and greater sales and profits for MWR.

***How is it innovative and creative?***

Our PPV agreements have attracted the top commercial business operators to provide goods and services for our Sailors, their family members and other authorized patrons. Design, construction and operation costs are borne by our private partner while the Navy maintains title to the land and assumes title to all contractor provided buildings and real property after construction and upon acceptance of the facility.

***How has this new improvement been applied:***

Sailors and their families are given the option to take advantage of convenient and quality goods and services, within the Navy Exchange facilities. PPV goods and services are normally sold at lower prices than demanded by commercial establishments. The decrease in capital investment by NEXCOM and the increased revenue stream provided by the more popular name brand PPVs adds to the available funding support contributed by NEXCOM to Quality of Life and MWR programs. Morale is enhanced by providing the name brands on base that our customers want and would otherwise seek at locations away from the installation at greater expense in time and money.

***What were the results and lessons learned in developing this improvement?***

Our largest PPV is with AT&T to provide personal, unofficial telecommunications services. This contract allowed us to give the patrons staying at the (Bachelor Quarters) BQ the ability to place calls from his/her room to family and friends at competitive rates. To accomplish this, AT&T agreed to invest approximately \$150M in wiring and equipment. Under the agreement, AT&T also provides other types of services: long distance calling centers, pay phones, brig phones, Navy Lodge phones, prepaid cards, calling cards and affinity/residential long distance service. AT&T provides all equipment, wiring and technical support to install the infrastructure and systems to provide these services. AT&T also paid a \$2M license fee and will pay an annual guarantee of no less than \$35M to support Navy, Marine Corps and Coast Guard MWR programs. The phone initiative has also been expanded to

ships. Now our Sailors and Marines can call home from a deployed ship anywhere in the world at an average rate of \$1 per minute.

For FY 97, McDonald's generated \$74.3M dollars in sales and provided \$7M in commissions. This year, we also awarded a contract that will bring privately financed and operated Subway brand submarine sandwich franchises to naval installations worldwide. A check for \$1M prepaid commissions was paid within thirty days of signing the contract. Twenty four locations have opened, and we expect to grow to sixty sites in FY 98. The average on-base Subway is generating sales of about \$10,000 per month more than a comparable Subway store produces off-base. Subway FY 97 sales were \$2.2 mil with \$267,000 in commissions payable to NEXCOM for further distribution to Navy MWR activities.

We also have PPV agreements to provide gasoline supplies and construction of gasoline service stations which include convenience stores, food outlets, and automatic car wash facilities. Additionally, our PPV agreements provide a variety of other programs such as: cappuccino carts, phone messaging centers, and auto repair services.

The overall results from this program are very satisfied customers and a high contribution to our bottom line. During FY 97, NEXCOM license and concession agreements generated income of \$39.1M.

In February 1998, we opened our first family style restaurant, Applebee's, at Naval Base Norfolk. The contract was awarded 6 November 1997 and the restaurant opened 95 days later on 23 February 1998. Though still too early in the operation of the restaurant to tell how it will fare, NEXCOM has been advised that on its first day of operation the Naval Station Norfolk Applebee's posted higher revenues than any other Applebee's first day operation in the Tidewater area.

Many of our PPVs are with small businesses from the local community providing services such as barber/beauty, laundry/dry cleaning, optometry services, TV repairs, etc. We also contract with vendors that are required to have system-wide capabilities. The contractor (franchiser) then subcontracts with local small businesses to actually provide the service. Often, a franchise operator on the base owns the off-base service outlet. For example, we have 71 McDonald's restaurants on our Navy bases; 24 of those are owned and operated by local franchisees, the remaining 47 are owned and operated by McDonald's Corporate Headquarters. Similarly, our recent award to the Subway franchiser for operations at 60 locations will be provided almost exclusively through local franchisees.

***What other information would help another program evaluate its applicability towards their program?***

Before deciding to expend scarce NAF dollars to finance the design, construction, and operation of a food (or other) facility, other programs should look to the viability of a PPV. In making its determination, any NAF activity should consider all potential costs of internal or "direct-run" operations, such as design, construction, facility maintenance, equipment procurement and maintenance, replacement (i.e., insurance) costs in the event of catastrophic loss, hiring and administration of personnel, as well as potential environmental and litigation costs. In almost every instance, demographic information will determine the viability of a business venture; however on board military installations pure demographic information is not always the best indicator. Vehicle traffic counts and sales data from Exchange or Commissary stores is more often a better barometer of the true potential of a business venture, provided the business will be located close to the Exchange, Commissary or other location with high vehicular or "foot" traffic.

## CONTRACTING – OTHER TRANSACTION AGREEMENTS

### ◆ Other Transaction Agreements (OTA)

⇒ (Contracting – Other Transaction Agreements) -- Other Transaction Agreements (OTA)

SPAWAR

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***What is the name of your program?***

Multifunctional Information Distribution System (MIDS)

***Give a description of this idea and how it fits in the program:***

MIDS was the first major acquisition program to use the OTA authority granted to the Military Services by the 1997 DoD Appropriations Act. OTAs for Production Readiness were used in lieu of traditional contracts to accelerate and streamline expansion of the industrial base to manufacture and support MIDS as the Link 16 standard for international tactical data link systems.

***How is it innovative and creative?***

Although not specifically required by statute, MIDS OTAs successfully incorporated cost sharing requirements which will allow the government to develop four U.S. and international industrial teams with only \$12M government investment. This compares with past government efforts to develop a single alternative source for a less complex electronics equipment that cost nearly \$100M.

***How has this new improvement been applied?***

The processes used to competitively select Production Readiness OTAs incorporated innovative acquisition procedures, including a day long industry forum for all potential contractors, one-on-one meetings with potential offerors, the use of electronic bulletin boards for government/industry communications, the use of oral presentations in lieu of written proposals, and oral presentations to document and assess the Past Performance of competitors. All of these activities were conducted in a very effective teaming arrangement with the Defense Contract Management Command.

***What were the results and lessons learned in developing this improvement?***

OTA contractors were required to submit qualification and performance plans for their prototyping efforts using commercial procedures and processes. This afforded the maximum tailoring of activities and processes to the unique challenges facing each OTA team. Program contracts and "agreements" continued MIDS implementation of open and commercial standards and practices, as compared with the tradition of military unique standards and practices. In 1997, MIDS documented the most aggressive implementation of industrial parts in sophisticated avionics being built for tactical aircraft use, with over 61 percent of the active parts being industrial or commercial grade. This has been achieved by innovative engineering design that minimizes the power dissipation of the terminal, while maintaining platform cooling air requirements constant.

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**CONTRACTING – PROPOSAL EVALUATION**

**◆ Forward Pricing Agreements**

⇒ **(Contracting – Proposal Evaluation) -- Forward Pricing Agreements**

NAVAIR

**Warren W. Riedell**

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***What is the name of your program?:***

Pioneer Unmanned Aerial Vehicle/Predator Unmanned Aerial Vehicle

***Give a description of this idea and how it fits in the program:***

As is the case with all other programs, the Pioneer and Predator programs are under ever increasing pressure to streamline the procurement process and achieve early obligation of program funds. While not new, forward pricing agreements are an extremely effective means of achieving these goals. With only one exception, forward pricing rate agreements have been established with all major contractors for both of the above programs. This has resulted in reduced procurement lead-times and earlier obligations.

***How is it innovative and creative?***

There are several benefits to the Government and contractor from the establishment of forward pricing agreements. Pricing agreements may be established repetitively in the context of each procurement. However, it is far more efficient for both the Government and contractor to establish such agreements in the context of a single negotiation. In addition to overall cost and time savings, pricing agreements greatly reduce the time and effort required to negotiate individual procurements. This process also generates a better product which is fair and reasonable prices for both contracting parties.

***How has this new improvement been applied?***

Once established, forward pricing agreements apply to all procurements entered into by the Government and the contractor. Therefore, the applicability and the benefit is widespread.

***What were the results and lessons learned in developing this improvement?***

Negotiation lead-times were reduced and obligations improved for all procurements.

***What other information would help another program evaluate its applicability towards their program?***

This method of doing business is beneficial to programs with substantial procurement activity. The establishment of forward pricing agreements requires coordination and commitment by the PCO, ACO, auditor and the contractor. However, this investment is more than offset by the benefits.

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**CONTRACTING – RFP DEVELOPMENT**

- ◆ Application of early industry involvement in RFP Development
- ◆ Cross Reference and Compliance Matrix (CRACM)
- ◆ Elimination of the Technical Evaluation Board (or combination of TEB and CARP)
- ◆ One Pass Proposal & Contract preparation

⇒ **(Contracting – RFP Development) -- Application of early industry involvement in RFP Development**

NAVSEA

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***What is the name of your program?***

Advanced Integrated Electronic Warfare System (AIEWS), AN/SLY-2(V)

***Give a description of this idea and how it fits in the program:***

PEO(TAD) used a Broad Agency Announcement (BAA) to award two contracts to:

- a) Identify critical characteristics and capabilities of the notional AIEWS;
- b) Identify the most promising system/subsystem concepts;
- c) Demonstrate that the critical technologies associated with the most promising system/subsystem concepts posed minimal cost, performance, and schedule risk; and
- d) Assist the Program Office in defining a low risk, cost effective, phased development plan for the most promising system.

The results from the BAA efforts were incorporated into a draft RFP that was released to industry for review and comment.

***How is it innovative and creative?***

By applying focused industry involvement early (from the two BAA contractors) in the RFP development process and then providing broader industry review (from all interested and cleared contractors) of the draft RFP, maximum industry input was obtained in developing a streamlined RFP.

***How has this new improvement been applied?***

This approach was applied during the AIEWS Engineering and Manufacturing Development (EMD) RFP preparation and source selection.

***What were the results and lessons learned in developing this improvement?***

The two tiered industry involvement in the RFP development enhanced industry understanding of the AIEWS technical needs, streamlined the EMD RFP helping to eliminate non-value added RFP requirements, and facilitated an accelerated source selection process.

***What other information would help another program evaluate its applicability towards their program?***

Application should be geared to technically complex programs or those where uncertainty as to the breadth and scope of the industrial technical base exists.

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**⇒ (Contracting – RFP Development) -- Cross Reference and Compliance Matrix (CRACM)**

NAVAIR

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**What is the name of your program?**

*EA-6B Improved Capabilities III (ICAP III)*

***Give a description of this idea and how it fits in the program:***

The Cross Reference and Compliance Matrix verifies that all requirements of the solicitation have been properly responded to in the proposal. It also saves time for both the contractor and source selection team by allowing a simple “Yes / No / Exceed” to basic requirements and requesting specifics on only certain requirements.

***How is it innovative and creative?***

CRACM allows offerors to respond to the basic proposal requirements with a simple “Yes / No”, annotate if their response “Exceeds” the requirement, or in certain cases allows the offerors to “Specify” how the requirements will be met. This procurement process reform has resulted in a more efficient proposal and source selection process.

***How has this new improvement been applied?***

CRACM has been applied in all contractor proposals to the EA-6B ICAP III Program.

***What were the results and lessons learned in developing this improvement?***

CRACM was an extremely effective tool for both the offerors and the source selection team.

For the Offerors: CRACM allowed them to answer a simple “Yes / No / Exceed” for basic requirements. No further documentation was required for “Yes / No” and they could articulate how they “Exceeded” the requirement. This allowed them to focus their efforts on the few requirements which requested that they “Specify” how the requirements were addressed properly.

For the Source Selection Team: CRACM saved time in evaluation:

- verified that all requirements were met
- basic requirements compliance only required verification of a “Yes / No / Exceed” response
- only requirements with “Specify” needed an in depth evaluation

***What other information would help another program evaluate its applicability towards their program?***

A copy of the introduction and instructions for the Cross Reference Compliance Matrix used in the EA-6B ICAP III Request For Proposal (available from the POC).



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⇒ **(Contracting – RFP Development) -- Elimination of the Technical Evaluation Board (or combination of TEB and CARP).**

SPAWAR

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***What is the name of your program?***

Technical and Engineering Support for Information Support Systems, Command/Control Communications Systems and Implementation Class Desks.

***Give a description of this idea and how it fits in the program:***

In this procurement we used a single evaluation board to prepare a report recommending award of a competitive contract. The technical “half” of an offeror’s proposal was presented orally to the evaluation team. A question previously undisclosed to offerors is presented to them for the first time during their presentation of a technical proposal.

***How is it innovative and creative?***

Reduces duplicative effort inherent in preparing the technical part of the CARP report. Oral presentations reduce the time required for review of technical proposals by forcing evaluation boards to convene and evaluate. In addition by asking an undisclosed question, it forces offerors to think on their feet. It gives evaluators a revealing look at an offeror’s understanding of subject area(s) and how an offeror approaches a problem.

***How has this new improvement been applied?***

The processes discussed above were utilized in the evaluation and selection of vendors for IDIQ contracts supporting PMW 152, PMW 176 and SPAWAR 05F.

***What were the results and lessons learned in developing this improvement?***

Use of a CARP without a TEB (or combining their functions) greatly reduced the time required for preparation of the report recommending award(s). Did need to pay close attention to the selection of weights and the timing of their application to ensure CARP members did not know the overall impact of their “raw” scores on the award recommendation. Also needed to take care to incorporate cost information only after evaluation of technical proposals was complete. We capitalized on the immediacy of oral presentations by devising a schedule that called for the preparation of the evaluation of proposals on the same day as they were presented. Be sure to clearly define relevance of oral vice written parts of proposal. Responses to the previously undisclosed question effectively revealed the knowledge and experience of the offerors. Besides the quality and accuracy of the responses, the manner in which each offeror approached the question revealed much about their understanding of the work to be done under the contemplated contract.

***What other information would help another program evaluate its applicability towards their program?***

Oral presentation with one evaluation body greatly reduces the acquisition time and are ideal for award of competitive support service contracts.

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⇒ **(Contracting - RFP Development) -- One Pass Proposal & Contract preparation**

NAVSEA

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***What is the name of your program?***

Acoustic Rapid COTS Insertion (A-RCI)

***Give a description of this idea and how it fits in the program:***

Working with contractors in their preparing a proposal while refining requirements definition allows contracts to be issued that are understood by the entire project team, are affordable and are executable by the contractor.

***How is it innovative and creative?***

The Navy expends too many hours and dollars resolving issues with contracts. The contract should be the vehicle that is used for formal communication. With a clear understanding of the contract, and the contract being executable by the contractor, effort is focused on the job at hand, not the contract.

***How has this new improvement been applied?***

A-RCI Program applied this process to major development contract changes as well as establishing production contracts with varying success.

***What were the results and lessons learned in developing this improvement?***

Results are excellent. Each contract and contractor have unique aspects that make a cookie cutter approach unrealistic.

***What other information would help another program evaluate its applicability towards their program?***

Hours spent up front during the One Pass contracting effort will save tens or hundreds of hours through the life of the program.

▼ ▼  
**CONTRACTING – SOURCE SELECTION**

- ◆ ATFLIR Source Selection Observation Team
- ◆ Performance Partnering utilizing the Realistic Expenditure Decision Using Commercial Expertise (Reduce) method
- ◆ Support Services Contracting

⇒ **(Contracting – Source Selection) -- ATFLIR Source Selection Observation Team**

NAVAIR

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F/A-18 Advanced Targeting Forward Looking Infrared

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***What is the name of your program?***

F/A-18 Advanced Targeting Forward Looking Infrared (ATFLIR)

***Give a description of this idea and how it fits in the program:***

The ATFLIR acquisition strategy is to award a sole source EMD contract for the development, fabrication, test and integration of the ATFLIR into the F/A-18 C/D and E/F aircraft weapon systems. McDonnell Douglas Corporation (MDC), a wholly owned subsidiary of The Boeing Company, as the sole designer, developer, and manufacturer of the F/A-18 aircraft weapon systems has the requisite knowledge, experience and technical data required to successfully complete the complex integration of the ATFLIR into the F/A-18 C/D and E/F aircraft weapon system in the time required. Accordingly the government selected MDC to provide the integrated ATFLIR capability as contractor furnished equipment.

MDC conducted a competitive source selection to determine the ATFLIR hardware subcontractor in accordance with its internal procedures. To ensure MDC was impartial in its ATFLIR subcontractor selection, the government was an observer of MDC's source selection process.

***How is it innovative and creative?***

The government's observation process is innovative because it allowed the government to attend key Boeing source selection meetings, review the proposals, monitor Boeing's evaluation and review their scoring process.

***How has this new improvement been applied?***

The observation process allowed the government to conclude that Boeing's competition was fair and reasonable and best value for the Navy. The government concurred with Boeing's selection of Raytheon as the major subcontractor for ATFLIR development.

***What were the results and lessons learned in developing this improvement?***

The results were government insightful knowledge of Raytheon's ability to meet ATFLIR performance specification, and the assurance of a fair and equitable source selection process.

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⇒ **(Contracting – Source Selection) -- Performance Partnering utilizing the Realistic Expenditure Decisions Using Commercial Expertise (REDUCE) method**

NAVFAC

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***What is the name of your program?***

Performance Partnering – Realistic Expenditure Decisions Using Commercial Expertise (REDUCE)

***Give a description of this idea and how it fits in the program:***

NAVFACENGCOM's performance partnering initiative, REDUCE, is an innovative source selection process developed to reduce Base Operating Support (BOS) contracts by achieving up front contract cost savings while maintaining the integrity of source selection process. The REDUCE method involves a two phased evaluation process where cost-effectiveness is promoted by assigning technical evaluation credit for cost savings.

**Phase I:**

Submission and evaluation of proposed "Cost Savings Spec Revisions". Phase I proposals are voluntary. Only the proposed revisions to the specification will be evaluated. Phase I proposals must:

- Identify exact portions of existing RFP to be revised.
- Provide exact replacement specification language.
- Explain how revisions will save costs.
- Identify any mandatory instruction, policy or manual that must be revised/waived.
- Provide estimate of cost savings and basis of estimate.

A Cost Savings Board (CSB) evaluates the proposals against two criteria:

- Viability
- Acceptability

The CSB also evaluates "realism" of proposed cost savings and documents its evaluation using special forms to rate proposals based on magnitude of acceptable cost savings. The CSB then prepares a board report that is sent to the Source Selection Board (SSB).

**Phase 2:**

Submission and evaluation of price proposal and remainder of technical proposal. The RFP is amended to incorporate accepted specification revisions. Price proposals and remainder of technical proposals are submitted. The traditional Technical Evaluation Board (TEB) and the SSB is conducted. The TEB incorporates CSB ratings into final technical ratings.

***How is it innovative and creative?***

The NAVFACENGCOM Cost Savings Initiative, Performance Partnering Using the REDUCE source selection method has demonstrated exemplary innovation and best acquisition practices.

REDUCE:

- Promotes continuous improvement of the acquisition process;
- Combines best practices of world class customers and suppliers;

- Promotes partnering with industry; and
- Accomplishes specific goals associated with acquisition reform initiatives.

***How has this new improvement been applied?***

Due to forecasted budget reductions in the operation and maintenance of our infrastructure, NAVFACENGCOM aggressively began to examine opportunities to reduce BOS contract costs. The objective is to identify efficiencies in both Navy operations and in the BOS contract specifications which would result in cost savings to the Government, without sacrificing mission readiness and accomplishment. Because of the nature of the BOS contract, the BOS contractor has in depth knowledge of the facilities, operations, and requirements of the base. For this reason, the Government intends to partner with the BOS contractor to achieve cost savings through the identification of efficiencies, elimination of redundant contract requirements, implementation of new technologies, integrating the best practices of world class suppliers.

***What were the results and lessons learned in developing this improvement?***

The REDUCE source selection method was used to award the BOS contract at NAS Fallon, NV. Five out of seven firms submitted a total of 180 cost savings proposals. 20 of those proposals were accepted by the government for a total savings of 6%/year or \$1M/yr. Only 3 weeks was added to the solicitation process. There were no protests from proposers on this new process.

***What other information would help another program evaluate its applicability towards their program?***

Pros:

- Upfront contract cost savings.
- Better Specifications.
- Incorporates industry expertise.
- Provides incentive for serious cost savings.
- Maintains integrity of evaluation process.

Cons:

- Increases proposal submission and evaluation time.
- Requires additional evaluation personnel.
- Requires Cost/Benefit trade off with customers.

**⇒ (Contracting – Source Selection) -- Support Services Contracting**

NAVAIR

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***What is the name of your program?***

Support services contracting for PEO(CU). The innovation cited below was used on support service competitions for PMA-263/PM-PS (Navy Pioneer UAV and USAF Predator UAV) and for PMA-208 Targets and Decoys support services competition.

***Give a description of this idea and how it fits in the program:***

We performed reference checks on key personnel with their individual customers regarding the key personnel's past performance as part of our overall Past Performance evaluation.

***How is it innovative and creative?***

Normally, past performance involved only a check on the offeror's past performance of a contract. Past customers/individuals supported by the key personnel were not actually contacted for comments regarding the key

personnel that worked supporting them.

***How has this new improvement been applied?***

By actually calling former customers of key personnel and making that part of the formal source selection process for Past Performance.

***What were the results and lessons learned in developing this improvement?***

We learned that it is a significant undertaking to contact all the previous personnel supported by a proposed key person (going back three years). Since only past performance risk ratings of “high risk,” “medium risk” and “low risk” were used, and since only the “high risk” rating constitutes an unacceptable rating, we are not sure the effort provided a significant discriminator for evaluation purposes. Most customers gave their support personnel low risk ratings. Very few were “medium risk.” None were “high risk.” Perhaps the primary impact of using this criteria is that it may force offerors to check out their proposed key personnel more thoroughly on their own so that there are no unpleasant surprises during the evaluation process. It may also act to remind key personnel that they need to be aware that their performance may be subject to reference checks and that sustained, quality support to their customers is imperative.

***What other information would help another program evaluate its applicability towards their program?***

Determine how important the key personnel are, how many must be evaluated, and how many other evaluation criteria are in the source selection plan. Also determine how many evaluators will be available to pursue the information, and whether the effort of running down the information will actually impact the evaluation in a substantive manner. It might be more appropriate to perform some reference checks on a few key personnel, but do it as part of the overall contract past performance evaluation process.

## CONTRACTING – STREAMLINED ACQUISITION TECHNIQUES

- ◆ Parametric cost modeling, the combination of long lead time material procurements, electronic submission of a streamlined proposal, and electronic processing of a concurrent audit, technical evaluation, fact-finding, and pre-business clearance. This Acquisition Reform techniques was employed by an inter-disciplinary government/contractor team. Navy/Raytheon F-100 Contract Team

⇒ **(Contracting – Streamlined Acquisition Techniques) -- Parametric cost modeling, the combination of long lead time material procurements, electronic submission of a streamlined proposal, and electronic processing of a concurrent audit, technical evaluation, fact-finding, and pre-business clearance. This Acquisition Reform techniques was employed by an inter-disciplinary Government/contractor team. Navy/Raytheon F-100 Contract Team**

NAVSEA

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***What is the name of your program?***

AEGIS Systems Acquisition Division's (PMS 400G) procurement of the Spanish Foreign Military Sales (FMS) F-100 Program AEGIS AN/SPY-1 Transmitter and Continuous Wave Illuminator (CWI) equipment.

***Give a description of this idea and how it fits in the program:***

The Spanish F-100 procurement coincided with the U.S. Navy's Advance Procurement for the FY 98-01 Multi-Year Procurement (MYP) of AEGIS Weapons Systems (AWS). Combining the procurement of both requirements for long lead-time material achieved economies of scale and reduced projected costs.

***How is it innovative and creative?***

Capitalizing on combining these long lead time material procurements, the Navy and Raytheon convened and empowered an IPT to review the Spanish F-100 contract methodology. It was determined that the Spanish procurement was adaptable for use of parametric cost modeling, which was then validated and used to estimate the costs for each task. Following the agreements made by the IPT, Raytheon then submitted a 40 page, all-inclusive, electronic proposal that reflected a contract value reduced by \$9M.

***How has this new improvement been applied?***

As a result of the cost savings and reduced cycle times achieved by this team's ingenuity, the Navy and Raytheon are pursuing further application of these AR initiatives to other procurements.

***What were the results and lessons learned in developing this improvement?***

Through the cooperative use of these AR techniques, the team reduced cycle time by 61%, from 180 days to 69 days. This resulted in reducing the contractor effort in proposal preparation, fact-finding, negotiation and post-award audit support by 52%, from 690 man-days to 330 man-days. The Government effort in proposal evaluation, negotiation and post award audit support was reduced by approximately 238 man-days, from 386 man-days to 148 man-days. These reductions resulted in the shortest award cycle of a major AWS production contract. These AR techniques produced overall cost savings of 9%, from \$102M to \$93M, with the final negotiated value of \$86M.

***What other information would help another program evaluate its applicability towards their program?***

Under traditional procurement practices, the Spanish F-100 procurement would have been a stand-alone procurement requiring the contractor's technical/cost proposals with certified cost and pricing data. Validation of

the parametric cost estimates based upon the maturation of the AWS Program facilitated approval of the waiver from the requirements to submit certified cost and pricing data.

In summary, the results of this procurement demonstrated that shifting acquisition paradigms through Government/industry cooperation can shorten acquisition cycle times, lower costs, and enable all parties to apply risk management techniques to attain even greater savings. The successful conclusion of this procurement resulted in a cost savings of \$9M and all members of the Navy/Raytheon F-100 Contract Team reported that it was a Win-Win experience.



▼ ▼  
**COTS**

- ◆ Commonality amongst the various surface ship, surveillance and submarine platform towed arrays by utilizing COTS common array components thus reducing life cycle cost and configuration management
- ◆ Corrosion Coatings and Corrosion Sensors
- ◆ Define certification attributes early
- ◆ Lesson learned from expecting COTS equipment to perform over its full environmental range as specified
- ◆ Lesson Learned: Sometimes it may be appropriate to escort a private vendor on travel
- ◆ Managing the COTS obsolescence Issues for a Program Office and providing a tool to develop POM budget figures to support the COTS Refresh/Technology Insertion requirements using smart Programmatic decisions
- ◆ Use of COTS Components In System Design

⇒ **(COTS) -- Commonality amongst the various surface ship, surveillance and submarine platform towed arrays by utilizing COTS common array components thus reducing life cycle cost and configuration management**

NAVSEA

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TB-29( ) Thinline Towed Array

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***What is the name of your program?***

TB-29( ) Thinline Towed Array

***Give a description of this idea and how it fits in the program:***

Representatives from the surface, surveillance and submarine communities, as well as the Advanced Systems Technology Office (ASTO), have been working together. As an IPT, they have not only leveraged off of existing community efforts but also combined forces to design common array modules that would support all of their respective mission requirements. This will be achieved primarily by the use of a common array architecture.

Today, amongst the three communities, there are approximately eight different configurations of fatline and thinline arrays. Ultimately, the group's goal is to drive towards one single fatline and one single thinline acoustic aperture for all applications.

The IPT has determined that using COTS common towed array components is the most cost effective and timely solution to achieving their goal.

***How is it innovative and creative?***

To date, towed arrays for the three communities have been procured from different vendors who typically use special unique (and proprietary) processes to manufacture the hardware. As a result, the cost of the arrays has steadily risen due to requirements for custom design electronic components.

Through the use of COTS based technology, a simplified telemetry architecture has been developed that

will provide increased dynamic range, improved flexibility for expansion and reconfiguration, and commercial vendor support, at a reduced cost.

As a side benefit, by working towards developing common hardware for multiple program offices, there is also the potential to address the Navy's current initiatives to streamline the current infrastructure by combining program offices and their respective support activities. Also, based on a study commissioned by SEA 00 in 1995, the budget cannot continue to support multiple array manufacturers. By reducing the number of array configurations, and thus vendors, we also support the Navy's objective to maintain a solid industrial base capability to manufacture towed arrays in the future.

***How has this new improvement been applied?***

For the upcoming competition for the TB-29( ), COTS-based telemetry components developed under the Navy's Small Business Innovative Research program will be provided as GFP, if requested, although vendors will be permitted to offer an alternative. Furthermore, since this competition will be a "winner take all", it will support procurement for all towed array requirements for the three communities. We are thus able to achieve economies of scale as well as have one vendor building a common array to the same performance specifications.

***What were the results and lessons learned in developing this improvement?***

The RFP is still being developed at this time so the results have not yet been realized. However, regarding lessons learned:

- Using the IPT process to facilitate coordination amongst several communities is a good approach and has been invaluable in trying to realize reduced life cycle costs.
- Engaging our industry counterparts early in the process allows for reduced acquisition time.

***What other information would help another program evaluate its applicability towards their program?***

None

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⇒ **(COTS) -- Corrosion Coatings and Corrosion Sensors**

NAVAIR

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***What is the name of your program?***

PMA-299 Fleet Support Team.

***Give a description of this idea and how it fits in the program:***

This process innovation developed COTS corrosion coating technology applications for fleet H-60 helicopters. The FST leveraged existing corrosion coating technology used by commercial airlines for application in H-60s. As a complimentary effort, the FST is also leveraging an SBIR for corrosion sensor technology.

These two efforts target the single largest maintenance man-hour per flight hour driver: corrosion. Our FST Affordable Readiness Plan has targeted corrosion initiatives having the largest single relative return on investment in reduction of maintenance man-hours per flight hour.

***How is it innovative and creative?***

Combining COTS corrosion technology with leading edge corrosion sensor detection technology is not being pursued by any other Program Office. This combination of existing coatings and new sensor technology allows immediate relief to the fleet via the corrosion coating effort and long term improvement via the sensor

technology effort. In addition, the FST is applying different COTS corrosion coatings, using different application technologies during the Integrated Maintenance Concept (IMC) aircraft baselining effort. This has allowed NADEP engineers a controlled environment to experiment with various coatings, applications and sensors in order to adapt the most promising technologies for use in fleet H-60s.

***How has this new improvement been applied?***

NADEP Cherry Point engineers have worked with NADEP Jax and the Army to develop a comprehensive plan to apply COTS and R&D corrosion technology.

***What were the results and lessons learned in developing this improvement?***

Lessons learned:

- 1) COTS can help in certain maintenance applications without significant alteration.
- 2) The FST Affordable Readiness program enabled the team to target corrosion as the largest maintenance man- hour drain on the fleet.
- 3) Leverage other program office initiatives.
- 4) Leverage relevant SBIR initiatives.

***What other information would help another program evaluate its applicability towards their program?***

Wide dissemination of the results of this initiative will be shared with other Program Offices.

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**⇒ (COTS) -- Define certification attributes early**

NAVSEA

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***What is the name of your program?***

Atmospheric Dive System

***Give a description of this idea and how it fits in the program:***

Problems were experienced due to inadequate definition of certification attributes before funding levels were established. This created a challenge for the ADS Program. Specifically, funding levels for the program were established before the products were fully defined. As the certification attributes matured, the cost of the system escalated. Using CAIV, resulted in the number of systems being reduced from 6 to 3. A root cause of this problem was attributed to parallel design and build efforts which caused undesirable impacts on cost and schedule. This situation was unavoidable because the schedule was driven in the effort to obligate funds before they expired. Exchanging the allocated funding for out-year funding was not an option.

***What were the results and lessons learned in developing this improvement?***

There was no improvement item developed. There was a realization that if we could start over, we would have done things differently. There was also a realization that it is very difficult to achieve a high quality, low cost product in a short time frame. One of the variables (quality, cost or schedule) has to give.

***What other information would help another program evaluate its applicability towards their program?***

The ADS is a COTS item that had to be slightly modified to meet Navy mission and certification requirements.

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⇒ **(COTS) -- Lesson learned from expecting COTS equipment to perform over its full environmental range as specified.**

NAVAIR

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***What is the name of your program?***

Pacific Missile Range Facility (PMRF) Shallow Water Range

***Give a description of this idea and how it fits in the program:***

A shallow water range program recently suffered a 25% overrun when a "no-brainer" vendor item purchased by the prime contractor on a commercial spec off-the-shelf did not perform according to spec. In retrospect, this incident was a wake-up call for the prime, whose usual experience involved dealing with mil-spec parts as a matter of routine. When surveying industry, the prime selected a middle of the road supplier based on their publicly disclosed specification material. The prime assumed that vendor testing for the purchased part, a coupler used to attach underwater transducer nodes to a multiplexed fiber optic network, was sufficient to qualify the part according to the commercial specification. In reality, the vendor had qualified the basic coupler, but not the heavy duty jacketed variant sold to the prime. Not only did the vendor testing turn out to be limited in scope, not even proving the performance at specification temperature extremes, but the heavy duty variant was completely untested. Before problems arose, this part was considered to be so low risk, that both government and contractor engineers dismissed any thought of potential failure as a risk that needed attention. However, when optical circuit failures started appearing, it became clear that thermal expansion/contraction differences between the coupler and the heavy duty protective covering was causing significant tensile stress and failure. Much of the cost overrun was caused by schedule impacts as a well planned baseline disintegrated. The lesson learned is that commercial qualification of any critical part must be considered suspect until proven otherwise. Such parts must be considered as risk items, no matter how benign they seem.

***How is it innovative and creative?***

It was innovative in dropping Military Specification Requirements from the program.

***How has this new improvement been applied?***

In the future more attention will be given to risk analysis of proposals to use COTS.

***What other information would help another program evaluate its applicability towards their program?***

In moving to the COTS world there is no guarantee that items have been fully tested and particular attention has to be paid to ensure that items are suitable for use in the required environment.

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⇒ **(COTS) -- Lesson Learned: Sometimes it may be appropriate to escort a private vendor on travel**

NAVSEA

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***What is the name of your program?***

Atmospheric Dive System

***Give a description of this idea and how it fits in the program:***

When dealing with a private vendor, the government should not place itself in a position where the vendor can give programmatic direction without the Project Manager's knowledge. A situation arose where a private vendor wanted to use a Navy Barge to support Builder's trial for the ADS. The vendor visited the barge without anyone from the Program Office present. During their visit, they requested changes/modifications to the barge which the barge master interpreted as direction and planned to charge the Program Office. Although this situation was resolved before any charges were incurred, a potential dispute could have been avoided altogether if a Program Office representative were present with the vendor during this particular visit.

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⇒ **(COTS) -- Managing the COTS obsolescence Issues for a Program Office and providing a tool to develop POM budget figures to support the COTS Refresh/Technology Insertion requirements using smart Programmatic decisions**

NAVSEA

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***What is the name of your program?***

Program Executive Office Undersea Warfare - PMS 411 SQQ-89 Program Office (Surface Sonar Systems)

***Give a description of this idea and how it fits in the program:***

This management process and tool allows a program manager to prepare POM submissions on COTS products with a good level of confidence and provides documentation that is supportable and defensible. The tool allows the program manager to re-run program decisions for development, production, installation, and support with budget figures to make more confident decisions based on supportability costs, not just development costs.

***How is it innovative and creative?***

To date, we have seen no one who has developed a process or a tool set for COTS.

***How has this new improvement been applied?***

We are now using it in our program office. We have briefed at various conferences/symposium. We have briefed various OPNAV sponsors and the AEGIS group took our brief up to ASN(RDA). I am on the NAVSEA Executive Steering Committee for COTS and will brief at that Symposium in August. I also have a paper in on this for the ASE Symposium in March. This process could be used across Navy wide programs.

***What were the results and lessons learned in developing this improvement?***

We have found that the budget rules for procurement of spares does not support COTS, that the acquisition rules do not support technology refresh as a legitimate program element for supportability and that the Navy Supply Support system is not set up to handle COTS. All of which we are trying to address to the appropriate levels.

***What other information would help another program evaluate its applicability towards their program?***

Any office that has to deal with COTS supportability will benefit from this information.

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⇒ (COTS) -- Use of COTS Components In System Design

NAVSEA

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Ship Self Defense System

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***What is the name of your program?***

Ship Self Defense System (SSDS)

***Give a description of this idea and how it fits in the program:***

The SSDS program introduced a significant new self defense capability to the ships of the United States Navy. The SSDS uses commercial processors and workstation equipment as well as an open system architecture to meet the self defense requirements of the LSD/CV(N)/LHD/LPD ship classes. The SSDS system has been designed to be software oriented thereby freeing itself from the requirement to upgrade expensive proprietary hardware suites that were designed solely to support a hardware-centric method of performing ship self defense. The ability to upgrade software allows a significant cost savings compared to hardware based combat systems.

***How is it innovative and creative?***

The use of commercial components is relatively new but is becoming widely accepted in the defense industry.

***How has this new improvement been applied?***

The SSDs used COTS in the successful design and production of the SSDS. The SSDS recently achieved Milestone III where ASN(RD&A) approved SSDS for integration with ACDS and CEC. COTS will be used for new equipment produced in support of that integration effort.

***What were the results and lessons learned in developing this improvement?***

The approach was applied in the design of the SSDS which went from program initiation at Milestone II to IOC in twenty five months and saved over \$80M from initial contractor estimates. Through the use of standardized components, system design proceeded quickly allowing more time for software development. This procedure is more cost effective than previous practices in the defense industry.

▼ ▼  
**COTS/NDI**

- ◆ Advisory Multi-Step Process
- ◆ Alpha Acquisition
- ◆ Common display console for ATC & LS systems
- ◆ Configuration Control and Logistics Support of COTS/NDI Equipment
- ◆ Oral Proposals
- ◆ Request for Information (RFI), Commercial Acquisition procedures (pursuant to FAR Part 12)
- ◆ Try Before You Buy
- ◆ Use of CANDI components to fulfill Naval Aviation Common Support Equipment Requirements

⇒ **(COTS/NDI) -- Advisory Multi-Step Process**

SPAWAR

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***What is the name of your program?***

Digital Modular Radio (DMR) (The procurement is in the solicitation phase.)

This is a firm-fixed price, IDIQ procurement for COTS/NDI equipment. An IPT was established at its inception. AR initiatives have been the focus of the team.

***Give a description of this idea and how it fits in the program:***

Advisory Multi-Step Process: This was implemented pursuant to the new regulations under FAR 15.202. This afforded the technical and contracting community the ability to receive technical information prior to the issuance of the RFP and determine if there were viable COTS/NDI solutions to the DMR requirements. It is expected that this will reduce the potential for receiving inadequate proposals. A reduced technical evaluation process for the final proposal is also anticipated.

One-on-one meetings with contractors: Individual meetings were held with over 10 potential offerors prior to RFP issuance. This included an exchange of ideas (not a technical presentation by the offerors). This approach also allowed contractors to get a grasp of the DMR requirements so that they would know if their products or solutions were appropriate for the fleet.

Advance Technical Proposals: As part of the RFP structure, portions of the technical proposals will be provided by the contractors in advance of the entire technical proposal and cost proposals. This will enable the technical evaluation team to begin its review and become familiar with the offerors' approaches/solutions. The intent is to reduce PALT and streamline the award process.

***How is it innovative and creative?***

Advisory Multi-Step process: This is the first procurement where SPAWAR is implementing this process as outlined in FAR 15.202.

One-on-one meetings with contractors: This is innovative because it was recognized that their might be a multitude of technical solutions as well as questions from the technical community. This reduced the potential for on-going questions during the solicitation phase. It is expected that this activity will result in fewer solicitation amendments and ultimately streamline the lead time to award a contract.

Advance Technical Proposals: This is creative because it is designed to expedite the technical evaluation phase. It is also the first procurement where SPAWAR is requesting advance proposals.

***How has this new improvement been applied?***

These processes (Advisory Multi-Step, One-on-one meetings, and Advance Technical Proposals) have been applied to the pre-solicitation and solicitation/review stages of the DMR procurement.

***What were the results and lessons learned in developing this improvement?***

Advisory Multi-Step process: This gave SPAWAR an idea of what technical solutions were available in the COTS/NDI environment. It also identified the scope of the competition.

One-on-one meetings with contractors: This enabled the technical and contracting community to address the scope of the DMR procurement and exchange ideas.

Advance Technical Proposals: It is anticipated that this approach will streamline the evaluation process and reduce acquisition lead time.

***What other information would help another program evaluate its applicability towards their program?***

Advisory Multi-Step process: This will be very useful when there are unknowns during market research. It is also helpful when products are changing from a MIL-STD definition to a COTS/NDI solution.

One-on-one meetings are excellent when there are many variables and potential solutions to the Navy's needs. This allows contractors and the Government to exchange ideas before the release of a solicitation.

Advance Technical Proposals: This is useful when there are a variety of evaluation criteria and contractors can segregate their responses. If some of the responses can be submitted in advance of more involved technical and cost proposals, this will enable the technical evaluation team to begin its review and ultimately reduce acquisition lead time.

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⇒ **(COTS/NDI) -- Alpha Acquisition**

SPAWAR

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***What is the name of your program?***

NESP Medium Data Rate (MDR)

This is a firm-fixed price, sole source procurement. An IPT was established at its inception. AR initiatives have been the focus of the team.

***Give a description of this idea and how it fits in the program:***

The IPT, consisting of SPAWAR 02, PMW-176 (the technical community), SPAWAR 01 (financial support staff), SPAWAR 00C (legal), DCMC, DCAA, and the Contractor worked together to develop the pricing



structure for this procurement. It was accomplished through real-time development of costs, negotiations and agreement on final prices, terms and conditions. This teaming effort significantly reduced the acquisition lead time. All processes were accomplished concurrently versus sequentially when developing the proposal and reaching final agreement.

***How is it innovative and creative?***

This was the first Alpha Acquisition accomplished by SPAWAR. The complexity of this sole source procurement lent itself to the innovative alpha acquisition approach.

***How has this new improvement been applied?***

This has been applied to the sole source environment.

***What were the results and lessons learned in developing this improvement?***

The results were that SPAWAR was able to take advantage of all of the IPT resources in a real-time acquisition environment. The approach resulted in a tremendous reduction in acquisition lead time. The total lead time was 91 days from receipt of the purchase request. (A typical sole source acquisition of this magnitude could take up to 2 years.)

***What other information would help another program evaluate its applicability towards their program?***

Alpha acquisition procedures are excellent for sole source procurements, new scope modifications, engineering change proposals, value engineering change proposals, claims, requests for equitable adjustments and defective pricing cases.

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⇒ **(COTS/NDI) -- Common display console for ATC & LS systems**

NAVAIR

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***What is the name of your program?***

Air Traffic Control and Landing Systems (ATC & LS)

***Give a description of this idea and how it fits in the program:***

The new fleet common console (AN/UYQ-70) can be used to supply a common display console to replace the many different ATC & LS consoles used throughout the fleet in various applications. Economies of scale and avoidance of development costs save time, money, fleet support resources, and lower Total Ownership Costs for the fleet hardware.

***How is it innovative and creative?***

It has never been done before in ATC & LS systems, which have heretofore used highly specialized display consoles for each specific operational task.

***How has this new improvement been applied?***

IPT of PMA, Operators, Engineers, and ATC fleet representatives met to work out previous impediments to commonality, and to evaluate SOTA display technology as applied to specialized systems and functions.

***What were the results and lessons learned in developing this improvement?***

This is a bold venture, but it's effects may be reduced (or more accurately, absorbed) into an impending IT-21 effort which is now underway. Technology advances very rapidly, and the "Let's go forward!" command must, at some point, be given.

***What other information would help another program evaluate its applicability towards their program?***

Look beyond display technology into other applicable technology areas, to achieve similar TOC savings.

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**⇒ (COTS/NDI) -- Configuration Control and Logistics Support of COTS/NDI Equipment**

NAVSEA

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***What is the name of your program?***

AN/SAY-1, Thermal Imaging Sensor System (TISS)

***Give a description of this idea and how it fits in the program:***

The Navy procured TISS as a COTS/NDI system. In order to achieve configuration control, and thereby enable logistics support of the system, the Navy had to establish where contractor-proprietary ends and government-owned begins.

***How is it innovative and creative?***

This is a “lesson learned”; not applicable.

***How has this new improvement been applied?***

This is a “lesson learned”; not applicable.

***What were the results and lessons learned in developing this improvement?***

The Navy learned that without precise contractual language stating the extent to which the government intends to exercise configuration control over a NDI system’s product baseline, the contractor will prove reluctant to release control of same along with the associated drawings and technical information. Without these drawings and information, it is difficult to develop meaningful logistics support for the program.

***What other information would help another program evaluate its applicability towards their program?***

When developing a RFP for a COTS/NDI system, establish precisely at what time and to what extent the government assumes configuration control of the product baseline.

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⇒ **(COTS/NDI) -- Oral Proposals**

SPAWAR

**Ellen Polen**

Global Broadcast Service (GBS)

02-32 (This program is on behalf of PD-17)

SPAWAR

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***What is the name of your program?***

Global Broadcast Service (GBS)

This is a firm-fixed price, IDIQ procurement for GBS terminals. An IPT was established at its inception. AR initiatives have been the focus of the team.

***Give a description of this idea and how it fits in the program:***

Oral proposals were conducted to allow contractors to meet with the Navy and present their technical, management and past performance approaches to the GBS requirements.

As required by the solicitation, contractors provided an oral presentation of their technical/management/past performance solutions to provide the GBS terminals. Contractors provided a copy of their presentation in power-point format at the close of the RFP. This represented their written technical proposal. Oral Presentations were conducted a week after the closing date. Presentations were 4 hours in duration and video taped. At the conclusion of each of the presentations, the Contractors clarified points of concern raised by the technical team. These were not considered discussions within the meaning of FAR. The technical evaluation was completed with a week and award was made shortly thereafter. This approach streamlined the process considerably.

***How is it innovative and creative?***

It was creative because oral proposals were not a common way of submitting technical/management and past performance proposals for complex GBS systems.

This was the first oral proposal solicitation where a relatively free exchange of information took place after each presentation. As a result, the oral presentations were very successful and enabled the Navy to quickly award the contract without discussion.

***How has this new improvement been applied?***

The use of oral presentations has been applied to a variety of acquisitions for hardware and services. Typically they are used when the technical community agrees that such a presentation will adequately define the contractor's ability to provide the product/services. This GBS acquisition has been a model to show the technical community the successful nature of oral presentation.

***What were the results and lessons learned in developing this improvement?***

Acquisition lead time was significantly reduced. This competitive procurement was awarded in 161 days from receipt of the purchase request. (Typically, acquisition lead time has averaged over 280 days.)

The use of a video tape was useful to the technical evaluation team.

The free exchange of clarifications to the oral presentations were vital to the overall understanding of the quality of the offerors' proposals.

***What other information would help another program evaluate its applicability towards their program?***

When deciding to use oral presentations it is useful to determine the extent to which the contractors can adequately describe their technical/management/past performance and/or cost approaches. It is also imperative that the technical team agrees to receipt of abbreviated technical/management/past performance proposals (in power point/slide presentation).

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**⇒ (COTS/NDI) -- Request for Information (RFI), Commercial Acquisition procedures (pursuant to FAR Part 12)**

SPAWAR

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***What is the name of your program?***

Challenge Athena Interim Solution – SHF Terminals (SHF) (The procurement is in the solicitation phase.)

This is a firm-fixed price, IDIQ procurement for COTS/NDI equipment. An IPT was established at its inception. AR initiatives have been the focus of the team.

***Give a description of this idea and how it fits in the program:***

RFI: This afforded the technical and contracting community the ability to receive technical information prior to the issuance of the RFP and determine if there were viable COTS/NDI solutions to the SHF requirements. It confirmed that this was available commercially and not a sole source procurement. The RFI also allowed contractors to provide good feedback and suggestions for the development of the RFP.

Commercial Acquisition procedures: As a result of the RFI, it was determined that a streamlined procurement could be conducted pursuant to FAR Part 12.

***How is it innovative and creative?***

RFI: This was an innovative way to have early communication with contractors. As a result, SPAWAR was able to validate the acquisition approach.

Commercial Acquisition procedures: This is creative because historically, the complexity of the terminals has been considered beyond an NDI or commercial solution. This acquisition approach is new for SHF terminals and products.

***How has this new improvement been applied?***

These processes (RFI and Commercial Acquisition procedures) have been applied to the pre-solicitation and solicitation/review/award stages of the SHF procurement.

***What were the results and lessons learned in developing this improvement?***

RFI: This gave SPAWAR an idea of what technical solutions were available in the COTS/NDI environment. It also identified the scope of the competition. Additionally, it provided essential information for the development of the RFP.

Commercial Acquisition Procedures: This will simplify the technical evaluation process and dramatically reduce acquisition lead time.

***What other information would help another program evaluate its applicability towards their program?***

RFI: This is very useful when there are unknowns during market research. It is also helpful when products

are changing from a MIL-STD definition to a COTS/NDI solution.

Commercial Acquisition Procedures: This is the standard when buying commercial/NDI products. It is important to obtain feedback from industry to determine if requirements can be satisfied through the acquisition of commercial/NDI solutions.

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⇒ **(COTS/ NDI) -- Try Before You Buy**

NAVSEA

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***What is the name of your program?***

AN/SAY-1, Thermal Imaging Sensor System (TISS)

***Give a description of this idea and how it fits in the program:***

As a part of the source selection process for the TISS contract award, offerors were required to demonstrate a production-equivalent system.

***How is it innovative and creative?***

This allowed the Navy to establish the degree to which an offeror's system is in fact COTS/NDI, which reduced risk to the program.

***How has this new improvement been applied?***

This requirement was included in the RFP released to industry.

***What were the results and lessons learned in developing this improvement?***

The result was a successful contract award that delivered an Engineering Test Unit within eight months of award date. Learned that requiring a demonstration of the system reduced the number of bidders to those who actually had a COTS/NDI system available, vice those who intended to become an "integration-house" for COTS/NDI sub-assemblies.

***What other information would help another program evaluate its applicability towards their program?***

Require that the system being demonstrated be production-equivalent to the greatest degree possible. The intent would be to limit the extent of changes in configuration from what the contractor currently has in production, to what they intend to bid. Any changes permitted have the potential of driving up costs due to unforeseen problems that might arise during integration of the system.

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⇒ **(COTS/NDI) -- Use of CANDI components to fulfill Naval Aviation Common Support Equipment Requirements**

NAVAIR

**Patrick Weaver**

Aviation Common Support Equipment  
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***What is the name of your program?***

Aviation Common Support Equipment Acquisition

***Give a description of this idea and how it fits in the program:***

Commercial and Non-Developmental Items are aggressively investigated as primary solutions to meet existing and future Support Equipment requirements.

***How is it innovative and creative?***

These CANDI procurements have opened up additional avenues to fulfill fleet requirements and allows current technology to be rapidly incorporated in the maintenance/servicing concept.

***How has this new improvement been applied?***

PMA-260 attempts to match all new Aviation Support Equipment requirements against existing commercial technology and then investigated to determine if CANDI components will meet the desired requirements.

***What were the results and lessons learned in developing this improvement?***

This acquisition method allows for rapid delivery of items to the fleet users at a reduced cost. Additionally, the fleet users are provided with state-of-the-art technology to repair and service aviation requirements in order to minimize turnaround time and manpower requirements.

***What other information would help another program evaluate its applicability towards their program?***

Program managers need to ensure applicable CANDI solutions are investigated prior to acquisition.

▼ ▼  
**COTS – OPEN SYSTEMS ARCHITECTURE**

- ◆ Moving into Open System Architecture to reduce costs and to allow future war fighting capabilities
  - AN/UPX-29
  - AN/UPX-34

⇒ **(COTS – Open Systems Architecture) -- Moving into Open System Architecture to reduce costs and to allow future war fighting capabilities – AN/UPX-29**

NAVAIR

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***What is the name of your program?***

AN/UPX-29 AEGIS IFF system.

***Give a description of this idea and how it fits in the program:***

Costly, obsolescent parts problems are overcome, aligns, more closely with industrial processes, reduces cost of ownership and life cycle support (TOC), while allowing potential for much less costly future expansion.

***How is it innovative and creative?***

Nothing like it was in this program until now.

***How has this new improvement been applied?***

Present acquisitions are using this approach, in contrast to the previous unique architecture of the past.

***What were the results and lessons learned in developing this improvement?***

Excellent results are anticipated, and lessons learned are that acquisition streamlining generally does not avoid basic life cycle support requirements. .

***What other information would help another program evaluate its applicability towards their program?***

War fighting abilities can be increased along with lower Total Ownership Costs.

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⇒ **(COTS – Open Systems Architecture) -- Moving into Open System Architecture to reduce costs and to allow future war fighting capabilities – AN/UPX-34**

NAVAIR

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***What is the name of your program?***

Shipboard Advanced RADAR Target Identification System (SARTIS), AN/UPX-34.

***Give a description of this idea and how it fits in the program:***

Costly, obsolescent parts problems are overcome, aligns, more closely with industrial processes, reduces cost of ownership and life cycle support (TOC), while allowing potential for much less costly future expansion.

***How is it innovative and creative?***

Nothing like it was in this program until now.

***How has this new improvement been applied?***

Upcoming acquisitions will be modified to require this approach.

***What were the results and lessons learned in developing this improvement?***

Excellent results are anticipated.

Lessons learned are that Acquisition Reform must adjust the infrastructure's processes and procedures (testing, logistics, associated staff checks & balances, etc.) to allow these streamlining approaches to work quickly, and to actually achieve the cost benefits.

***What other information would help another program evaluate its applicability towards their program?***

War fighting abilities can be increased along with lower Total Ownership Costs.



▼ ▼  
**COTS – PLANNING AND PROCUREMENT**

◆ Operational Capability Demonstration (OCD)

⇒ (COTS – Planning And Procurement) -- Operational Capability Demonstration (OCD)

NAVAIR

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***What is the name of your program?***

Air Station Support Equipment, subhead 42MR.

***Give a description of this idea and how it fits in the program:***

During source selection of a COTS product, faith is placed in the manufacturer to deliver a product indicated in quotation. OCD demonstrates the product/hardware. Process is video taped for future reference and team reviews. Also, this process assists in Best Value determinations.

***How is it innovative and creative?***

We have not seen or heard of a similar process in use. The OCD was video taped, it ensured that the product will meet Navy requirements, and it assisted in Best Value, as well as in defending against protest.

***How has this new improvement been applied?***

The OCD process was used by NAVAIR and the test activity (NAWC AD) during source selection of competing COTS products.

***What were the results and lessons learned in developing this improvement?***

Using the OCD ensured that the video mapper which was selected meets Navy requirements. Also, the video was an effective tool in resolving a protest from a losing offeror, who's product was proved a major failure in the OCD process.

***What other information would help another program evaluate its applicability towards their program?***

Obtain additional information from our contracts and legal team members, who were involved in RFP development, contract award, and in subsequent resolution (favorable) of a losing offeror's protest.

▼ ▼  
**COTS – TEAMING**

- ◆ Cooperative evaluation of commercial (COTS) security products to determine application to Naval requirements
- ◆ Inclusion of a commercial hardware vendor and systems solutions provider as part of the hardware IPT

⇒ **(COTS – Teaming) -- Cooperative evaluation of commercial (COTS) security products to determine application to Naval requirements.**

SPAWAR

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***What is the name of your program?***  
ISSP

***Give a description of this idea and how it fits in the program:***

SPAWAR PMW 161 is teaming with industry to evaluate COTS security products in a virtual private network called the INFOSEC Research and Engineering Network (IREN). The IREN network includes multiple industry participants, can be configured to simulate possible operational conditions, and is a cost-effective way to assess the accuracy of vendor claims and the applicability of the products to satisfy particular Naval needs. The results of the evaluations will then be posted on the INFOSEC web page to communicate the findings to appropriate communities of interest.

***How is it innovative and creative?***

It is a low-cost way to satisfy the Navy's requirement for reliable and objective information on COTS security products. There is generally no cost to the Navy for laboratory or network set-up, only in the actual effort to evaluate a particular product. It involves industry in the evaluation and, thus, can help industry develop a better understanding of the Naval and DoD market for these products. Teaming with industry for these functions can minimize the larger investment in establishing this capability in house.

***How has this new improvement been applied?***

This improvement has been applied on a trial basis in FY 98. The intent is to use IREN and other sources of information on these products to create a clearinghouse for this data for use by the Naval communities of interest that require it.

***What were the results and lessons learned in developing this improvement?***

The results of this process have been positive thus far. Results will be evaluated to determine whether the effort should be continued and expanded in FY 99.

***What other information would help another program evaluate its applicability towards their program?***

This process will result in a pipeline of reliable data on commercial products with security features. These products are widely applicable to Naval programs. Program Managers are urged to consult PMW 161 for possible information on products that are being considered for use.

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⇒ **(COTS – Teaming) -- Inclusion of a commercial hardware vendor and systems solution's provider as part of the hardware IPT**

NAVAIR

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***What is the name of your program?***

Tactical Automated Mission Planning System (TAMPS)

***Give a description of this idea and how it fits in the program:***

This initiative provides an up-to-date view of the commercial world. Additionally, we get systems engineering knowledge and avoid hardware obsolete planning upgrade at least three years in advance.

***How is it innovative and creative?***

This combines the knowledge of a commercial vendor with the system engineering team. These services are provided at no additional cost to the government because the vendor provides the hardware at GSA or better prices.

***How has this new improvement been applied?***

We are now able to minimize configuration changes in our hardware buys. Furthermore, we are investigating having the vendor load our software and ship it directly to the end user (fleet squadrons).

***What were the results and lessons learned in developing this improvement?***

Having active commercial involvement has greatly increased our visibility to market directions and allows us to procure current technology on an on-going basis.

***What other information would help another program evaluate its applicability towards their program?***

Level of COTS hardware usage.

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## DELEGATION OF AUTHORITY

- ◆ Decentralization of grants' authority from the Office of naval Research (ONR) to the Naval Air Warfare Center, Training Systems Division
- ◆ Delegation of authority to contractor to perform certification of operational test readiness report
- ◆ Lower approval authority for use of rent-free GFE

⇒ **(Delegation of Authority) -- Decentralization of grants' authority from the Office of Naval Research (ONR) to the Naval Air Warfare Center, Training Systems Division**

NAVAIR

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***What is the name of your program?***

This was a Contracts Competency Initiative.

***Give a description of this idea and how it fits in the program:***

It was previously Navy policy that only ONR could award grants, cooperative agreements and other transactions within the Navy. NAWCTSD had been contacted by several of our customers who were interested in us placing and administering their grants programs. The addition of the Grants Management Course to the Defense Acquisition University curriculum ensured that grants could be issued and administered at a high level of quality outside of the ONR organization and has enabled NAWCTSD to utilize its specific technical expertise in support of our customers.

***How is it innovative and creative?***

Use of Cooperative Agreements and Other Transactions have given the Government the ability to contract with commercial firms who normally don't do business with the Government. Since the FAR does not apply, commercial firms are willing to participate since the reporting, accounting, and record keeping systems are not as cumbersome.

***How has this new improvement been applied?***

The Cooperative Agreement and Other Transactions "contract type" have been promulgated in a Broad Agency Announcement (BAA) to fulfill Army requirements. Thus, commercial firms on their own volition can submit an innovative ideas via the BAA solicitation and propose a particular agreement. Thus far, the Army has applied these Agreements to obtain research for additional abilities with software within the computer simulation environment.

***What were the results and lessons learned in developing this improvement?***

- Each Agreement is unique;
- A significant amount of time is required for negotiations;
- All terms are negotiable; and
- Coordination/Involvement with legal and patent counsel is increased.

***What other information would help another program evaluate its applicability towards their program?***

Review of the CFDA (Catalogue of Federal Domestic Assistance)

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⇒ **(Delegation of Authority) -- Delegation of authority to contractor to perform certification of operational test readiness report**

NAVAIR

**Steve Facini**

Harpoon SLAM, AIR-2.4.1.3

Commander

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***What is the name of your program?:***

Harpoon/SLAM/SLAM/ER Cruise Missile Program

***Give a description of this idea and how it fits in the program:***

Allow contractor to certify Operational Test Readiness Report instead of the PEO if the contractor developed the system with little or no government involvement because the contractor funded the development effort.

***How is it innovative and creative?***

Streamlines acquisition process

***How has this new improvement been applied?***

Process has not been applied-seeking authority to do.

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⇒ **(Delegation of Authority) -- Lower approval authority for use of rent-free GFE**

NAVAIR

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***What is the name of your program?:***

Harpoon/SLAM/SLAM/ER Cruise Missile Program

***Give a description of this idea and how it fits in the program:***

Allow one level above the PCO to approve rent-free use of GFE to support Direct Commercial Sales (Currently Approval resides at DSAA (Defense Security Assistance Agency)).

***How is it innovative and creative?***

Streamlines acquisition process

***How has this new improvement been applied?***

Process has not been applied-seeking authority to do.

▼ ▼  
**DEPOT MAINTENANCE**

◆ T-45TS Integrated Maintenance Program (IMP)

⇒ **(Depot Maintenance) -- T-45TS Integrated Maintenance Program (IMP)**

NAVAIR

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***What is the name of your program?***

T-45 Training System Contractor Logistics Support

***Give a description of this idea and how it fits in the program:***

The T-45 IMP embodies a radically different approach to required depot level maintenance on the T-45 aircraft. Maintenance tasks requiring depot level skills have been dramatically reduced, with an attendant decrease in the need for depot level artisans. All maintenance requirements of the T-45 IMP are based on the principles of Reliability Centered Maintenance and rely on the inherent reliability of system components. Additionally, all maintenance tasks of the T-45 IMP are performed on-site at the operating base, eliminating the need for ferry of aircraft to a designated depot site.

***How is it innovative and creative?***

The T-45 IMP eliminates the requirement to move aircraft from the operating base to a designated depot maintenance facility, with attendant savings in aircraft out of service time and the need for pipeline aircraft to maintain inventory stability. In addition, performing the work on-site enables consolidation of other maintenance requirements, including modification installations and standard phase maintenance, during a single aircraft out of service period. Also, the Reliability Centered Maintenance basis for the T-45 IMP ensures maintenance tasks are grouped into the most efficient packages and that maintenance requirements are based on the inherent reliability of system components, not arbitrary intervals.

The T-45 IMP uses the right people, performing the right maintenance, at the right location for the most cost effective solution. Initial actual results indicate an IMP cost of \$65,000 per aircraft as compared to an estimated Standard Depot Level Maintenance cost of \$325,000 per aircraft.

***How has this new improvement been applied?***

The T-45 IMP has been applied to the entire T-45 aircraft fleet. It is a fundamental concept in all T-45 maintenance planning and execution.

***What were the results and lessons learned in developing this improvement?***

Initial results have been extremely successful. To date, five aircraft have been completed on-cost and on-schedule.

***What other information would help another program evaluate its applicability towards their program?***

The T-45 IMP concepts and analysis are contained in the T-45 Integrated Maintenance Program Plan. Point of contact: Mr. J. C. Leverette, NADEP Jacksonville, (904) 633-4091.

▼ ▼

## EARNED VALUE MANAGEMENT

- ◆ Earned Value Management application on Naval Air Warfare Center Weapons Division Pt. Mugu - F-14 Program Software Support Activity

⇒ **(Earned Value Management) -- Earned Value Management application on Naval Air Warfare Center Weapons Division Pt. Mugu - F-14 Program Software Support Activity**

NAVAIR

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F-14 Precision Strike Fighter Program

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***What is the name of your program?***

F-14 Precision Strike Fighter Program

***Give a description of this idea and how it fits in the program:***

This activity will receive a full validation on their Earned Value Management Control System. The validation team consists of representatives from Under Secretary of Defense (Acquisition & Technology), Defense Contract Management Command, United States Air Force and United States Navy.

Earned Value implementation on an in house Navy Software Support Activity will provide a disciplined approach to organic field sites where it did not exist before. It will also be the first organic in house software support activity to receive a JOINT SERVICE VALIDATION of their management control system. These world class business practices are currently used by DoD and private industry to manage their programs.

***How is it innovative and creative?***

Earned Value has never been validated as compliant with the 32 earned value criteria on an in house software support activity

***How has this new improvement been applied?***

Earned Value is being applied to all F-14 programs at NAWC-WD Pt. Mugu.

***What were the results and lessons learned in developing this improvement?***

A number of lessons have been learned during the EVM implementation that can be associated with the implementation of any new system. Upper management must be in full support of this undertaking and must communicate its importance to the troops. Teaming with experts both internal and external to your community is crucial to finding shortcuts and to keep from wasting time re-developing existing solutions. Develop a core team of experts within your command and give them a reasonable level of responsibility and autonomy to make changes happen.

▼ ▼

## ELECTRONIC ORDER MANAGEMENT SYSTEM

◆ Expansion of SPEDI to multiple sites from a single hub

⇒ **(Electronic Order Management System) -- Expansion of SPEDI to multiple sites from a single hub**

NAWC

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***What is the name of your program?***

Small Procurement Electronic Data Interchange (SPEDI)

***Give a description of this idea and how it fits in the program:***

SPEDI is a fully operational order management system featuring Internet based on-line catalogs. Orders are placed and confirmed via American National Standards Institute's (ANSI) X12 Electronic Data Interchange (EDI) data exchanges. Material is delivered with bar coded labels and tracked through final receipt. It is an Evaluated Receipt System (ERS) activating vendor payment via Electronic Funds Transfer (EFT). Under the sponsorship of Smart Base, the SPEDI system has been enhanced to support multiple sites from a single hub.

***How is it innovative and creative?***

Fully Operational Electronic Order Management System Internet Based On-line Catalogs provided via EC/EDI w/back-end Data Checks/Edits Internet Based On-line Search, Order, and Query Functions Automated Procurement Authority and Verification Funds Availability and Validation Checks Bar Code Tracking Paperless Proof of Delivery w/automated Payment Process Initiation DFAS Electronic Funds Transfer (EFT) Payment Status, Delivery, Receipt, Acceptance, Demand and Performance Reporting Automated Interfaces to Accounting, Finance, and Inventory Systems

***How has this new improvement been applied?***

SPEDI is scheduled for implementation at NAS Lemoore in the Spring of 1998. NAS Brunswick and NSY Portsmouth implementations are planned for the Summer of 1998.

***What were the results and lessons learned in developing this improvement?***

Improved Search Engine Multi-line Order Capability Multiple Databases on Sun 3000 Server Integration of EDI 856 Transaction Set E-mail Order Status to SPEDI Users Secure WEB Server State-of-the-Art Bar Code Scanning Equipment Migration to WEB-based On-line Documentation Centralized Help Desk New EDI Transaction Sets Planned: 810, 832, 861.

***What other information would help another program evaluate its applicability towards their program?***

The SPEDI system is built around a central relational database management system (Ingres) and applications that function as an information hub, exchanging and combining data with a variety of systems using application-specific electronic data feeds, ANSI X12 data feeds, and direct connections. The system includes a number of checks, validations, and automated functions that eliminate data entry and paper processes while providing control and accountability. The system generates a wide variety of receiving, delivery, invoice, audit, tracking, history, performance, costing and management data and reports.



The catalog data stored in the SPEDI database include data and pictures. The SPEDI database can support hundreds of thousands of line items reflecting many different commodity types. SPEDI is also capable of using third party catalogs as specified in site-specific contracts for catalog data feeds, along with CD-ROMs which store pictures of each commodity class. Catalog data is typically electronically fed via E-mail or FTP exchange with pictures provided via CD-ROM. Future integration of the EDI 832 Price/Sale Catalog transaction set will provide an additional data feed solution. SPEDI performs a number of data checks and edits to ensure the data is correct before the database is updated.

The SPEDI vendors must be capable of receiving an EDI 850 Purchase Order transaction set, generating an acceptable 3 of 9 bar code label, and sending an EDI 856 Ship Notice/Manifest. The host site (NAWCWPNS China Lake) provides an EDI and bar code inform action package for the vendors to follow to ensure consistency. SPEDI uses established, long-term systems contracts which are generally awarded competitively to vendors by the local site (implementing site). The vendors are allowed query-only access to the SPEDI on-line catalog via the Internet for their specific catalog items. This is controlled via the specific IP address authorization built into SPEDI, as well as the host site's firewall and Secure Socket Layer (SSL) encryption.

Electronic exchanges between SPEDI and local financial and accounting systems are site-specific, and may be either flat file data or EDI transaction sets.

The tracking data collected and stored in the SPEDI system provides for the paperless proof of delivery feature in the system. The tracking system includes: order placement, order transmission to the vendor, order shipment from the vendor, order receipt, order loading, and order delivery. These steps are traced from the point of receipt through delivery via bar code scanning. From this data, the system generates receipt and invoice data that accounting and finance use to authorize payment to the vendor. The data collected provides the tracking, audit, and vendor performance information needed for management control and reporting.

The system employs industry standard Internet browser software, with encryption, as the Graphical User Interface (GUI). As part of the user exchange with the system, SPEDI performs a number of checks and validations before an order is placed. Among the validations performed are Job Order Numbers (JONs), end-user authorization level, and buildings. Buying authorizations can be tailored to the end-user or to control the purchase of specific items, such as hazardous materials.

SPEDI ordering officers also have the option of accessing the system via Telnet. The Telnet interface has all of the aforementioned GUI functionality, as well as system administration functions used by the site monitor.

The various SPEDI system interfaces, checks, and processes were developed as functional modules using an Ingres relational database management system. This allows the system to easily adapt to changes, additions, new data feeds, or new requirements.

▼ ▼  
**ENVIRONMENTAL**

◆ Simplified Environment, Safety and Health (ESH)

⇒ **(Environmental) -- Simplified Environment, Safety and Health (ESH)**

MARCOR

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*What is the name of your program?*

Environment, Safety and Health (ESH)

*Give a description of this idea and how it fits in the program:*

The effort effectively integrated ESH considerations into MARCORSYSCOM acquisition processes. It involved identifying key events within the Requirement Generation and Acquisition processes where ESH considerations could have the greatest impact or where ESH information is needed to support the decision makers.

*How is it innovate and creative?*

Procedures and guidance involving Environmental Pollution Prevention, Hazardous Material Management, safety requirements and the safety release process are simple and easily understood. Procedures are more streamlined yet still effective and ESH elements are better understood by Command personnel. Developed new strategies for documenting the “thinking” process within the Command concerning Environment, Safety and Health requirements and issues. The results have eliminated confusion and simplified our process for Programmatic Environmental, Safety and Health Evaluations within MARCORSYSCOM.

*How has this new improvement been applied?*

- Developed an ESH awareness course targeted toward MARCORSYSCOM specific procurements and procedures. The course is written and taught in plain language to reach the acquisition community that may be confused with ESH terminology.
- Developed separate modules for system safety and acquisition pollution. This offer more in-depth information to the student on the engineering methodology of the disciplines.
- Provide training to any SYSCOM office at their location and their convenience.
- Developed a plain language handbook for system safety.
- Developed simplified informational guide on ESH for Project Officers.

*What were the results and lesson learned in developing this improvement?*

- Clear information provided to decision makers on key issues to help facilitate their decisions.
- Programs have less interruptions form ESH issues because proper documentation is in place.
- Weapon Systems contained less hazardous and costly materials, thereby are able to meet Federal and state compliance regulations.

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## GOVERNMENT PROPERTY – TRADE-IN

◆ Re-utilization of Government owned residual materials

⇒ **(Government Property – Trade-In) -- Re-utilization of Government owned residual materials**

MARCOR

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***What is the name of your program?***

Shoulder launched Multi-purpose Assault Weapon. (SMAW)

***Give a description of this idea and how it fits in the program?***

Utilized residual material's (like items) from a SMAW- High Explosive Anti-Armor rockets closing contract and offered for use to another contractor as part of a new contract for SMAW - Common Practice rockets.

***How is it innovative and creative?***

By retaining control and ownership of residual materials from a previous contract and effectively negotiated a stepladder set of prices to be used by a different contractor and contract. This allowed for an accelerated production and delivery schedule for both the contractor and Government.

***How has this new improvement been applied?***

The Marine Corps has accepted delivery of approximately 419 Encased, SMAW-Common Practice rockets as payment for the residual materials transferred to the contractor.

***What were the results and lessons learned in developing this improvement?***

The Government received \$463,851 worth of complete rounds for use in training, with another \$282,194 worth due from the second option of the contract. The lesson learned, was that, instead of paying a contractor to dispose of residual government materials, seeking application towards another contract has saved the Government over \$746,000 of procurement funds and reduces both production and delivery schedules for the contractor and Government.

***What other information would help another program evaluate its applicability towards their program?***

Complete review of residual materials upon closure of a contract and either retain as spare and repair stocks or provide listing to their Service procurement activity for application towards another program or contract.

▼ ▼  
**IDIQ CONTRACTS**

- ◆ Development of a performance specification for a plug in H-46 AHRS replacement that resulted in a best value, direct vendor delivery contract
- ◆ Flexible contract vehicle for modifications and installations

⇒ **(IDIQ Contracts) -- Development of a performance specification for a plug in H-46 AHRS replacement that resulted in a best value , direct vendor delivery contract**

NAVAIR

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***What is the name of your program?***

H-46

***Give a description of this idea and how it fits in the program:***

Replaces a poor performing, sole source, unreliable navigation system with a state of the art form fit function replacement.

***How is it innovative and creative?***

Incorporates a host of acquisition reform initiatives into a single contract. The features include; a 15 year life cycle warranty requiring the contractor to repair or replace all failures during this period at no additional cost. This also provides a built-in incentive for technology insertion, reliability improvement guarantee of 7,500 hrs, reimbursable spares clause that requires the contractor to provide additional spares if reliability thresholds are not met, complete commercial responsibility for wholesale inventory. The contractor has complete responsibility to decide what levels of wholesale inventory it needs to hold in order to meet DVD shipment requirements eliminating the possibility of excess costs associated with “over-sparing” and reduces navy inventory levels, thereby reducing infrastructure costs.

The program was funded as an LECP and is projected to save \$48M over 15 years.

***How has this new improvement been applied?***

Applied via teamwork to build the procurement package, and will be implemented at the fleet level via attritional retrofit.

***What were the results and lessons learned in developing this improvement?***

The cost of integrating new technology can be offset with life cycle savings.

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⇒ **(IDIQ Contracts) -- Flexible contract vehicle for modifications and installations**

NAVAIR

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***What is the name of your program?***

Modification/Installation Program (MIP)

***Give a description of this idea and how it fits in the program:***

MIP is a contract to consolidate all the modification and installation work on one (or two) vehicle(s) with competitively awarded rates. MIP was designed to offer the most flexibility to the Program Manager. With both firm fixed price and cost plus type contract line items, the Program Manager can apply the proper risk sharing strategy as each specific modification dictates. To offer additional flexibility, the MIP competition is being orchestrated to allow for a multiple award. A multiple award would permit follow-on limited competitions for the subsequent delivery orders as appropriate. Additionally, with the MIP contract in place, the program manager is no longer locked into a dependency on the OEMs or NADEPs for his installations.

***How is it innovative and creative?***

The MIP vehicle will allow for the concurrent installations of multiple modifications to reduce aircraft downtime. MIP provides competitive rates for future installations and eliminates the multiple competitions/awards required for various future modifications.

As part of the development of the contract, we created an innovative contract type. The cost type portion of the contract is a fixed rate, variable hours, incentive fee type contract. It is a hybrid of cost plus incentive fee and time and materials (T&M) type contracts. This method allows for the expediency of a T&M, negotiating only hours for each delivery order, while maintaining control of the contractor's price with an incentive fee, common to CPIF. Additionally, a minimum fee of 0% has been dictated by the RFP.

***How has this new improvement been applied?***

MIP is a competitive RFP. Contract award is expected in September 1998.

***What were the results and lessons learned in developing this improvement?***

Naval Aviation has been forced to downsize their personnel drastically. To cope with this reduction in personnel, we needed a contract vehicle that would eliminate the need for multiple future competitive contract actions that are labor intensive. After contract award, it is also expected that the modification/installation costs should decrease from their current sole source values as a product of competitive rates.

Innovation takes time and lots of effort. We tried to create an extremely flexible vehicle for the program manager with mods to install. Numerous acquisition approaches were left on the drawing board.

When dealing with a vehicle that will give the IPTs an alternative to their existing teams, it is imperative to get buy-in from the users. There was a tremendous resistance from the office towards doing something different. Until that buy-in was in place, it was extremely difficult to get cooperation.

***What other information would help another program evaluate its applicability towards their program?***

The primary driver that led our office to pursue this type of contract was the difficulties of using the same contract vehicles, primarily the NADEPs and OEMs, exclusively. With the extensive number of modifications in our office, we needed the flexibility of other sources to address our installation issues.

▼ ▼  
**INNOVATIVE FUNDING**

◆ Other People's Money (OPM)

⇒ **(Innovative Funding) -- Other People's Money (OPM)**

NAVSEA

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***What is the name of your program?***

Acoustic Rapid COTS Insertion (A-RCI)

***Give a description of this idea and how it fits in the program:***

Leveraging Navy investments in the SBIR Program, COSSI Program and Congressional Plus Ups

***How is it innovative and creative?***

Budget instability is the greatest program problem. Being able to harvest innovations brought in by the SBIR Program, cost savings expected from the COSSI Program and use Congressional Plus Ups allowed the A-RCI Program flexibility in where to fund.

***How has this new improvement been applied?***

The hardware cornerstone of the A-RCI Program is the Multi-Purpose Processor, an SBIR developed unit. Congressional Plus Ups allowed expanded Navy involvement, additional issue resolution and development of improvements that would have otherwise competed with the A-RCI Program for funding.

***What were the results and lessons learned in developing this improvement?***

Results are excellent. Lesson learned is a program should not be managed as a stand-alone effort, but managed as part of the Navy's goals.

***What other information would help another program evaluate its applicability towards their program?***

Insight into all Navy efforts that could be leveraged.

## INVENTORY MANAGEMENT

### ◆ Resource Allocation Management Plan

⇒ **(Inventory Management) -- Resource Allocation Management Plan**

NAVAIR

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***What is the name of your program?***

F-14 Precision Strike Fighter Program

***Give a description of this idea and how it fits in the program:***

Resource Allocation Master Plan (RAMP) is a model used to provide a cost effective and efficient plan for the management and execution of current and future F-14 programs. It contains an accurate and detailed definition of the operational requirement in terms of squadron deployment schedules and numbers of aircraft to meet them; a downsizing of inventory to cover only those essential requirements; and a detailed plan to maintain and upgrade each aircraft in this new right-sized inventory until the aircraft is retired from the fleet.

***How is it innovative and creative?***

The inventory management program combines installation and modification requirements to match scheduled SDLMs and would allow the Navy to concurrently upgrade F-14 aircraft the Navy budgeted for separately. The concurrent upgrades would allow the Navy to avoid spending \$92.5M in APN funds for FY 97 through FY 04. Cost avoidance in the O&MN appropriation would be \$165M. This has been validated by the Navy Audit Service.

***How has this new improvement been applied?***

Inventory Management is being applied to every F-14 program and aircraft.

***What were the results and lessons learned in developing this improvement?***

Innovation and out of the box thinking provided an understanding of the need to tailor the thinking and planning process to satisfy a specific objective which is to avoid unnecessary costs while providing the fleet with their requirements on time and on budget.



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## INTEGRATED PRODUCT TEAM (IPT)

- ◆ Aerostructures Flight Regime Resubstantiation
- ◆ Integrated Process Team Approach to System Design
- ◆ IPTs and Peer Review Groups create unstoppable synergy
- ◆ Use of Acquisition Reform to accelerate and improve contract award
- ◆ Use Reserve Detachments as a direct line to the technology front line

⇒ **(INTEGRATED PRODUCT TEAM (IPT)) -- Aerostructures Flight Regime Resubstantiation**

NAVAIR

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***What is the name of your program?***

PMA-299 Fleet Support team.

***Give a description of this idea and how it fits in the program:***

The FST approach was to gather ACTUAL, vice predicted aircraft flight regime data by instrumenting fleet aircraft. The flight regime data will be used to better predict dynamic component lives for the H-60 series helicopter. Based on a similar AW-1W program, the H-60 FST expects to see an overall increase in dynamic component lives, which will in turn decrease H-60 flight hour costs.

Aerostructures is parts of the FSTs overall Affordable Readiness Initiatives that seek to increase aircraft availability and decrease costs. This initiative will also provide valuable usage spectrum data to better specify Health Usage Monitoring System (HUMS) for both legacy and production H-60s.

***How is it innovative and creative?***

This initiative challenges the traditional methodology of predicting dynamic component life. NAVICP has agreed to help fund part of this initiative due to the potential for increases in dynamic component life and the fact that there are no other programs of this sort active for navy helicopters.

The initiative is also creative and innovative because PMA-299 is leasing all the equipment necessary to instrument aircraft, gather data, and reduce the data. Leasing saved the program office a significant amount of program funds that were applied to other initiatives.

***How has this new improvement been applied?***

The Aerostructures initiative is not complete at this time. However, PMA-299 FST has coordinated with NAVAIR structural engineering to ensure smooth transition of the data into actual increases in component life should the data warrant such a decision.

***What were the results and lessons learned in developing this improvement?***

Lessons learned:

- 1) Lease equipment when practical.
- 2) Involve all relevant NAVAIR engineering competencies early in the process to ensure their buy-in.
- 3) The employment of our affordable readiness plan enabled us to target dynamic component life as a major cost driver in H-60 flight costs and availability.

***What other information would help another program evaluate its applicability towards their program?***

When the Aerostructures initiative is complete, data will be made available to other helicopter programs.

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⇒ **(INTEGRATED PRODUCT TEAM (IPT)) -- Integrated Process Team Approach to System Design**

NAVSEA

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***What is the name of your program?***

Ship Self Defense System (SSDS)

***Give a description of this idea and how it fits in the program:***

The SSDS program introduced a significant new self defense capability to the ships of the United States Navy through the use of innovative methods and creative management techniques. The SSDS program used the highly successful IPT approach to system design and development. The empowerment of government, laboratory and contractor personnel enabled the design process to move rapidly with decisions being made at the lowest possible level while all aspects of cost, performance and supportability were considered with the end goal of reducing system life cycle costs. The team's focus on acquisition streamlining through the use of performance based specifications and requirements and off the shelf hardware and software substantially reduced both development time and cost, yet delivered a significant capability to meet fleet requirements. This approach transitioned ship self defense from a high cost hardware based solution to a software based solution. This increase in capability was completed in just over half the time originally proposed, at a savings of \$80M and was achieved with no increase in shipboard manning, an important factor in new systems being designed for backfit into U. S. Navy ships.

***How is it innovative and creative?***

The IPT demonstrated innovation and creativity by setting performance standards for the SSDS system rather than the standard process of government dictating design via MIL-SPEC and contracting for a system built to that design. The IPT was continually searching for new ideas and new ways to accomplish each task they faced and to meet the performance requirements in the easiest and most cost effective way possible while designing a system that would be adaptable and extensible for the future.

***How has this new improvement been applied?***

The IPT approach was applied in the design of the SSDS. The SSDS recently achieved Milestone III where ASN(RDA) approved SSDS for integration with ACDS and CEC. The IPT approach will be used in that integration effort.

***What were the results and lessons learned in developing this improvement?***

The approach was applied in the design of the SSDS which went from program initiation at Milestone II to IOC in twenty five months and saved over \$80M from initial contractor estimates. The results proved the value of the IPT approach to system design and development.

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⇒ **(INTEGRATED PRODUCT TEAM (IPT)) -- Integrated Product Teams and Peer Review Groups create unstoppable synergy**

NAVSEA

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***What is the name of your program?***

Acoustic Rapid COTS Insertion (A-RCI)

***Give a description of this idea and how it fits in the program:***

IPTs allow individuals and organizations to “buy in”. Once ownership is established, groups resolve issues and make progress at a greater rate than experienced in the past. Peer Review Groups bring in Navy and industry experts to provide non-partisan recommendations.

***How is it innovative and creative?***

Individuals and organizations take pride in work they personally are responsible for. The “Not Invented Here” syndrome has shelved good ideas because of political issues rather than technical issues. Strong teams, with buy in, and independent Peer groups can overcome political issues and make the best technical recommendation.

***How has this new improvement been applied?***

A-RCI Program applied this approach through out. Fleet representation, OPTEVFOR participation and active industry involvement have been used to resolve issues.

***What were the results and lessons learned in developing this improvement?***

Results are excellent. Feedback from the initial installation, from testing events and from formal “Red Team Reviews” has been used to redirect development efforts.

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⇒ **(INTEGRATED PRODUCT TEAM (IPT)) -- Use of Acquisition Reform to accelerate and improve contract award**

MARCOR

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***What is the name of your program?***

Shoulder launched Multi-purpose Assault Weapon. (SMAW)

***Give a description of this idea and how it fits in the program?***

Made maximum use of the freedom allowed by acquisition reform to streamline the awarding of contract that served the best interested of the Government and the contractors in a minimum amount of time.

***How is it innovative and creative?***

Used a Best Value approach to award a basic contract and four options (\$78M total contract value) in only four months. The approach used an IPT to develop the requirements. This approach placed heavy emphasis on Past Performance/Experience and the score cost was secondary. Additionally, the data requirements were carefully reviewed to ensure that the absolute minimum needed were requested.

***How has this new improvement been applied?***

A contract was awarded in 4 months and the selected contractor successfully began delivering rockets ahead of contract schedule.

***What were the results and lessons learned in developing this improvement?***

It is possible to greatly streamline the contracting process within the bounds of current regulations. The evaluation of Past Performance/Experience is a valuable tool in ensuring the selection of a contractor capable of performing as required.

***What other information would help another program evaluate its applicability towards their program?***

Have IPT members identified early on and allow all to review the Technical Data Package(s) and RFP prior to release.

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⇒ **(INTEGRATED PRODUCT TEAM (IPT)) -- Use Reserve Detachments as a direct line to the technology front line.**

NAVSEA

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***What is the name of your program?***

NAVSEA Technical Liaison Program (NTLP)

***Give a description of this idea and how it fits in the program:***

The NTLP is NAVSEA's direct line to the technology front line. The program brings the Navy's quality and reliability message to Navy vendors throughout the country. It also provides awareness to industry on mission readiness and operational reliability and emphasizes the "Navy team" all the way down to the vendor's shop floor. The NTLP was established in 1981 and includes 8 Navy Reserve Detachments and 50 senior ED Billets. The NTLP also accomplishes much of NAVSEA's vendor base market research data gathering, including feedback and industrial base information.

***How is it innovative and creative?***

First, traditional method of obtaining quality is through end item inspection. This program is built around quality prevention. Going out to vendor plants, discussing the importance of quality, and showing the vendors how their products fits into the weapon system has been extremely effective. Secondly, most reserve units have a wartime requirement, this program can be used as a model for existing reserve units in a secondary role to assist their supporting command by obtaining valuable market research information and promoting the importance of quality.

***How has this new improvement been applied?***

Each year these reservists account for 16,200 labor hours of direct support with average 125 vendor's visits per year. Since 1981, they have had face-to-face contact with over 1,580 vendor.

***What were the results and lessons learned in developing this improvement?***

We estimate nearly \$1M has been saved from this organization working with vendors on quality and how their products fits into the major system(s) or sub-system(s) in the fleet. Since the reserve detachments have no real wartime role, reduced budgets have necessitated the need to end the program in October 1999.

***What other information would help another program evaluate its applicability towards their program?***

In establishing a similar program, one should balance the wartime responsibility of the reserve unit with the needs of its supporting command. Our Headquarter reserve units, many of which come from industry, can be a valuable asset to the Program Manager and their staff. This program allowed for Reservist to go out and visit industry during their reserve weekends to gain insight into share the importance of quality in our weapon systems. Many of our industry subcontractors and vendors do not comprehend or understand how shabby work can effect the overall readiness of the fleet. The NTLP allowed for face-to face communication with industry, showing them how their products play a critical role in the operational effectiveness of the weapon system.

▼ ▼

## IPT – COMMUNICATIONS WITH INDUSTRY

- ◆ Interaction with industry during the system specification preparation phase of the program
- ◆ IPT – Communications with Industry
- ◆ Lessons learned from preparing for and executing a fixed-price, sole-source acquisition contract of PC-14
- ◆ Whole-hog adoption of the IPPD philosophy

⇒ **(IPT – Communications with Industry) -- Interaction with Industry during the System Specification Preparation phase of the program**

NAVAIR

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***What is the name of your program?***

VISUAL - Virtual Imaging Systems for Approach and Landing

***Give a description of this idea and how it fits in the program:***

VISUAL is the integration of several technologies which already exist in the marketplace. Through the VISUAL Industry/Navy IPT, we are bringing industry into the discussion phase of how these systems can be integrated so that the Navy does not over specify the requirements and industry will understand the requirements when the RFP is released. This is a win-win situation for the Navy and industry.

***How is it innovative and creative?***

It is innovative and creative in that we welcome and encourage industry to participate and have already taken some members of the IPT on board an aircraft carrier so that they have a better understanding of the environment in which the system must operate.

***How has this new improvement been applied?***

We are continuing to hold IPT meetings and plan to take a group on board an amphibious assault ship in order to gain insight into the differences between carriers and amphibians.

***What were the results and lessons learned in developing this improvement?***

Industry has been very responsive and we have good attendance at the 5 meetings conducted over the past year and a half.

***What other information would help another program evaluate its applicability towards their program?***

We were skeptical as to how industry would respond and whether attendance would fall off after the first couple of meetings. We were pleasantly surprised that, if anything, we have better attendance as the program progresses. My advice: Try it - It may work!

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⇒ (IPT – Communications with Industry) -- IPT - Communications with Industry

NAVAIR

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***What is the name of your program?***

Sparrow Missile

***Give a description of this idea and how it fits in the program:***

The idea of the IPT as a communication tool with industry revolves around the issue of ownership of a system. By making the contractor a product team member, he now becomes tied into the success of the program. He has more input into planning and therefore more ownership into program direction. He is not just sitting by waiting for direction from the government as to what is the best way to proceed. He has great experience and expertise of the system, and this should be taken advantage of when making plans.

***How is it innovative and creative?***

This idea is innovative because it's a change from the way business has always been done. In the past, we have effectively said "this is our program, and if you are the winning bidder you will perform as we have requested". Now we are asking for their input as to how the program should develop and proceed early in the planning stages.

***How has this new improvement been applied?***

This new improvement has been applied by just making a change in attitude and approach to conducting business with the contractor. Instead of telling him later what we want, we are now asking him to be involved earlier in the process. One example of this is our contract with the Sparrow rocket motor manufacturer, Alliant Tech systems. As part of their contract, they are to develop and qualify a new binder material for the propellant. Immediately upon their signing the contract, we had face-to-face meetings with them to work out the details of how they were going to go about this process. We listened to their input, took in their recommendations, and together developed a plan that all could agree had the best chance for success within the cost and schedule constraints of the program.

***What were the results and lessons learned in developing this improvement?***

I think it has shown good results. Again, it brings up the issue of ownership into program success. If the contractor is involved earlier in the process, he is more inclined to ensure that we all work together toward the ultimate goal, a successful program.

***What other information would help another program evaluate its applicability towards their program?***

I think the first thing to consider is the contractor's experience. Many times they have the extensive specific experience related to the program that is vital to program success. If bringing on a new contractor, you would need to determine what level of expertise he has to offer at each point in the program. The most benefit will be achieved by bringing the contractor on board as early as possible.

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⇒ **(IPT – Communications with Industry) -- Lessons learned from preparing for and executing a fixed-price, sole-source acquisition contract of PC-14.**

NAVSEA

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***What is the name of your program?***

Patrol Coastal (PC-14) Acquisition

***Give a description of this idea and how it fits in the program:***

IPT lessons were learned in the areas of cost estimating, spec writing, and design/integration (i.e., how does the Contractor distinguish between Government “insight” and “direction” on an IPT).

***How is it innovative and creative?***

We saved time and money up-front by bringing the Contractor onboard in an IPT environment prior to Contract award.

***How has this new improvement been applied?***

IPPD was part of the Acquisition Strategy.

***What were the results and lessons learned in developing this improvement?***

The spirit of an IPT is tested when profit margins are breached.

***What other information would help another program evaluate its applicability towards their program?***

PC-14 is a sole-source, fixed-price, NDI, shipbuilding program required to execute under strict funding obligation deadlines. This 14<sup>th</sup> ship integrated 90+ SHIPALTs into the Contractor’s proprietary design while jointly incorporating several new design requirements during a 6-month Design & Integration IPT period prior to construction. Maintained with the Contractor that all designs must be “backfittable” to the 13 in-service ships of the Class. Contractor has full design responsibility for the ship.

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⇒ **(IPT – Communications With Industry) -- Whole-hog adoption of the IPPD philosophy**

SPAWAR

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***What is the name of your program?***

Advanced Deployable System

***Give a description of this idea and how it fits in the program:***



We have whole-heartedly adopted the Integrated Product/Process Development philosophy in all areas of our program.

***How is it innovative and creative?***

The standard philosophy has been for the government to hold contractors responsible for contract performance instead of helping them succeed.

***How has this new improvement been applied?***

We've implemented this improvement by allowing contractor and laboratory staffers to chair IPTs, reporting all cost, schedule and budget information by IPT (and not by parent organization), and allocating all budget authority to the IPT level.

***What were the results and lessons learned in developing this improvement?***

We've seen amazing cooperation among all organizations, to the point where outsiders say they can't tell what company/laboratory/agency our people work for—everyone identifies by IPT. And when the going got tough, the government team resisted the old way of standing back and blaming the contractor. Instead, our experts pitched in and helped fix the problem.

***What other information would help another program evaluate its applicability towards their program?***

The stage of program development; this improvement is best applied early in the program. Type of contract; extensive government interaction would not be appropriate in a fixed-price contract.

▼ ▼  
**JOINT PROGRAMS**

- ◆ Combined Operational Testing (COT) in a Joint FAA / Tri-Service procurement
- ◆ Streamlined acquisition documentation for a cooperative Department of Defense program

⇒ **(Joint Programs) -- Combined Operational Testing (COT) in a Joint FAA / Tri-Service procurement**

NAVAIR

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***What is the name of your program?***

National Air Space Modernization Program.

***Give a description of this idea and how it fits in the program:***

Reduces cost and schedule to perform single OT&E with FAA & DoD participation, or to accept OT&E Certification by the partner agency.

***How is it innovative and creative?***

Accepts FAA testing of system, in place of DoD testing.

***How has this new improvement been applied?***

Is presently under consideration for the Navy buy of the enhanced terminal voice switch (ETVS) system. May later be applied to STARS and DASR.

***What were the results and lessons learned in developing this improvement?***

TBD. (awaiting testing and will review Navy acceptance of final product.)

***What other information would help another program evaluate its applicability towards their program?***

Perspective users should read the DoD Policy Board on Federal Aviation (PBFA) MOA with FAA, and should replicate it for whatever joint equipment is being produced.

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⇒ **(Joint Programs) -- Streamlined acquisition documentation for a cooperative Department of Defense program**

NAVAIR

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***What is the name of your program?***

Joint Mission Planning Segment (JMPS)

***Give a description of this idea and how it fits in the program:***

JMPS is a Navy and Air Force joint development program. Together, the two services outlined acceptable documents and then strategize on ways to decrease redundant acquisition documentation. As a result, the services agreed to combine several documents in a Single Acquisition Management Plan (SAMP).

***How is it innovative and creative?***

The JMPS Team's approach brought two DoD services' ideas into an open forum and a single acquisition management plan.

***How has this new improvement been applied?***

The JMPS Team's approach is on-going as program development continues.

***What were the results and lessons learned in developing this improvement?***

The JMPS Team has moved away from "stove pipe" thinking for acquisition documentation development. Using this process, the Team has realized a time avoidance from its cooperative acquisition documentation process over traditional acquisition documentation processes. Specifically, "stove pipe" routing of separate acquisition documents through two services will not be necessary with the SAMP.

***What other information would help another program evaluate its applicability towards their program?***

The JMPS Team's greatest benefits from its streamlined acquisition documentation initiatives have been: team members have a better understanding of the total JMPS program, the expertise of individual team members is able to be shared collectively by the Team, earlier buy-in by both services, and the SAMP is more reflective of the Navy and Air Force acquisition requirements.

▼ ▼  
**LIFE CYCLE COST**

- ◆ Incorporation of a new chord wise weight package into H-46 rotor blades and analytic vibration software to minimize airframe vibration in all flight regimes as well as on the ground

⇒ **(Life Cycle Cost ) -- Incorporation of a new chord wise weight package into H-46 rotor blades and analytic vibration software to minimize airframe vibration in all flight regimes as well as on the ground**

NAVAIR

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***What is the name of your program?***

H-46 Ground lateral vibration reduction program

***Give a description of this idea and how it fits in the program:***

There is a proportional relationship between aircraft vibration levels and failure rates of the airframe and aircraft subsystems. Measured lateral vibration levels are known to exceed many system design parameters and have resulted in cracks in the airframe and engine front frames. The insertion of state of the art vibration analysis technology into the H-46 has lowered vibration levels to benign levels.

***How is it innovative and creative?***

The program was funded as a return on investment project ( PBD 714).

***How has this new improvement been applied?***

The program was defined, contracts awarded and all hardware and software delivered to the fleet in 12 months. The fleet is now installing the blade change kits and realizing a reduction on maintenance man-hours and reductions in AVDLR expenditures.

***What were the results and lessons learned in developing this improvement?***

Incorporation of technology improvements into older platforms can dramatically lower life cycle costs. Return on investment projects are reviewed very favorably by CNO.

▼ ▼  
**LOGISTICS & ENGINEERING CHANGE PROPOSAL (LECP)**

◆ LECP Lessons Learned

⇒ **(Logistics & Engineering Change Proposal (LECP)) -- LECP Lessons Learned**

NAVAIR

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***What is the name of your program?***

E-2C NP2000 Propeller Program

***Give a description of this idea and how it fits in the program:***

The NP2000 Propeller was introduced as a LECP effort to replace existing E-2/C-2 propellers which are no longer being produced. The new propeller will result in better performance and reliability.

***What were the results and lessons learned in developing this improvement?***

The lesson learned is that significant care needs to be given to ensure that the LECP covers all aspects of the program, including all facets of the test program, as well as the integration test effort for the propeller.

▼ ▼  
**LOGISTICS SUPPORT**

- ◆ CAD/PAD Supply Support Initiative
- ◆ Contractor Logistics Support Awarded to Original Equipment Manufacture OEM as part of the production contract for life cycle support of equipment
- ◆ Direct Vendor Delivery (DVD) with Reliability Incentived Warranty
- ◆ Lessons learned- Program Offices need a notification process or access to a data base that provides information on pending or implemented COTS hardware and software changes

⇒ **(Logistics Support) -- CAD/PAD Supply Support Initiative**

NAVAIR

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***What is the name of your program?***

Cartridge Actuated Devices (CAD) and Propellant Actuated Devices (PAD).

***Give a description of this idea and how it fits in the program:***

CAD/PADs are explosive devices used in all Navy or Marine Corps aircraft. Current regulations require fleet squadrons to requisition replacement CAD/PADs through their supporting station or ship's weapons department 120 days before actual need. The weapons department then consolidates requirements for like items from each of its tenant activities. The current process requires the weapons department to submit (90 days in advance of need) a batch requisition to Naval Ordnance Center Inventory Management Division (NOC-IMSD). This initiative will drastically improve the process for managing, requisitioning, and distributing 50,000 – 65,000 items required for the maintenance of naval aircraft and related equipment each year. The objective is to reduce lead time and cost in delivering assets to the fleet by establishing direct access between squadrons and inventory control points.

***How is it innovative and creative?***

It restructures requisition system by marrying the best of government and commercial support practices. The process capitalizes on state of the art telecommunications technology and automated data systems to validate each order against actual aircraft need. It will also integrate commercial inventory management and order fulfillment practices used successfully by industry to reduce re-supply time. Currently, customers must order months before actual usage. This results in stocking expensive, life-limited assets in an attempt to ensure they will be in the correct location when needed. It is more cost effective to reduce inventory levels to a few days supply. With modern telecommunications and distribution systems to move assets, we can ship assets just in time for usage. This innovation significantly reduces investment in spare parts as well as eliminating current labor intensive shipping processes.

***How has this new improvement been applied?***

This new improvement has been successfully proven by private industry and several DoD programs. While the current system measures delivery time in months, the new improvement guarantees delivery in days.

***What were the results and lessons learned in developing this improvement?***

Analyses of multifaceted processes requires structured thinking and a complete understanding of the existing system. It is important to have buy-in from all members to ensure successful application. Finally, we assumed consolidation of all stock and management at a single site to reduce redundancies, and development of custom management software that allows for maximum application of automated techniques.

***What other information would help another program evaluate its applicability towards their program?***

A major benefit of system's thinking is the ability to provide consistent understanding of the current process. This improved system's understanding leads to a more thorough analysis of support systems, their modeling design and implementation decisions. A structured approach results in improved performance in both near and long term activities.

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⇒ **(Logistics Support) -- Contractor Logistics Support Awarded to Original Equipment Manufacture OEM as part of the production contract for life cycle support of equipment**

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***What is the name of your program?***

Contractor Logistics Support

***Give a description of this idea and how it fits in the program:***

Contractor Logistics Support, as part of the Acquisition Process, i.e., MTRV. Replacement for the 5 Ton (MTRV) will be fielded with a contractor logistics support package competed during the acquisition process. In this relationship, the manufacture of the equipment will have sole responsibility for all spares and overflow maintenance support. The original contract will be for 5 years, but the intent is to have the OEM support the equipment throughout its life cycle.

***How is it innovative and creative?***

To our knowledge, this is the first time that contractor logistics support has been awarded as part of the production contract to the Original Equipment Manufacture.

***How has this new improvement been applied?***

It will be applied when vehicle is fielded FY01 and beyond.

***What were the results and lessons learned in developing this improvement?***

At this point only lessons learned are from the contractual stage of the process. Concerns over awarding CLS as part of the production contract were encountered early on. In this case, TACOM was concerned over awarding a contract that would eventually migrate to DLA for management. How would this impact the process where TACOM awards a contract and then expect DLA to manage it? The answer was to bring DLA and TACOM together at an early stage and agree on how it would be done so that at the transition from production to support all agencies would know what to expect. It has worked well so far. Most questions in this process have come from industry. As this is not a standard practice, they have asked many questions but overall think the idea is great and are ready to support it.

***What other information would help another program evaluate its applicability towards their program?***

Where normally this truck programs is procured through TACOM and support through DLA, the challenge has been to bring both the procurement and supporting establishments together at an early stage to ensure that proper contractual language exists in the procurement document to allow both organizations to achieve their goals with one contract.

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⇒ **(Logistics Support) -- Direct Vendor Delivery (DVD) with Reliability Incentivized Warranty**

NAVAIR

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***What is the name of your program?***

AN/ALR-67(V)3 Countermeasures Receiver Set

***Give a description of this idea and how it fits in the program:***

The AN/ALR-67(V)3 program is pursuing a DVD contract with a reliability incentivized warranty. The prime contractor, Raytheon Systems Company, is the designated depot for repair of the system. The DVD contract will require reliability growth and incentivize the contractor to grow reliability beyond the initial contractual requirement. If a system fails before the contractually required Mean Time Between failure, the contractor is required to provide a replacement spare to the fleet. This concept reduces depot costs, improves TAT, improves availability, reduces administrative oversight, and provides a better product to the fleet.

***How is it innovative and creative?***

The DVD concept with guaranteed reliability growth allows the program to go from a traditional Organizational - Intermediate - Depot (O-I-D) maintenance strategy to an O-D strategy. Projected life cycle cost savings are in the order of \$75-200M depending upon the amount of reliability growth over the life of the system.

***How has this new improvement been applied?***

This concept will be placed on contract by the Navy Inventory Control Point in FY 98 to provide depot repairs and replacement spares for the fleet.

***What were the results and lessons learned in developing this improvement?***

Since the contract has not yet been awarded, the results are unknown. It is imperative that both the Government and Industry be willing to accept the risks associated with this type of contract in order to achieve the most benefit. The Government must relinquish configuration control to the contractor. This allows the contractor to proceed using commercial practices and incorporate changes quickly to improve reliability.

***What other information would help another program evaluate its applicability towards their program?***

The ability to grow reliability is an important factor in assessing whether this approach will work for other programs.



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⇒ **(Logistics Support) -- Lessons learned - Program Offices need a notification process or access to a data base that provides information on pending or implemented COTS hardware and software changes**

NAVAIR (PEO-CU)

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TOMAHAWK WEAPONS CONTROL SYSTEM

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***What is the name of your program?***

Advanced TOMAHAWK Weapons Control System (ATWCS)

***Give a description of this idea and how it fits in the program:***

Changes in the hardware and software configurations of COTS equipment or software may have an adverse impact on DoD Tactical systems using the COTS item. Often minor changes such as firmware may not result in a part or item number change with the vendor but will affect the DoD application of the item. The Advanced Tomahawk Weapons Control System (ATWCS) Program has experienced problem with TAC-3 and TAC-4 components whose firmware has changed and caused problems with the system start-up and diagnostics programs.

***How is it innovative and creative?***

This is being provided as a lessons learned to be considered under similar situations.

***How has this new improvement been applied?***

Our program office has not taken formal contractual steps to require formal notification as defined above. I believe it is a global issue that must be explored in order to assess slight differences in the COTS utilization in the fleet environment. As we have no configuration guarantees with COTS, we must be alerted to upcoming changes which may lead to parts obsolescence and increased life cycle support costs.

***What were the results and lessons learned in developing this improvement?***

Without proper and timely notification, the planning is absent to affect design changes as a result of “factory” changes outside of our control.

▼ ▼  
**MAINTENANCE**

- ◆ Boron/Epoxy Repair of Aluminum Aircraft Structure
- ◆ Ground Maintenance System (GMS)
- ◆ Organizational-To-Depot (O to D) All-Up-Round (AUR) Maintenance Concept

⇒ **(Maintenance) -- Boron/Epoxy Repair of Aluminum Aircraft Structure**

NAVAIR

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***What is the name of your program?***

F-5E/F Adversary Program

***Give a description of this idea and how it fits in the program:***

Boron/Epoxy patch repairs have been designed, manufactured and installed on cracked F-5E/F Vertical Stabilizers in an effort to reduce aircraft downtime in a cheaper, safer, and longer lasting way than the alternative repair options.

***How is it innovative and creative?***

Although Boron/Epoxy composites have been around for many years, they have never been used by the Navy to repair aluminum aircraft structure. The low profile, high strength material is an ideal repair material for control and lifting surfaces that have stringent aerodynamic smoothness requirements. The creative part of this process has been in the development of conformal repair patches that will adhere to irregular surfaces.

***How has this new improvement been applied?***

The conformal Boron/Epoxy repair patch has been used to transfer load and arrest growth of fatigue crack in the F-5 Vertical Stabilizer Main Skin.

***What were the results and lessons learned in developing this improvement?***

This repair technique is very new. Test data is currently being compiled and no flight test data exists. However, due to stringent NAVAIR NDI requirements, confidence level that this will be a safe and durable solution is high. The most important lesson learned to date is that due to the fact that this is a first time application, the acceptance requirements make this a highly process critical repair technique that will probably remain in the Depot rather than in the field as initially planned. Also, it always takes a lot longer than you expect to develop new technology. Approval, design, training, manufacturing, etc., do not happen overnight.

***What other information would help another program evaluate its applicability towards their program?***

Any highly loaded, fatigue critical aluminum structure would be a candidate for this repair.

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⇒ **(Maintenance) -- Ground Maintenance System (GMS)**

NAVAIR

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***What is the name of your program?***

KC-130J

***Give a description of this idea and how it fits in the program:***

A fully integrated, digital maintenance status system which automatically tracks the status of all KC-130J systems and reports to maintenance personnel which WRAs need replacement. GMS also tracks and schedules inspection requirements.

***How is it innovative and creative:***

No existing C-130 aircraft currently have this system. GMS may significantly reduce maintenance workload by automating the troubleshooting and maintenance data recording processes.

***How has this new improvement been applied?***

All KC-130J aircraft will come equipped with GMS.

***What were the results and lessons learned in developing this improvement?***

Will reduce downtime and cost for maintenance. Will adjust scheduled maintenance IAW actual aircraft usage.

***What other information would help another program evaluate its applicability towards their program?***

Concept applicable to other aircraft with digital flight data.

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⇒ **(Maintenance) -- Organizational-to-Depot (O to D) All-Up-Round (AUR) Maintenance Concept**

NAVAIR (PEO-CU)

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***What program are you with?***

Standoff Land Attack Missile (SLAM)/Standoff Land Attack Missile Expanded Response (SLAM ER)

***Give a description of this idea and how it fits in the program.***

Intermediate Maintenance for SLAM at USN weapons stations has been eliminated. Weapons are now issued from and returned to the prime contractor Depot facility when repairs and/or recertification are required.

***How is it innovative and creative?***

Reductions in operation and maintenance funding lines have forced a bottom-up review of program weapon

maintenance processes to increase efficiency. The program has streamlined its maintenance concept to reflect consolidation of all maintenance activity at a single Depot facility. This concept is innovative because it identified and eliminated an expensive and largely unwarranted level of government maintenance activity.

***How has this new improvement been applied?***

All SLAM weapons are now processed through a single maintenance location operated at the Depot facility. All intermediate maintenance activity at the weapons station level has been eliminated. It is planned that all SLAM ER weapons will follow this same maintenance concept.

***What were the results and lessons learned in developing this improvement?***

Implementation of this concept has resulted in a reduction in overall operation and maintenance costs, increased weapon availability, reduced technical documentation requirements, and downsized infrastructure support requirements.

***What other information would help another program evaluate its applicability towards their program?***

Cost analysis techniques used to assess the concept and its implementation.

▼ ▼  
**MANUFACTURING PROCESSES**

◆ Multi-Missile Factory

⇒ (Manufacturing Processes) -- Multi-Missile Factory

NAVAIR

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***What is the name of your program?***

High Speed Anti-Radiation Missile (HARM)

***Give a description of this idea and how it fits in the program:***

Converted low rate, unique production lines into an all encompassing multi-missile production shop.

***How is it innovative and creative?***

Utilizes common manufacturing practices, processes and procedures to manufacture several different missile systems instead of separate lines for each system.

***How has this new improvement been applied?***

HARM, JSOW, and Javelin systems are now manufactured/ assembled using common personnel, equipment, and processes in order to decrease cost and improve reliability.

***What were the results and lessons learned in developing this improvement?***

Works well in low rate fabrication situations where there are limited systems competing for resources.

***What other information would help another program evaluate its applicability towards their program?***

With the continuing reductions/downsizing related to the acquisition of defense articles, this type of arrangement provides a cost-effective solution which facilitates greater efficiencies.

## METRICS MANAGEMENT AND REPORTING PROCESS

- ◆ Innovative use of university graduate students to conduct system analysis for the PEO(CU) Metrics Management and Reporting Process

⇒ **(Metrics Management And Reporting Process) -- Innovative use of university graduate students to conduct system analysis for the PEO(CU) Metrics Management and Reporting Process**

NAVAIR (PEO-CU)

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### ***What is the name of your program?***

Program Executive Office for Cruise Missile and Unmanned Aerial Vehicle Joint Office (PEO(CU))

### ***Give a description of this idea and how it fits in this program.***

First, the analysis approach will define a core set of the PEO(CU) metrics that will be used to baseline, track, and report program performance. Three types of metrics will be defined:

- 1) metrics common to all PEO's programs (core metrics)
- 2) metrics unique to specific PEO's programs
- 3) ad hoc metrics

These metrics are intended to relate to the PEO's strategic plan, mission, and program summary, where applicable. Second, this analysis approach will define a metric's management and reporting process that will quickly and efficiently collect, analyze, and report multi-program metrics data relevant to management needs.

### ***How is it innovative and creative?***

The PEO(CU) accepted the no-cost assistance of the George Washington University (GWU) School of Engineering and Applied Science (SEAS) to study metrics collection and analyses with the PEOs. A spring semester 1998 system analysis class, consisting of five GWU SEAS doctoral and graduate students, was assigned a semester project to apply their system analysis skills to study the PEOs' metrics process and propose a solution and implementation plan. The PEO assists the GWU systems analysis team by arranging interviews with the appropriate ASN(RDA) and PEO personnel, and providing non-sensitive program documents critical to the success of the analysis. The GWU systems analysis team coordinates with the PEO Acquisition Division and provides periodic status reports. Feedback on the team's progress is provided by the PEO. The students recent academic training and lengthy professional careers make them uniquely qualified to focus on issues and apply their collective knowledge to solve a critical real world problem.

### ***How has this new improvement been applied?***

The core set of metrics and efficient process to collect, analyze and report them will be applied to all programs within the PEOs. The application of program unique and ad-hoc metrics will be introduced on the Outrider, Tactical Control System, and Advanced Tomahawk Weapon Control System programs for evaluation prior to implementation across the PEO.

### ***What were the results and lessons learned in developing this improvement?***

The results will be a set of core and program unique metrics to collect or calculate across all programs under the PEOs, which provide a meaningful assessment of programs health. Secondly, an effective and efficient process to collect and synthesize the metrics data needed to generate the PEO's metrics briefing to the ASN(RDA)

and establish a metrics database within each program and the PEO. The lesson learned is that establishing an effective metrics program is challenging, but the efficiencies gained and ability to identify and report problems earlier has the potential of averting serious program impacts.

Four of the five-team members' work for the government, and the fifth provides high level systems engineering and technical assistance for a large DoD and Research & Development program. Perhaps the best lesson learned is that the government can get highly skilled, professional analysis services for free, that would cost hundreds of thousands of dollars if contracted.

***What other information would help another program evaluate its applicability to their program?***

Other programs should consider the reputation and academic strength areas of local educational institutions and track in-house research interest being pursued by their employees at these institutions. Requests for collaboration to solve a government problem should be directed to the graduate schools, where applicable, to obtain the high level of experience and academic training that is needed for most complex DoD problems.

▼ ▼

## MULTI-YEAR PROCUREMENT

- ◆ Escalation of aircraft combined with Multiyear Procurement of the T-45C airframe to save the Navy \$246M dollars from previous President's Budget (18.5% savings) for this program

⇒ **(Multi-Year Procurement) -- Escalation of aircraft combined with Multiyear Procurement of the T-45C airframe to save the Navy \$246M dollars from previous President's Budget (18.5% savings) for this program**

NAVAIR

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***What is the name of your program?***

Jet Flight Training System (T45TS)

***Give a description of this idea and how it fits in the program:***

Multiyear procurement provides stable funding to government contractors, allowing long term Economic Order Quantity (EOQ) arrangements to be made with sub-contractors and better planning for the prime contractor. Therefore, these EOQ savings can be passed onto the Navy so that other Navy needs can be funded in the POM. It fits in the program because the program is over halfway through it's planned procurement (stable configuration and cost confidence based on actuals), the aviator training requirement is stable, and the Navy is committed to stable funding in order to achieve the MYP savings.

***How is it innovative and creative?***

It allows the Program and the Navy to obtain more jet trainers for fewer dollars, allowing the Navy to stretch much needed procurement dollars. It's smart business to turn solid Navy requirements into Multiyear Programs and create a Win-Win for both the Navy and our Prime Contractors.

***How has this new improvement been applied?***

Savings has been taken from the Program's budget and applied to other Navy procurement needs in the POM. The actual savings will occur from FY 99-03.

***What were the results and lessons learned in developing this improvement?***

Results are a Multiyear Procurement for the T-45 airframe has been submitted to Congress in the PresBud submit for FY 99. Lessons learned are that Multiyear Procurement is a TEAM effort and that communication and involvement of the many interested parties, including the prime contractor, is critical to success.

***What other information would help another program evaluate its applicability towards their program?***

The evaluation requirements for a Multiyear procurement are:

- Stable requirement
- Funding stability
- Configuration stability
- Cost confidence
- Confidence in Contractor capability



▼ ▼  
**PAPER-FREE ACQUISITION**

◆ NAVICP Paper-free Acquisition Task Force

⇒ **(Paper-Free Acquisition) -- NAVICP Paper-Free Acquisition Task Force**

NAVSUP

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***What is the name of your program?***

NAVICP Paper-Free Acquisition

***Give a description of this idea and how it fits in the program:***

A NAVICP Paper-Free Acquisition Task Force has been formed to implement Management Reform Memorandum #2: Moving to a Paper-free Acquisition Process by 1 January 2000.

***How is it innovative and creative?***

Using integrated process team concepts, NAVICP internal and external stakeholders are working together to effect a paper-free acquisition process that permits manageability, accessibility, and shareability of all relevant data.

***How has this new improvement been applied:***

Through a consensus process, creative approaches to a paper-free acquisition process were discussed. The NAVICP team agreed to build on our current strengths of ANSI X12 Electronic Data Interchange, DFAS Electronic Document Access, and NAVSUP Navy Electronic Commerce Online, and also to execute mini-projects, such as digitizing drawings and a web-based tech data ordering system, where it made good business sense.

***What were the results and lessons learned in developing this improvement?***

Out of 3,000 contractors that NAVICP did business with in FY 97, only 80 received more than 50 awards from us. NAVICP will concentrate its efforts on these top 80 contractors plus our top 20 small business partners. Interestingly, NAVAIR is one of NAVICP's "Top 50" contractors (through the Military Interdepartmental Project Request (MIPR) process).

***What other information would help another program evaluate its applicability towards their program?***

A complete PowerPoint presentation with lessons learned could be presented in 20 minutes at the Change through Ex-Change Conference.

▼ ▼  
**PARTNERING**

- ◆ From POLARIS to Lunar Prospector and Beyond: A case study in industry/government partnerships
- ◆ Partnering with Industry through the vehicle of a Cooperative Research and Development Agreement (CRADA)

⇒ **(Partnering) -- From POLARIS to Lunar Prospector and Beyond: A case study in industry/government partnerships**

SSP

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TRIDENT

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***What program are you with?***

The TRIDENT Strategic Weapons System (SWS) programs managed by Director, Strategic Systems Programs (SSP)

***Give a description of this idea and how it fits in the program:***

Launch complex 46, developed by the Navy as a Fleet Ballistic Missile (FBM) test site has been converted by the state of Florida to accommodate multiple types of space launch vehicles. This dual use facility will support new commercial and government launch vehicles while retaining the capability to launch future developmental missiles. Spaceport Florida was created as a result of partnerships with aerospace companies, the U.S. Navy, the Air Force, NASA, universities, and the State of Florida. This partnership permits the Navy to maintain a pad launch capability for flight tests at a fraction of the cost that would normally be incurred.

***How is it innovative and creative?***

It demonstrates through partnerships how mutual trust, open and honest communications and shared responsibility for life cycle management can satisfy a mutual need. State, federal and industry partners share the funding of this dual use facility and all benefit in a true win-win situation.

***How has this new improvement been applied?***

The partnership applied assets originally developed to address national military needs, and with funding from federal, state and industry partners, Spaceport Florida is a dual use launch complex. Most notably, on January 5, NASA returned to the moon after 25 years with Launch Complex 46 (the new Spaceport) as the starting point. The first LMMS Athena II was launched carrying the NASA Lunar Prospector as a payload. Lunar Prospector was successfully placed in a 100km lunar polar mapping orbit providing high quality scientific data. One of the first major discoveries was the verification of the existence of a large quantity of water ice crystals in the lunar soil. There will be at least two more commercial launches scheduled to take place in 1998 and 1999.

***What were the results and lessons learned in developing this improvement?***

This partnership offers visible evidence that State and U.S. Navy representatives can work in unprecedented ways to develop and achieve mutual objectives. "Dual Purpose" activities create cost and resource benefits to participants. Tangible results include improved infrastructure, added capabilities, shared assets and resources as well as shared site maintenance costs.

***What other information would help another program evaluate its applicability towards their program?***

It is necessary to carefully identify and evaluate situations where a potential partnership can realize

substantial payoff. Partnering can reduce the costs associated with maintaining limited use facilities. Some important factors to consider are the amount of parochialism that is inherent in the infrastructure element under consideration, the impediments such parochialism introduce, and the means to overcome these impediments. The degree of government program unique requirements is another important factor to consider.

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⇒ **(Partnering) -- Partnering with Industry through the vehicle of a Cooperative Research and Development Agreement (CRADA)**

MARCOR

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***What is the name of your program?***

Light Armored Vehicle, located at the US Army Tank-automotive and Armaments Command, Warren, Michigan

***Give a description of this idea and how it fits in the program:***

The CRADA provides for the transfer and the further development of several technologies which have been developed by or on behalf of : the US Army Tank-Automotive Research, Development, and Engineering Center (TARDEC); the Program Manager for Light Armored Vehicles, and Diesel Division of General Motors of Canada Ltd. These technologies include Corrosion Prevention and Control methods and procedures as well as application of finite element modeling to vehicle structures and vehicle life prediction.

***How is it innovative and creative?***

This CRADA breaks new ground by partnering across national borders and across services. Also, there are few wheeled vehicles in the world in the weight class of the LAV and that operate under the level of performance and environmental stresses that combat imposes on the LAV. These facts point to the innovative spirit that led to the selection under this CRADA of the LAV vehicle structure computer modeling and corrosion studies.

***How has this new improvement been applied?***

A CRADA is intended to bring mutual benefit to all parties while advancing American commerce. However, the ideas explored in this CRADA are also finding application benefiting the government in unexpected ways. These ideas in areas of automotive structural life modeling and prediction and in corrosive control are seeding a Service Life Extension Program currently being undertaken by the US Marine Corps for their fleet of LAVs.

***What were the results and lessons learned in developing this improvement?***

An agreement such as this CRADA, by cutting across the demarcations between the military services and across national boundaries, is necessarily more complex than would otherwise be the case. The negotiations leading to such an agreement were largely the result of coordinating action by the initiating office, PM-LAV. This whole process could have been greatly accelerated had a coordinating group been established; perhaps a Process Action Team, but a group comprised of empowered representatives of all parties, including their legal and administrative experts. This is the principal lesson learned.

***What other information would help another program evaluate its applicability towards their program?***

The Government's primary interest in sponsoring CRADAs is to foster commerce in the United States. However, the process or material developments that have emerged from CRADAs may be of use to advance a program. Further, if a CRADA is being actively executed to address areas of interest to or applicability to a program, it may be possible for a program office to be brought into the agreement as a partner through sponsorship by a Government laboratory. Thus, it may well prove worthwhile for the participants in a program to "mine" the archives of those Government laboratories charged with sponsoring CRADAs, as PM-LAV did with TARDEC.

▼ ▼  
**PARTS FLEXIBILITY**

◆ Parts Flexibility vs. Performance Specs

⇒ **(Parts Flexibility) -- Parts Flexibility vs. Performance Specs**  
NAVSEA

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***What is the name of your program?***

Fiber Optic Data Multiplex System

***Give a description of this idea and how it fits in the program:***

This idea applies to militarized systems. Considering the pressure to change over to performance specs vs. detailed technical data packages, I wanted to have the benefits of performance specs, without the cost of developing performance specs down to the line replaceable unit (which is the only way to not lose the time and money of an already developed supply support system), and also not lose the capability to fault isolate down to the piece part level aboard ship. I have allowed my manufacturers the flexibility to use whatever parts they want, as long as all the system performance requirements have been met, and obtain authorization by way of class II ECPs. This way it is simple to get the authorization to change parts, and yet the new parts are still documented to allow fault isolation to the piece part level aboard ship.

***How is it innovative and creative?***

I am able to take advantage of the cost savings due to the parts flexibility normally offered by performance specs, without paying for line replaceable unit performance specs, and also not losing the capability to fault isolate to the piece part level aboard ship.

***How has this new improvement been applied?***

By way of the statement of work in production contracts.

***What were the results and lessons learned in developing this improvement?***

Parts problems, due to obsolescence, are dealt with at a lower level thus making parts problems resolution much more efficient. I have not had any issues from implementing this idea.

***What other information would help another program evaluate its applicability towards their program?***

If you have competition (i.e., multiple manufacturing sources) good communication between the sources is a must. I have set this up by way of the Administrative Contracting Officers.

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## PERFORMANCE BASED SPECIFICATIONS

- ◆ Single Performance Based Specification for JSF E&MD Contract
- ◆ Use of Performance Based Specifications in Engineering and Manufacturing Development
- ◆ Use of Performance Based Specification in RFP

⇒ **(Performance Based Specification) -- Single Performance Based Specification for JSF E&MD Contract**

NAVAIR - JSF

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***What is the name of your program?***

Joint Strike Fighter (JSF) Program

***Give a description of this idea and how it fits in the program:***

The concept is for the single contractual specification to embody only the minimum requirements essential for the government to effectively manage the program. This allows the contractor maximum trade space to satisfy those essential performance requirements within the cost constraints of the program (meeting the objectives of CAIV. Maintaining aggregate performance requirements on contract also maximizes the contractor's freedom in requirements allocation (or flowdown) process and hardware and software design efforts (meeting the objectives of Clear Accountability In Design – CAID).

***How is it innovative and creative?***

This approach captures all the essential performance requirements in a single specification, rather than having several specifications and increasing levels of detail requirements. The single specification can include requirements normally present much lower in a traditional specification tree, while avoiding unnecessary contractual documents, providing streamlined program documentation.

***How has this new improvement been applied?***

The single performance specification is being initiated in the JSF program as the single source of technical requirements for the E&MD solicitation and contract.

***What were the results and lessons learned in developing this improvement?***

Single document for requirements into E&MD. Lesson Learned – Must develop good criteria and configuration control plan to keep document streamlined.

A government and industry coordinated performance based specification for the E&MD solicitation. Lesson Learned – Must conduct specification generation in a team environment.

***What other information would help another program evaluate its applicability towards their program?***

As an integral part of Acquisition Reform implementation, must be compatible with program strategy, source selection, etc. Must have strong IPT function to provide insight – cannot rely on voluminous contractual documents.

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⇒ **(Performance Based Specifications) -- Use of Performance Based Specifications in Engineering and Manufacturing Development**

NAVSEA

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***What is the name of your program?***

Advanced Integrated Electronic Warfare System (AIEWS), AN/SLY-2(V)

***Give a description of this idea and how it fits in the program:***

PEO(TAD) used a Broad Agency Announcement (BAA) to award two contracts to:

- a) Identify critical characteristics and capabilities of the notional AIEWS;
- b) Identify the most promising system/subsystem concepts;
- c) Demonstrate that the critical technologies associated with the most promising system/subsystem concepts posed minimal cost, performance, and schedule risk; and
- d) Assist the Program Office in defining a low risk, cost effective, phased development plan for the most promising system.

During the period of performance the BAA Contractors conducted life cycle system/subsystem cost/performance tradeoff analyses. Concurrently, the Naval Research Laboratory and the Applied Physics laboratory of Johns Hopkins University conducted critical requirements-related cost performance tradeoff analyses. The results were incorporated along with the operational requirements into a performance-based specification, the AIEWS Performance and Compatibility Requirements (P&CR) document, that was used along with a statement of work in the EMD RFP and subsequent contract. The P&CR, like the RFP, was released to interested and cleared contractors for industry review and comment prior to formal release.

***How is it innovative and creative?***

The use of a performance based specification gives maximum latitude to the bidding contractors. Release of a draft P&CR insured in-depth industry understanding of the AIEWS requirement and provided a feedback mechanism to eliminate no-value added requirements.

***How has this new improvement been applied?***

The P&CR was used in the AIEWS EMD source selection.

***What were the results and lessons learned in developing this improvement?***

The AIEWS source selection was conducted in an abbreviated fashion. The use of a performance-based specification that had early industry involvement in development along with industry review in the draft stage facilitated the accelerated source selection process and subsequent contract award.

***What other information would help another program evaluate its applicability towards their program?***

Use of a performance-based specification is currently DoD policy for most acquisitions. Adding early industry involvement in the development and review of the performance based specification insures understanding of the fundamental performance requirements for technically complex programs.

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⇒ **(Performance Based Specification) -- Use of Performance Based Specification in RFP**

NAVSEA

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***What is the name of your program?***

Infrared Search and Track (IRST)

***Give a description of this idea and how it fits in the program:***

RFP written with performance based specification versus detailed specification.

***How is it innovative and creative?***

Provides industry with a statement of requirements without stating methods for achieving the required results. This allows industry to develop products using the best practices employed by the industrial community, vice the specialized and costly method of development via government-authored detail specifications.

***How has this new improvement been applied?***

This was applied to the final RFP released to industry.

***What were the results and lessons learned in developing this improvement?***

The result a RFP that was easier to develop on the government side, and less time-consuming for industry to respond to. Resulted in a successful contract award.

***What other information would help another program evaluate its applicability towards their program?***

When developing a RFP, consider if industry is currently developing similar equipment/systems for non-government customers. If these products meet government requirements, then the program is a candidate for use of performance based specification.



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**PROCESS INNOVATIONS**

◆ Concurrent Reviews of Procurement Packages - CROPPs

⇒ **(Process Innovations) -- Concurrent Reviews of Procurement Packages - CROPPs**

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***What is the name of your program?***

MILESTONE "0"

***Give a description of this idea and how it fits in the program:***

Package enters the contract tracking system. Accomplish multiple documentation reviews of the procurement package at the same time, by the Contracts, Security, Legal (including Patent Council) includes:

- SPECS/STDS
- Data Requirements
- SOW/SOO
- Tech Eval Plan
- Security
- Legal
- Patent/Data Rights

One revision to package that incorporates all corrections and recommendations with a clear understanding of the requirement by each participant.

***How is it innovative and creative?***

Reduces the time it takes to plan and place a contract.

***How has this new improvement been applied?***

To all procurement actions:

- CBD notice is prepared and accomplished in Milestone "0"
- Implement contract writer (include D&F, cont. plan and administration plan)
- Delete CRB Review at Milestone "I" (Accomplished in Milestone "0")

This allowed for full and immediate implementation of DoD policy on specs/std reform:

- Established database for tracking utilization of SPEC/STD in contract actions.
- Identify SPEC/STD requested in initial procurement package
- Indicate number of Data Item Descriptions (DID) identified in SOW.
- Apply Acquisition Reform initiatives
- Obtain minimum essential data
- Report actual SPEC/STD invoked and appropriate DID retained in contract actions.

***What were the results and lessons learned in developing this improvement?***

- Formats preapproved by appropriate codes/activities
- Reduced preparation time
- Reduced review time
- Fewer protests
- Time/cost savings in Supply resources

***What other information would help another program evaluate its applicability towards their program?***

- Make the system easier for customers
- Reduce rework by Technical Codes
- Make SPAWARSYSCEN more competitive

▼ ▼  
**PROGRAM REVIEW**

◆ Program Review Teaming

⇒ **(Program Review) -- Program Review Teaming**

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***What is the name of your program?***

Fiber Optic Data Multiplex System

***Give a description of this idea and how it fits in the program:***

When conducting a Program review, invite all stakeholders. SHAPMs, both shipbuilders, both SUPSHIPS, reps from both manufacturers, FTSC/LANT and FTSC/PAC, ISEAs, field engineers, logisticians, Navy field activities, and others, as required, are invited to attend. This Program specifically deals with the AEGIS shipbuilding program.

***How is it innovative and creative?***

Teaming is not a new idea but I have not seen it applied to Program Reviews in this way.

***How has this new improvement been applied?***

Initially just by inviting the appropriate parties. To have an effective team though, every participant must feel like part of the team and know that their input is as important as anyone else's. I make sure that this is the case along with an open communication policy.

***What were the results and lessons learned in developing this improvement?***

The results are an extremely well coordinated program. The lessons learned are that discussions can be considerably longer, more detailed, and easier to get off track. The Program Review Chair must keep the group focused. Also, conducting the review away from the office has been a benefit due to after hours team building amongst all the stakeholders.

***What other information would help another program evaluate its applicability towards their program?***

This is applicable to every program. Implement teaming wherever you can.

▼ ▼  
**RE-PROCUREMENTS**

◆ Reduction of military specifications and standards in the re-procurement of legacy systems

⇒ **(Re-Procurements) -- Reduction of military specifications and standards in the re-procurement of legacy systems**

NAVAIR (PEO-CU)

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***What program are you with?***

AQM-37 Aerial Target Program

***Give a description of this idea and how it fits in the program:***

The AQM-37 Aerial Target was procured to a government owned level III technical data package (TDP) since the early 1990s. The TDP was used to perform limited competitions between dual qualified sources. A competition was held in the mid 1990s to go single source for a base year contract. Ownership costs for the TDP in the form of engineering change proposals for obsolescence (MIL SPEC and STD) and management of the drawing package grew to be a significant concern. One engineering change to replace a power supply due to obsolescence cost \$209K in nonrecurring and about \$185.00 per target in recurring costs. Future changes were anticipated based on the rate of change in the area of electronics.

Prior to exercise of the next option on the fixed price contract, discussions were held with the contractor for converting to a performance based contract. The contractor was willing to take on the additional risk in exchange for control of the TDP. The contract was modified to replace the TDP with a performance specification at no change in price. The change was implemented on all existing contracts.

***How is it innovative and creative?***

The change in strategy from a level III drawing package to a performance specification was implemented during the current contract and options versus waiting for a new follow-on procurement to take place.

***How has this new improvement been applied?***

The contractor is now responsible for the configuration management of the target system and meeting the performance requirements. The obsolescence issues and drawing maintenance are being handled by the contractor and no longer a government responsibility. The contractor is able to act swiftly to changes and minimize disruption to the production line. The government has been able to reduce work load (cost) by no longer having to maintain the drawing package. This work included drawing changes and engineering support for those changes.

***What were the results and lessons learned in developing this improvement?***

The government workload was reduced by approximately \$200,000.00 annually. The future will determine the overall results of this change. The biggest challenge was in the government and contractor becoming used to performance based procurement and changing the way we are used to doing business. It will take some time before the new way of doing business is second nature to both the government and contractor teams.

## REQUIREMENTS DEVELOPMENT

### ◆ Development of Threshold Requirement for the Shotgun Bayonet Lug

⇒ (Requirements Development) -- Development of Threshold Requirement for the Shotgun Bayonet Lug

MARCOR

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*What is the name of your program?*

Joint Service Combat Shotgun

*Give a description of this idea and how it fits in the program:*

The initial concept called for a single COTS shotgun for all DoD components to replace the multiple models currently in service. Once the requirement completed staffing, however, it included a number of demanding performance criteria, some of which were stated in limiting design terms. In response, we returned to the user representatives with a full explanation of the acquisition implications of the requirements and their associated costs, and asked for a reconsideration of requirements in that context.

*How is it innovative and creative?*

The innovative aspect was the linking of procurement and support costs to specific performance criteria. Up until this point, the user had no clear visibility of the cost of various levels of performance. By giving them that information, they were better able to make an informed decision. We found that the user is, in fact, very sensitive to cost at present. They fully recognize that increases in cost for one program result in the inability to afford another.

*How has this new improvement been applied?*

There are now very close relationships between the requirements generators and the material developers on all of the programs within our office. This relationship has greatly streamlined the acquisition process and provided better end results.

*What were the results and lessons learned in developing this improvement?*

Although the material developers must not be the ones generating the requirements for their service, it is absolutely necessary for them to be involved in the process to ensure that the material solution can be economically procured in a timely manner.

*What other information would help another program evaluate its applicability towards their program?*

All programs should have a free flow of information between the requirements generators and the material developers.

## REQUIREMENTS EVALUATION

### ◆ Cost-Performance-Combat Effectiveness Trade Studies in Early PDRR

⇒ **(Requirements Evaluation) -- Cost-Performance-Combat Effectiveness Trade Studies in Early PDRR**

MARCOR – DRPM AAA

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***What is the name of your program?***

Advance Amphibious Assault Vehicle

***Give a description of this idea and how it fits in the program:***

Requirements evaluation is an assessment by the program office of the necessity, cost effectiveness, and relative value of system requirements established by an Operational Requirements Document. The AAV system requirements evaluation included cost, performance, and combat effectiveness analyses of vehicle design alternatives to assess the sensitivity of the key performance requirements. Early analysis of the sensitivity of critical system parameters on operational outcomes frames the discussions and decisions to be made in PDRR regarding requirement changes, requirements "creep", and program and vehicle production and life cycle costs. Variations of requirements around established threshold values allows assessing both the optimal performance relative to the individual requirements and the trade-offs associated with interaction of critical performance requirements. Trade studies early in PDRR that assess design alternatives in operationally realistic scenarios provide an excellent foundation for the Analysis of Alternatives required for a successful Milestone II decision.

***How is it innovative and creative?***

a) Contract Requirements for Whole-System Trade Studies

The AAV PDRR contract required the contractor to conduct total system core capability cost-performance-combat effectiveness trade-off analyses.

b) Tools to Support Combat Effectiveness Assessments

Prior to the award of the PDRR contract, the DRPM-AAA program office, in conjunction with Navy, Marine Corps, Army, and Intelligence agencies, supported the development of approved scenarios for use in assessing system operational effectiveness. DIA approved scenarios were developed; these scenarios were populated with 2015 force assets; and realistic usage of all assets was scripted. These scenarios were available to support the required contractor trade studies.

c) Comprehensive, Early Analysis of Design Alternatives

The AAV trade study effort included extensive analysis of alternative vehicle designs to fully evaluate the sensitivity of critical system requirements and the interaction of critical system requirements. Early assessment (prior to preliminary design) of design alternatives in an operational environment provides invaluable information for system requirements prioritization, design decisions, and identification of potential risk areas.

***How has this new improvement been applied?***

Trade studies evaluating the cost, performance, and operational effectiveness of changes to key system requirements were completed to support the AAV System Design Review. These trade studies included varying levels of capability in each of the core performance areas (lethality, survivability, mobility, and lift). Design alternatives were assessed reflecting variations in the levels of capability below required threshold values, in the threshold to objective ranges, and above the objective values. The design alternatives were assessed for cost,

combat effectiveness, and engineering performance. The trade study effort provided the data to support requirements changes and design decisions. The AAV System Specification was updated based on the trade study efforts.

***What were the results and lessons learned in developing this improvement?***

Lessons Learned:

- a) Requirements evaluation, including assessments in a realistic combat environment, needs to be done early. An Analysis of Alternatives done at the end of PDRR (to support Milestone II) is too late to realistically effect vehicle design decisions.
- b) Operational effectiveness assessments of vehicle or system requirements provide significant insights for prioritization of requirements and risk identification.
- c) Sensitivity analysis of critical performance parameters provides input for both optimizing performance relative to individual requirements and optimizing the vehicle based on the interplay of the key performance requirements.
- d) When cost can be discussed using operational performance language, cost can truly be an independent variable.
- e) Preparation for effective trade studies is not cheap but has major payoffs. Developing scenarios which are comprehensive, realistic, and accredited requires extensive planning and coordination between multiple organizations.
- f) Warfighter (the user) involvement is crucial to the successful evaluation of requirements and conduct of requirements trade studies.
- g) Keep the vehicle mission in mind.
- h) Complete assessment of vehicle design alternatives at the start of PDRR is impossible without significant assumptions being made. Always be cognizant of what the assumptions or unknowns are and how they might impact the output.

***What other information would help another program evaluate its applicability towards their program?***

Requirements Clarification: Our trade effort was critical for a comprehensive understanding by the Marine Corps, the program office, and the contractor of our operational requirements. Battlefield Impact: Realistic modeling of our asset on a realistic battlefield justified requirements and design changes and cost/performance trade-offs. Range of Performance: How good is good enough? Sensitivity analyses of key performance parameters can provide the data needed to make smart vehicle cost and performance trade-offs.

## REUTILIZATION OF COMPUTERS

◆ Exchange/Sale of computer system parts

⇒ (Reutilization of Computers) -- Exchange/Sale of computer system parts

NAVSEA

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*What is the name of your program?*

Test and Reutilization Center (TRC)

*Give a description of this idea and how it fits in the program:*

Obsolete is a relative term. Computers found inadequate for one task are still quite acceptable for others. Additionally, many organizations within the Navy have to do without office automation due to tight budgets. Traditional procedures for handling surplus computers tend to be destructive of the equipment's residual value. The people handling it tend to equate the terms "surplus" and "trash" in their minds, thus creating a self-fulfilling prophesy. By dealing with the equipment on a local level and expediting the process, the residual value of this equipment can be maintained and utilized. The result of this program is that over 75% of the equipment which in the past was destined for metal recovery is now being put back into use, either within the Navy or through donations to schools. While the remaining 25% was often still in good condition, there was no requirement for it within the Navy organization or schools. At the same time, NAVSEA has need for other items for use in upgrading and/or repairing other systems. It was found that many local computer hardware vendors have need for the items we couldn't use and were willing to exchange them for items we need. After consulting with the contracting and legal offices at NAVSEA, it was determined that a reinvention waiver would not be enough. A new interpretation of the wording in certain laws was required. The TRC staff then requested permission to use this interpretation. The request was submitted to DISA which then staffed it up to GSA where the Director of the Personal Property Management Policy Division gave permission for a trial program. Using standard contracting procedures, unneeded computer parts such as monitors are now being exchanged for needed parts such as motherboards, memory, and disk drives.

*How is it innovative and creative?*

Traditional methods of disposing of surplus computer equipment tend to destroy its residual value through delays and rough handling. By capturing unneeded computer equipment on a local level and expediting its reuse, this value is preserved. Having received special permission for a trial program, the TRC is now able to exchange some of these unneeded parts for other parts that are in demand. The result has been significant budget savings while increasing the availability of much needed resources.

*How has this new improvement been applied?*

The TRC staff identifies unneeded parts that can be made available for the exchange / sale program, while the NAVSEA help desk staff identifies their requirements for repair / upgrade parts. The contracting office then issues an RFP using standard procedures, stating that NAVSEA intends to procure the listed items. The only difference is that instead of asking how many dollars the vendor will charge, we ask how many items off a second list of available parts they will require. Once the bids are in, the contract goes to the low bidder. In this way, we insure that we get maximum value for the unneeded parts.



***What were the results and lessons learned in developing this improvement?***

To date, NAVSEA has completed two exchange/sale transactions resulting in the receipt of upgrade parts valued at over \$17,000. It has been determined that there is a definite demand for our unneeded parts and that they can be converted to much needed upgrade parts. The benefits are significant, and more than worth the required effort. At this time, it is still too early to determine if the demand for our old parts will last. Additionally, the TRC staff has learned that it is possible to make changes in the system. While it certainly takes effort and perseverance, upper echelons are willing to listen and work with us.

***What other information would help another program evaluate its applicability towards their program?***

The demand for slightly less than state of the art computer hardware remains great. From our location in Arlington, VA the TRC has provided equipment to field activities and elements of the fleet located in Norfolk, VA, Camp Lejeune, NC, Jacksonville, FL, New Orleans, LA, and San Diego, CA. Donations have gone to schools in Maine, New York, Illinois, Maryland, Washington DC, Virginia, and North Carolina. The recycling program more than pays for itself through savings within the organization housing it, and is strongly recommended. The exchange / sale program should work anywhere, but local vendors should be contacted to determine interest levels. It is probably quite possible to “flood the market.”

▼ ▼  
**RISK MANAGEMENT**

- ◆ Continuous comprehensive risk management
- ◆ Develop and implement a Continuous Risk Management Process, including an On Line Risk Database (OLRDB) resident on the Program Office LAN, but extending in a WAN-like manner to include all program participants, both Government and Contractor
- ◆ Developmental Test/Operational Test (DT/OT) Mapping
- ◆ Master Integrated Schedule

⇒ **(Risk Management) -- Continuous comprehensive risk management**

NAVAIR

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***What is the name of your program?***

V-22 Risk Management

***Give a description of this idea and how it fits in the program:***

Risk management is a basic element of the V-22 program culture. Continuous risk identification and comprehensive assessment of potential impacts of risk is the foundation of the V-22 program. Prime contractors and Government personnel from all pertinent program disciplines participate and any program participant may identify a potential risk. The results of the various analyses are continuously brought to the program decision makers.

***How is it innovative and creative?***

The continuous identification of potential risks vice “periodic” risk identification and review, regardless of perceived size of the risk, brings attention to issues much earlier when they are typically more manageable. Then the involvement of personnel from all program disciplines during assessment of the potential risk assures a seemingly insignificant risk viewed by one discipline does not pose a significant risk when viewed by another discipline.

***How has this new improvement been applied?***

The V-22 risk management approach has been implemented contractually in the prime contract and with program management direction through the IPTs for Government personnel. The risk management requirements describing the process and the expectations have been institutionalized by prime contractor process requirements.

***What were the results and lessons learned in developing this improvement?***

This effort has identified over a thousand risks that have been analyzed for potential impact on program goals. In hundreds of cases, plans to mitigate the risks and minimize or eliminate the impact have been developed and implemented. The identification of all potential risks, no matter how small when originally perceived, the ability of any program participant to identify a potential risk, the continuous assessment of the identified risks and the creation of the corresponding mitigation plans, and the active participation of the program decision makers, has eliminated hundreds of risks that would have potentially been detrimental to program goals. Many potential risks, when identified early, have been disposition with action long before they would have been visible as major potential problems using more traditional practices.

***What other information would help another program evaluate its applicability towards their program?***

One fundamental indicator of the need for a similar program is frequent emergence of issues disruptive to program goals. These issues are typified by convening ad hoc meetings to further clarify the issue and its potential impact to program decision makers. An active risk program will identify these issues and impacts much sooner reducing the frequency of emerging issues and resulting in far less program impact.

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⇒ **(Risk Management) -- Develop and implement a Continuous Risk Management Process, including an On Line Risk Database (OLRDB) resident on the Program Office LAN, but extending in a WAN-like manner to include all program participants, both Government and Contractor**

NAVSEA

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***What is the name of your program?***

New Attack Submarine (NSSN) Program

***Give a description of this idea and how it fits in the program:***

A continuous risk management process provides for the identification, assessment, mitigation, and tracking of all risk, technical or programmatic. A common database is shared with all program participants either via a Webserver or by exporting the data electronically. The database provides the basis for Program risk reporting, including inputs to the Quarterly DAES Report for ACAT I Programs. Risk status is available instantaneously. Risk reports are credible since they are based on detailed database information that is reviewed by all Program participants.

***How is it innovative and creative?***

First, formal classroom training is provided on the principles of risk management and on use of the Program's risk implementation tools. Then those personnel (or Teams in an IPPD environment) who are most knowledgeable of a risk area (contractor and/or government) report MODERATE and HIGH risk electronically to the OLRDB. Database access encourages continuous reporting of new risk and updating the status of existing risk, including their risk mitigation plans. Accountability and responsibility are implemented in the OLRDB by assigning each risk area a Risk Area Manager and a Reviewer. Risk ownership is enhanced by disallowing anyone other than the Risk Area Manager (representing the submitting individual or team) from changing the risk description, mitigation plans, or level of risk. Risk reports can be generated in real time.

***How has this new improvement been applied?***

A Risk Management Team (RMT) was formed and formally chartered by the NSSN Program Manager as owners of the NSSN risk management process. The team contains representatives of all key Program participants.

The RMT developed a laminated Risk Process Card (RPC) that summarizes key features of the NSSN risk process. It was reviewed and approved by the Program Manager.

The RMT developed a short (16-page) Risk Process Description (RPD) which was signed by the Risk Management Team co-Leaders.

The RMT developed the OLRDB.

The PMO implements the RPD via Project Directives with all PARMs and in all contracts.

The RMT meets quarterly to review the Quarterly Risk Status Report (QRSR) and make risk process decisions.

NSSN Risk Management is considered a part of the management function. Each person involved with the design, construction, operation, support, and eventual disposal is a part of the NSSN risk management process.

***What were the results and lessons learned in developing this improvement?***

All MODERATE and HIGH risk is available to all program participants continuously. Mitigation Plans and the status of those plans are available continuously. Communications between multi-discipline IPTs are enhanced by the OLRDB. Risk Reports are more credible because they are backed up by a database with considerable technical content. Any new perceived risk identified by a Program Manager's Independent Risk Assessment Team, or by the Navy's Independent Test Agency (COMOPTEVFOR), is easily added to the database.

***What other information would help another program evaluate its applicability towards their program?***

The Program must be willing to display all its risk areas. The advantage to doing this is program credibility. A continuous risk management process helps a PMO prioritize its top risk issues. The process makes the resources (e.g., test equipment and test sites) needed to mitigate risk visible for all IPTs to help avoid duplicate scheduling of those resources. The common OLRDB can be sited at the PMO, a Prime Contractor, or a Lead Lab. Where security considerations allow, there are several advantages to putting the database on a Web site. Emphasis is placed on identifying all risk since those identified are then managed to avoid serious consequences. Risk not identified does not get managed and can lead to consequences that require unplanned resources and time to mitigate.

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⇒ **(Risk Management) -- Developmental Test/Operational Test (DT/OT) Mapping**

MARCOR

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***What is the name of your program?***

Developmental Test/Operational Test (DT/OT) Mapping Initiative

***Give a description of this idea and how it fits in the program:***

DT/OT Mapping is a risk assessment and management tool designed to reduce program performance risk and improve success in Operational Test (OT). We develop a structured DT/OT map dendritic and associated survey questionnaire (data collection sheet) which reflects the system's intended operational test. The dendritic links operational effectiveness and suitability to associated objectives, critical operational issues (COIs) and criterion or measures of effectiveness (MOEs). We create the DT/OT map using the Marine Corps Operational Test and Evaluation Agency (MCOTEA) criterion outline as the basis; however, the tool is applicable to all DoD programs that will undergo OT. We then color code the dendritic using all current DT data to provide the Program Manager (PM) an instantaneous assessment of performance risk areas and the likelihood of successfully passing OT. We use the following "stop light" chart as our criterion for color-coding:

Assessment	Rationale
Red	Evidence clearly indicates the system will not likely pass this criterion.
Orange	Little or no data to support an assessment.
Yellow	Inconclusive - data does not clearly indicate if the system will pass or fail.
Green	Evidence indicates the system will likely pass this criterion.

Enclosed is the DT/OT map structure for a fictitious anti-tank missile program called the “BLOCKBUSTER”. The program is fictitious, but the color-coded map illustrates the power of the tool. As you can see, the risk areas are immediately apparent. Current DT data indicates the system will fail two critical criterion (coded red). Failure of these criterion will cause the system to fail two COIs if allowed to proceed to OT, and thus found not operationally effective. In addition, insufficient data exists to support a determination on one criterion (coded yellow) and no data to support a determination on another criterion (coded orange). Thus, the DT/OT map clearly indicates four areas (two in particular) the PM should focus management attention. Furthermore, this information is easily conveyed to all personnel involved in the program or to senior level decision-makers. A questionnaire or data collection sheet accompanies the DT/OT map for each COI and criterion combination to document how the color-coded entry is determined. Attached is an example for the BLOCKBUSTER program.

***How is it innovative and creative?***

COIs are the basic "yardsticks" that all DoD operational test agencies use to measure programs. They are derived directly from the Operational Requirements Document (ORD) and related documents, and placed in Part IV of the Test and Evaluation Master Plan (TEMP). Unfortunately, the linkages between the COIs and related technical specifications and developmental tests are easily lost. DT/OT mapping allows the Program Manager to link developmental tests to operational tests and focus management attention on risk areas. It has several distinct advantages as follows:

- a) Applicable to all DoD programs that will undergo OT.
- b) Easy to use - requires no special technical skills or training.
- c) The dendritic provides a visual picture of the intended OT and the linkages between the various issues, criterion, or MOEs.
- d) Facilitates linkage between DT and each criterion or MOE.
- e) Promotes early and continuous communication between the PM the operational test agency.
- f) Once color-coded, the DT/OT map allows managers at all levels to immediately focus on the problem or risk areas (i.e., management by exception).

***How has this new improvement been applied:***

An analysis of several recently completed OTs revealed that MCOTEA found an alarming number of systems not operationally effective and/or operationally suitable. Initially we selected three programs as pilot programs to attempt the DT/OT mapping technique. The tool proved of such value to the Program Managers that they asked us to create a DT/OT map for other programs. To date, ten (10) systems have ongoing DT/OT Mapping risk reduction programs. System information such as the TEMP, Concept of Employment, detailed test plan, and ORD are analyzed early, with emphasis on the approved operational test criterion outline with its linkage to the ORD.

***What were the results and lessons learned in developing this improvement?***

This tool is less than a year old and still evolving. Although 10 programs are using it, no program has yet transitioned to OT. However, USMC PMs requested the DT/OT map for their program, because they see it as a particularly viable risk reduction and management tool. Furthermore it is easy to use, requires minimal effort and there are no inherent risks. To ensure an unbiased assessment of the system passing test criteria, we recommend that PMs use an IPT to review test results and apply the color codes. This permits a consensus among the testing, requirements, and material development community as to the readiness of the system to enter OT.

***What other information would help another program evaluate its applicability towards their program?***

The time required to perform DT/OT Mapping depends on the adequacy and identification of the operational effectiveness and operational suitability issues and their associated criteria as derived from the ORD and approved by the Operational Testing Agency. Every analysis differs in its scope and complexity. Additionally, DT/OT Mapping should be a continuous, iterative process of assessments before OT. Generally, the initial DT/OT Mapping dendritic and its related assessment documentation requires less than two weeks to prepare.

**See Attached pages for questionnaire and diagram of the process**

**DT/OT MAPPING SURVEY QUESTIONNAIRE  
FOR THE BLOCKBUSTER ANTI-TANK MISSILE**

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**ISSUE 1. Can the BLOCKBUSTER adequately engage armored targets?**

**Criterion 2. The BLOCKBUSTER must demonstrate  $P_h$  of at least 0.5 against a crossing tank target moving at 24 kph at 90° to the weapon-target axis at 200 m.**

Select one:      Critical            Non-critical     

**Assessment.**

Select one:      Red            Yellow            Orange            Green     

Source. (POC & Phone #, document etc.)

POC: G. J. Seidl, DSN 278-2427, Ext 5023.  
DT-IIB Test Director's report pages 25-27.

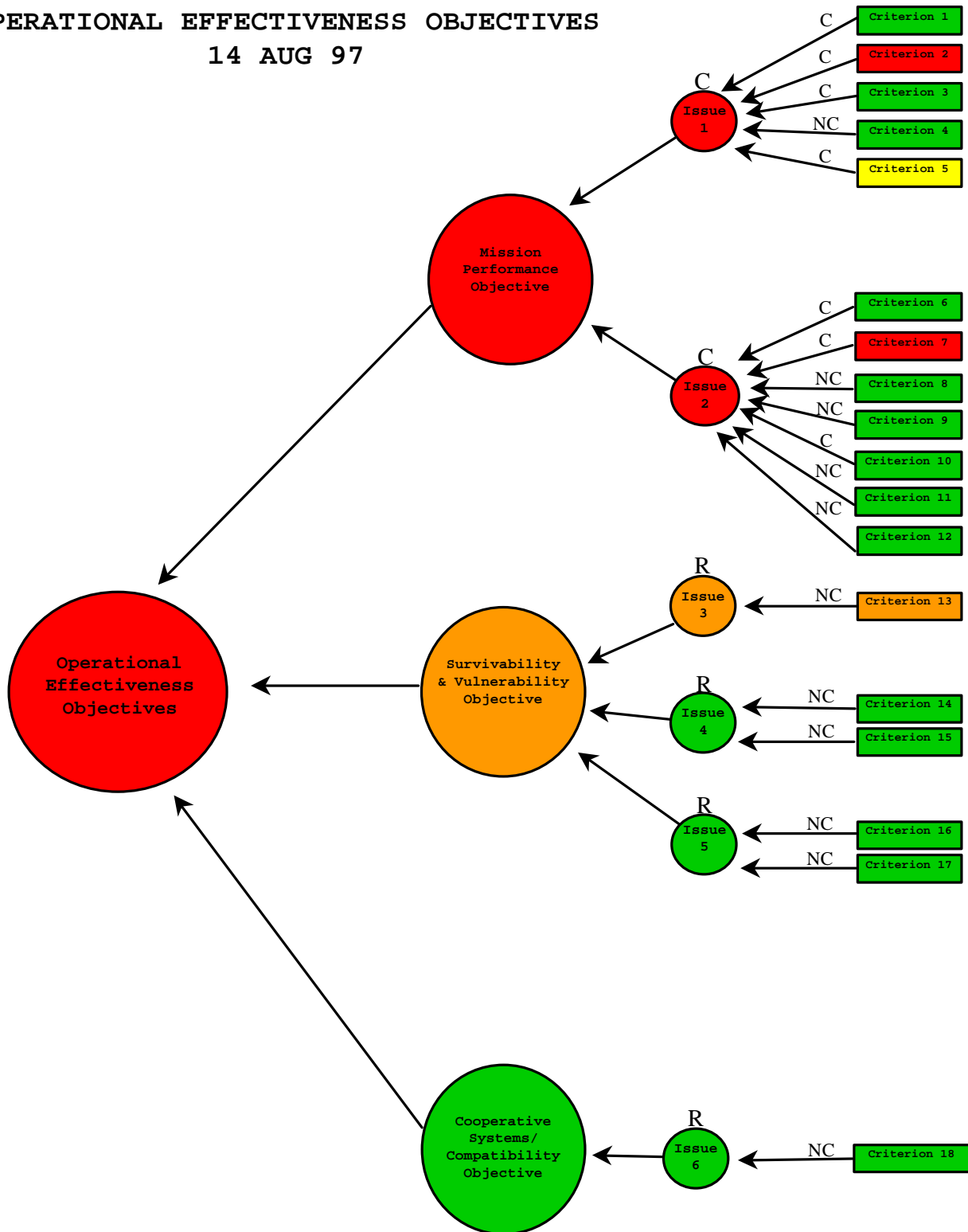
Comments: (ORD para 4a(1))

Analysis Summary: Successful hits on only 3 (of 7) targets. All test conditions met at China Lake on 15 FEB1998. No significant external factors (e.g., weather). One appeared very close, but landed beyond the target. Two appeared to wander off expected trajectory just past mid-point (one up and left; the other, primarily left (trailing)). The fifth rose as anticipated height as anticipated, failed track the target, missing the target (trailing) by at least 20 meters. Furthermore, the fifth appeared as though it would have missed by being too far to the right (trailing) anyway. The eighth test flight was scored as a "No Test" due to having been dropped from the 5-ton when being unloaded. This missile hang-fired (30-seconds and missed the target (landing well beyond)). The system failed to demonstrate the required moving target hit probability as required by the ORD.

# BLOCKBUSTER ANTI-TANK MISSILE

## OPERATIONAL EFFECTIVENESS OBJECTIVES

14 AUG 97



Key: C = Critical  
NC = Noncritical  
R = Relevant

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⇒ **(Risk Management) -- Master Integrated Schedule**

NAVAIR

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***What is the name of your program?***

EA-6B Program

***Give a description of this idea and how it fits in the program:***

The EA-6B program is divided into a number of IPTs which manage different projects associated with the EA-6B system. Often these separate IPTs interact on the same vehicle requiring management of their schedules for effective and efficient integration. PMA-234 has implemented the use of an integrated schedule which associates each IPT's progress and interrelations. The risk of schedule changes adversely affecting critical dependencies can then be identified and monitored before any misalignments become critical.

***How is it innovative and creative?***

This approach adapts the "critical path" concept for use between projects that interrelate but are implemented separately.

***How has this improvement been applied?***

By using project management techniques and computer based scheduling programs to coordinate a number of interrelated projects.

***What were the results and lessons learned in developing this improvement?***

This technique is being newly initiated so that lessons are being learned. Identification of the critical schedule events is one of the most important considerations for early accomplishment. Additionally, depending on the number of interrelated projects, tracking should be done at a high enough level so as to maintain visibility of the critical schedule events.



▼ ▼  
**SERVICE LIFE EXTENSION**

◆ Structural Health Monitoring (SHM) system

⇒ **(Service Life Extension) -- Structural Health Monitoring (SHM) system**

NAVAIR

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***What is the name of your program?***

KC-130J

***Give a description of this idea and how it fits in the program:***

SHM is a fully integrated, digital data recording system that monitors 32 structurally important parameters during all aircraft operations. Downloaded after each sortie, SHM data then provides the means of calculating incremental fatigue life expenditures and also tracks and schedules structural inspection requirements.

***How is it innovative and creative?***

Currently, C-130 structural life tracking system is based upon a “forms tracking” method which uses mail-in reports to gather data. A specific g-load tracking system does not exist in current in-service C-130 aircraft which forces fleet operators to rely upon qualitative estimates to report g loads. This method of tracking service life experience tends to force structural engineers to adopt conservative estimates of remaining service life to assure the safety of fleet operators. SHM will allow a fully automated and accurate tracking of the structural condition of the KC-130J aircraft after each flight which will facilitate precise determination of service life and inspection requirements, thus decreasing life cycle costs.

***How has this new improvement been applied?***

All KC-130J aircraft will come equipped with SHM.

***What were the results and lessons learned in developing this improvement?***

Allows attainment of full service life. Reduces degree of testing needed for items will be monitored. Saves T7E costs, eliminates need for SAFE program, avoids premature replacement of aircraft. Permits near real time management of service life at BUNO level. Integrates actual aircraft usage into maintenance program.

▼ ▼  
**SIMULATION BASED ACQUISITION**

◆ Modeling and Simulation in Support of Requirements Analysis

⇒ **(Simulation Based Acquisition) -- Modeling and Simulation in Support of Requirements Analysis**

NAVAIR - JSF

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***What is the name of your program?***

Joint Strike Fighter Program

***Give a description of this idea and how it fits in the program:***

The use of constructive and interactive modeling and simulation to identify deficiencies with current and proposed operational concepts to determine features required in the Joint Strike Fighter.

***How is it innovative and creative?***

Exploits modeling and simulation an iterative approach to requirements development, integrating warfighters with developers, technologists, and analysts from both government and industry.

***How has this new improvement been applied?***

A requirements group has been established in the program office to provide operators, maintainers, and a modeling and simulation infrastructure.

***What were the results and lessons learned in developing this improvement?***

Warfighters were able to explore the use of generic JSFs with differing levels of performance, and the impact of varying performance on campaign or mission. This tells them what performance levels may be relaxed, reducing cost, but still ensuring mission success.

***What other information would help another program evaluate its applicability towards their program?***

Opportunities exist, through strategic relationships with industry and government, to leverage modeling and simulation across all acquisition phases and functions.

▼ ▼  
**SINGLE PROCESS INITIATIVE**

- ◆ Management Council at Northrop-Grumman Military Aircraft Systems Division
- ◆ Single Process Initiative

⇒ **(Single Process Initiative) -- Management Council at Northrop-Grumman Military Aircraft Systems Division**

NAVAIR

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***What is the name of your program?***

F/A-18

***Give a description of this idea and how it fits in the program:***

The Management Council at the outset, was ineffective in implementing SPIs. The council met and discussed how to become more effective. We established a process, reorganized our communication chain, appointed a single point of contact in DCMC to manage the process, and made the system work for us.

The Department of the Navy Component Team Lead is in the acquisition management job of the program office, thus having the insight to the SPIs and acquisition reform initiatives.

***How is it innovative and creative?***

It is creative in the application of integrating multi-discipline, multi-service, multi programs to achieve success for all involved.

***How has this new improvement been applied?***

It has been applied by having monthly VTCs and quarterly Management Council meetings with firm agendas and everyone knowing the status and progress of the implementation of the Single Process Initiatives.

***What were the results and lessons learned in developing this improvement?***

Results

- Reduced time to process and approve concept papers
- Much Improved communications

Lessons Learned

- Communications are essential to effective

***What other information would help another program evaluate its applicability toward their program?***

If a Management Council is having trouble meeting the 120 day implementation day schedule, they may to adopt a similar process.

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⇒ **(Single Process Initiative) -- Single Process Initiative**

NAVAIR

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***What is the name of your program?***

V-22 SPI

***Give a description of this idea and how it fits in the program:***

A top OSD initiative to allow industry to implement acquisition reform using existing DoD infrastructure. Specifically promotes use of common, facility-wide business and manufacturing processes.

***How is it innovative and creative?***

A Government and Contractor teaming environment exists to promote development and implementation of initiatives towards improving business and manufacturing efficiencies, reduction in costs, and using performance based acquisition practices.

***How has this new improvement been applied?***

The SPI implementation has been accomplished by bringing all stakeholders into the SPI development, evaluation, and implementation process. Our emphasis has been on assuring a thorough technical and programmatic review from Subject Matter Experts and knowledgeable individuals whose products/process are affected. The goal of the SPI team is to work together to achieve implementation of well thought-out and effective initiatives.

***What were the results and lessons learned in developing this improvement?***

Implementation of many SPIs has occurred at Contractors' sights after well coordinated Government review.

One key "lessons learned" was the use of identified SPI subject matter experts as well as V-22 IPT members. A comprehensive review utilizing input from persons knowledgeable in a general sense as well as those knowledgeable of the existing contractor process resulted in implementation of the best all around initiative for both the Navy and the contractors.

Another "lessons learned" was the use of an iterative SPI review process. By providing the Contractor feedback from the Government technical community as soon as possible, many issues and considerations were addressed in short order. Use of management council meetings, face-to-face meetings, and telephone/video conferences facilitated our emphasis on thorough technical and programmatic reviews of initiatives.

***What other information would help another program evaluate its applicability towards their program?***

Other programs would benefit from this approach, if not utilizing something similar already, because of the comprehensive evaluations obtained from the technical and programmatic community. Coordination is becoming ever more important as corporate consolidations and site re-locations continue as industry and government strive towards lean production goals.

▼ ▼  
**SOFTWARE REUSE**

- ◆ Reuse of NTCSS Program developed information management software applications by other US Government Agencies
- ◆ Software development combining COTS with government special purpose software

⇒ **(Software Reuse) -- Reuse of NTCSS Program developed information management software applications by other US Government Agencies**

**SPAWAR**

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***What is the name of your program?***

Naval Tactical Command Support System (NTCSS)

***Give a description of this idea and how it fits in the program:***

This idea is the reuse and innovative application of NTCSS developed software products by other US Government agencies. NTCSS information systems support a plethora of business processes performed by Navy and Marine Corps units. These business processes are generic and exist in a wide variety of organizations across the Government structure. The business areas supported by NTCSS Information Systems include inventory management, supply requisition, aircraft maintenance, medical administration, personnel administration and retail sales. The information management software applications developed by NTCSS are a natural source of state of the art products that can be used by agencies across the Government structure with minimal modification and with a considerable cost savings.

***How is it innovative and creative?***

This idea is innovative and creative in that the NTCSS Program Office and its software field activity at SSC Chesapeake, VA, is adopting commercial practices and is actively marketing its products within the Government structure. The NTCSS Program Office approaches other Government Agencies as partners/customers and makes every effort to assist them in the acquisition and modification of software products to meet their needs with a minimum of cost. In order to provide exposure for its product line, the NTCSS Program Office pursues every opportunity to advertise via published articles and forums such as Change by Exchange.

***How has this new improvement been applied?***

An outstanding example of Software Reuse within DoD is reflected in the NTCSS Program's support to the USMC in their development and deployment of their Asset Tracking Logistics and Support System II (ATLASS) initiative. The ATLASS II program is an effort to develop enhanced ground supply and maintenance functionality for the Operating Forces, the Reserve Component and the Supporting Establishment of the USMC. Additionally, the developed system will be required: to originate and transmit a request for a repair part or item through ATLASS to a Value Added Network via the www, to manage property by shelf life and lot number, to have a single integrated view of all property records, and to manage secondary reparable assets within ATLASS. After extensive research, it was determined that the modification and reuse of existing NTCSS software was in the best interest of the USMC.

***What were the results and lessons learned in developing this improvement?***

This effort is an extraordinary example of reuse of NTCSS Program software to meet USMC unique requirements. The software reuse effort will cost only \$3.5M as contrasted with original Marine Corps estimates of \$14M and will be completed in an extraordinary 13-month period. In addition, the \$3.5M dollars includes the standup of a prototype site at Camp Lejune which was not included in the \$14M estimate provided to the USMC. The ATLASS project is scheduled for delivery this Fiscal Year, and is within budget.

***What other information would help another program evaluate its applicability towards their program?***

Other programs could evaluate the NTCSS reuse effort and review the applications that are available to them for reuse by visiting the NTCSS web site at <http://c4iweb.spawar.navy.mil/pmw151>. The hotlink to SPAWAR Support Center, Chesapeake (formerly NAVMASSO) is also an excellent source of information on software reuse.

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**⇒ (Software Reuse) -- Software development combining COTS with government special purpose software**

NAVAIR

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***What is the name of your program?***

Navy-Portable Flight Planning System (N-PFPS)

***Give a description of this idea and how it fits in the program:***

By creating a limited use flight planning tool, the Navy and Air Force have multiplied the number of available planning seats at a reduced cost. Rather than try to replicate the functionality, PMA-233 took the tools as they existed and certified them for Navy fleet usage.

***How is it innovative and creative?***

This COTS tool initiative eliminates the need to provide expensive hardware (UNIX) and training for aviation units that require a limited automated planning capability, and shows that items built for other specific customers often have wider appeal. The fleet gets functionality they require without a long delay, and the program realizes large cost avoidance in HW and SW development

***How has this new improvement been applied?***

Navy and Marine Corps helicopter aviation squadrons have been issued the new systems giving them a stand alone transportable planning system. Tactical squadrons have a quick planning tool for use when weapons planning or threat considerations are a factor.

***What were the results and lessons learned in developing this improvement?***

Aviation planning for combat is marketedly different from quick flight planning. Even though there remains a requirement for systems capable of full weapons and combat planning, some customers can be satisfied with less complicated and less expensive work stations. Further, it is possible to provide some of this lower end capability (quick flight planning and data loading) at a reduced cost by utilizing COTS hardware (PCs) and COTS and GOTS software.

***What other information would help another program evaluate its applicability towards their program?***

Although this is a limited use solution for aviation planning, the model of finding the existing successful tool and using it can be applied across numerous fields. For instance, insertion of COTS processors into service computers, use of web technology to enhance logistics or taking of off-the-shelf visualization tools. As 5000.2 states, PMs should look across other programs to see if like development is underway when approaching a procurement decision. On the C<sup>4</sup>I side of the house, migration to the Defense Information Infrastructure Common Operating Environment (DII COE) is an example.

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## STATEMENT OF OBJECTIVES (SOO)

- ◆ Training Systems Requirements Document (TSRD), a variation of the Statement of Objectives (SOO) concept

⇒ **(Statement of Objectives) -- Training Systems Requirements Document (TSRD), a variation of the Statement of Objectives (SOO) concept**

NAVAIR

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***What is the name of your program?***

New Attack Submarine (NSSN) Ship Control Operator Trainer (NSCOT).

***Give a description of this idea and how it fits in the program:***

Requirements under the NSCOT acquisition were described using a variation of the SOO concept called a TSRD. The TSRD was not a pure SOO because there were exacting motion dynamics requirements set forth in the TSRD (i.e., the range of tolerance for characteristics such as pitch, roll and other measurable characteristics). Other than these kinds of requirements, offerors were provided what training objectives need to be satisfied, and were asked to propose a design that will meet the training objectives.

This philosophy was also extended to technical data. There were no DD 1423s in the solicitation. Offerors were asked to indicate what data will be necessary to meet the performance objectives.

***How is it innovative and creative?***

The traditional procedure involved the use of a specification to describe trainer requirements. Very often specifications dictated, not just what was to be accomplished in the way of training results, but also nearly every physical characteristic of the trainer. This frequently resulted in the government overly specifying to the point that there was very little latitude for offerors to propose innovative and cost effective trainers.

The TSRD concept departs from the traditional process by setting forth specific motion dynamic requirements without telling the offerors how they must meet them. This gave the offerors much more design flexibility and allowed them to be innovative and inventive with their design approaches.

***How has this new improvement been applied?***

By substituting the TSRD concept for the traditional specification-based technique.

***What were the results and lessons learned in developing this improvement?***

Award of the contract was made approximately eight months after release of the solicitation, even though offerors were allowed a longer time in which to prepare their proposals.

It resulted in improvement in the quality of proposals received and thus less time was needed to evaluate them.

Using a TSRD is a good idea when there are definite training objectives and also specific trainer movement and other performance parameters which must be met.

***What other information would help another program evaluate its applicability towards their program?***

Because the potential exists for a greater variety of proposed innovations and performance features, there is an increased burden in writing a more detailed source selection plan, to accommodate this possibility.

The use of the TSRD was only one of many reforms that were combined into the NSCOT procurement.



▼ ▼  
**SYSTEMS ENGINEERING**

◆ Standardized databases are essential to rapid information transfer and processing in integrated systems

⇒ **(Systems Engineering) -- Standardized databases are essential to rapid information transfer and processing in integrated systems**

NAVSEA

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***What is the name of your program?***

AN/BSY-2 Submarine Combat System for the Seawolf Class Submarine

***Give a description of this idea and how it fits in the program:***

Halfway through the AN/BSY-2 design process, the prime contractor realized that the database manager selected would not support the data rates required to support BSY-2 acoustic data processing. This forced a redesign effort of the database manager.

A complex integrated Combat System is glued together by its ability to transfer and utilize data quickly and effectively. Transferability from one processor (or database) to another is most easily accomplished when the data is held in a generic format, translatable to all processors (or databases). Speed in data processing is accomplished when the data is formatted in machine-ready (or database-ready) format. Generically formatted data is easily transferable but not formatted for use on a specific processor, and this is a problem for a complex system that is held together by its databases.

***How is it innovative and creative?***

Integrated system operation has become the standard in recent years, but all too often it has been merely the interconnecting of previously-designed stand-alone systems. Although hardware connectivity and software compatibility are now integral to current design philosophy, common databases and associated software/tools are not.

During initial development, special attention should be given to data tools/software that are being provided for data transfer and processing. The data tools/software should accommodate generic data and contain speedy conversion tools to format the data for use on specified processors (or databases).

***How has this new improvement been applied?***

This is a lesson learned from the AN/BSY-2 System's development that we recommend implementing in future combat system developments.

## TEAMING – DESIGN REVIEWS

### ◆ Design Reviews in an IPT Environment – An Audit Approach

⇒ (Teaming - Design Reviews) -- Design Reviews in an IPT Environment - An Audit Approach

MARCOR – DRPM AAA

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#### ***What is the name of your program?***

Advanced Amphibious Assault Vehicle (AAAV)

#### ***Give a description of this idea and how it fits in the program:***

The goal of a design review is to assess the readiness of the program to proceed to the next phase of design. As the AAAV program office is co-located with the AAAV prime contractor - General Dynamics Amphibious Systems and the team makes extensive use of IPTs in its development of the AAAV it wasn't clear a traditional design review briefing would provide value to either the contractor or the government. An audit approach was implemented. The intent of the audits was to demonstrate the readiness of the design to proceed to the next phase utilizing the tools the IPTs use day-to-day to design the vehicle.

#### ***How is it innovative and creative?***

##### a) Design Review Format

In the past design reviews have typically been multi-day briefings by the contractor for the government. The efficiency, cost effectiveness, and added value of this format, particularly in an IPT environment, was not clear. A means to make the design reviews add value to the program and the design was identified. An audit approach was developed to specifically address, with the appropriate IPTs, the program focus areas for the design review.

##### b) Program Office Planning of Design Reviews

Implementation of an "audit" format required extensive effort on the part of the program office to clearly articulate expectations for the audits. A mutual understanding and prior agreement was established between the customer (program office) and supplier (contractor) regarding expectations of design review information. A program office audit team was established to define the audit scope and implementation processes.

##### c) Design Tools

The linchpin to the success of the design review audits was the extensive utilization of the design and analysis tools to assess the design readiness. The audit content was the direct access of IPT design tools to demonstrate things such as the maturity of their subsystem and component design, interfaces to other components, and removal paths. The IPT tools for requirements traceability, geometric modeling, scheduling, interface definition, accessibility, supportability, and performance analysis were all used real-time during the audits. The AAAV Virtual Design Database, testing assets, various vehicle and component mockups, and an extensive directory of models and simulations are all critical tools for the audits, as they are for the vehicle design process.

#### ***How has this new improvement been applied?***

The AAAV design has undergone two design reviews in the past year. Both our System Design Review (SDR) and our Prototype Preliminary Design Review were conducted as IPT "audits". A program office audit team defined the scope of the audit by developing questions to explicitly address the critical issues and focus areas of the design reviews. These questions were provided to the IPTs well in advance of the design review. The audits were different for each design review. The SDR audits focused on functional aspects of system design and the system

engineering processes necessary to mature the design to preliminary design phase. The Prototype Preliminary Design Review audits focused on the ability of the preliminary vehicle design to meet the system requirements and the design and maturity of the interfaces between vehicle subsystems. Critical issues were identified and documented for IPT action.

***What were the results and lessons learned in developing this improvement?***

Lessons Learned:

- a) Design reviews are necessary, even in an IPT environment. Design reviews (audits) can be used to effectively demonstrate the design capabilities, focus on program (rather than design) priorities, and prepare for a transition of efforts into the next design phase.
- b) Design Reviews have explicit government and contractor roles - this needs to be clear in an IPT environment.
- c) Design reviews must accurately capture and schedule follow-up on items that must be revisited to assure all issues are addressed fully.
- d) Design reviews, to be effective, require extensive program office planning - particularly in an IPT environment. There must be a mutual understanding of the expectations for the audits well prior to the design review. Expectations for the audits must be known, communicated, and understood by the teams well ahead of the audit.
- e) The utilization of design tools was critical to the success of the audits. Establish and agree upon the means by which information is going to be provided.
- f) The environment for the audit must be structured to be non-threatening to effectively discuss the required information.
- g) All members of the team need to be able to provide input - including appropriate subcontractors and vendors.
- h) Design reviews cost money. Be sure the focus is on the appropriate aspects of the design for the review. The design review needs to add value to the program effort. In an IPT environment, with IPT audits, essentially work stops during the design review.

***What other information would help another program evaluate its applicability towards their program?***

Audits might be appropriate for your program if:

- Traditional design reviews have added little value in the maturation of your program.
- The expectations for information transfer during the design review can be clearly articulated.
- The tools to demonstrate the appropriate requirements/functions/design maturity are being used in the requirements/functions/design analysis process by the contractor.

▼ ▼  
**TEAMING – TESTING**

- ◆ Augmenting Commercial Processes for Joint Co-Located IPT Test Team
- ◆ Partnering with the Fleet, an inter-disciplinary, IPT approach to assure that fleet problems are identified and quickly resolved
- ◆ Team Certification Testing

⇒ **(Teaming – Testing) -- Augmenting Commercial Processes for Joint Co-Located IPT Test Team**

NAVAIR

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***What is the name of your program?***

C-9B / DC-9 Avionics Upgrade Program

***Give a description of this idea and how it fits in the program:***

a) For certain types of product acquisitions, commercial testing is required to meet legally mandated product regulations (e.g., FAA approved commercial testing for aircraft modifications is required to obtain Certifications). After these tests, the product is next delivered to other sites for government testing by one or more additional (different) DT/OT test teams before the users receive the product. This is a slow and expensive process that delays high technology insertion.

b) There is *a better way* for some acquisitions: Carefully tailored co-locating of a small IPT joint government-contractor test team at the manufacturer/modification installer facility during fabrication, design verification, and commercial testing phases. Commercial testing is witnessed by expert government personnel to satisfy Navy DT/OT data requirements, and these government personnel also participate in hands-on testing in specialty areas to reduce contractor labor costs (e.g., the contractor utilizes government pilots).

c) Use of this approach is authorized during Acquisition Plan review by the responsible senior acquisition executives, and through their approval of a T&E Memorandum of Agreement between the Program Manager(s), the MDA, and the Navy DT/OT leadership.

d) On the day of the last test event, a pre-empowered rapid decision making process is employed to focus the regulatory agency, the contractor, the government test team, and the IPT acquisition experts on the key question “Can we deliver this product to our users today?”. When the answer is “Yes” from all parties, the first product item can be accepted rapidly and taken by the test IPT user members back to their operating unit that same day.

e) Product *delivery date* is accelerated by many months. Quality and performance improvements happen. User feedback from early involvement allows the contractor designers time to fix many minor mission related preference problems. User satisfaction with the product is more likely.

f) *Cost avoidance* is achieved by reducing contractor labor costs (government pilots used, etc.) and by avoiding expensive follow-on government testing.

***How it is innovative and creative?***

Every step of every test is done because it makes sense, not just because its always been done that way

before. Government unique data requirements are met by utilizing the witnessed contractor tests and by adding special extra tests in off hours (GPS Satellite tracking, Radio HAVEQUICK tests, etc.). The innovations and creativity are carefully bounded by the senior executives approving the T&E MOA.

***How the new approach has been applied?***

Last Fall I was a member of a small ***Joint Test Team*** for Phase I C-9B Avionics Upgrades at Lockheed Martin Aircraft Company, Greenville SC. On the same day that we finished the FAA test flight, the rapid decision by all parties allowed acceptance of the first modified aircraft (and a decision that additional DT/OT testing would not be needed): It was flown to the VR-58 squadron that evening !

***What other information would help another program evaluate its applicability towards their program?***

a) The FAA Test Pilot (Mr. Chip Adam) said that the buildup test work on this project was “The best I’ve seen”. His test flight just repeated selected events already flown by our team, and he needed to be there only one day.

b) Good communications links are needed for the government team members (e-mail, Fax, pagers, etc.) at the site. The on-site team needs their own office area, and it must be located where the product hands on work is happening (e.g., the aircraft hangar).

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⇒ **(Teaming – Testing) -- Partnering with the Fleet, an inter-disciplinary, IPT approach to assure that fleet problems are identified and quickly resolved**

SSP

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***What program are you with?***

The TRIDENT Strategic Weapons System (SWS) programs managed by Director, Strategic Systems Programs (SSP).

***Give a description of this idea and how it fits in the program:***

The Fleet Ballistic Missile (FBM) program recognized from its inception that its ultimate customer is the operator/maintainer at sea. Because SSP has cradle to grave responsibility, the equipment, documentation, training and support disciplines are designed as an IPPD, where the processes involved include both acquisition and support. To ensure that fleet problems are identified and quickly resolved, several unique feedback systems have been created. The Trouble and Failure Reports (TFR) system is perhaps the most important and is representative of the others. Whenever a problem occurs, the sailor discovering the problem completes a TFR. The TFR subsequently is transmitted, analyzed, and corrective action is initiated. An accurate, reviewed response is sent to the originator. All TFRs and their corrective actions are summarized and reported back to the fleet. Other feedback mechanisms include visits to operational sites where direct information is received from fleet personnel, leverage of other systems such as Unsatisfactory Reports, end-to-end testing of the weapons system under realistic conditions, and continuing independent evaluation of system performance.

***How is it innovative and creative?***

Program office interest and responsiveness is the acquisition side of a partnership with the user that exhibits mutual trust, open and honest communications and shared responsibility for life cycle management. Government, Industry and the ultimate customer, the sailor at sea, share the responsibility for assuring that program needs are supported, with the result that all participants are in a win-win situation.

***How has this new improvement been applied?***

Cradle to grave program office responsibility simplifies the continuous involvement of the development contractors in a true partnership with the fleet in continuing operational support. The user is dependent on continuing program office and contractor responsiveness. Similarly, because subsystem contract incentives are determined by the performance of the subsystem as measured in the fleet, the contractors are interested in motivating the users to continue their excellent care and maintenance of the system. Thus, responsive support to the fleet is rewarded financially, and at the same time, because fleet performance as documented in TFR and Corrective Action Reports is visible throughout the SSBN community, an inherent inhibition to any unreasonable fleet demands is present.

***What were the results and lessons learned in developing this improvement?***

For over four (4) decades, the unprecedented success of this true partnership between SSP, FBM contractors and the fleet offers visible evidence that the U.S. Navy and their contractors can work together to sustain and achieve objectives. These activities create benefits to all participants. Tangible results include the unprecedented cost, schedule and performance record of the FBM program for over 43 years.

***What other information would help another program evaluate its applicability towards their program?***

It is necessary to carefully identify and evaluate situations where a potential partnership can have substantial payoff. Partnering can enable DoD and Industry to reduce system support costs while substantially improving performance. With proper feedback systems in place, those ashore can insure that problems are detected and corrected. Moreover, the partnership motivates all involved, the contractors, the program office, and the users to achieve program objectives, as all recognize their mutual dependence.

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**⇒ (Teaming – Testing) -- Team Certification Testing**

NAVSEA

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***What is the name of your program?***

CCS MK2 Block 1C

***Give a description of this idea and how it fits in the program:***

The object is to have the contractor and the government testing agency jointly develop a testing approach that meets both Government certification requirements and meets contractor sell off requirements.

***How is it innovative and creative?***

Currently, The Combat Control branch has a two stroke testing process. The contractor performs a sell off SDCT and then our TDA performs a system certification SDCT. We are working together to develop a one stroke test approach. The test IPT team, which is made up of contractor personnel and TDA personnel, is defining the test requirements and philosophies required to meet both contractor sell-off and Government certification. It is expected that this approach will reduce testing time by 2 months, save approximately \$300K, and provide a more realistic approach to certification testing.

***How has this new improvement been applied?***

We are developing a joint test plan for a combined certification test approach for the CCS MK2 Block 1C program to reduce cost and schedule for testing.

***What were the results and lessons learned in developing this improvement?***

In the past, we have tested systems using a two-stroke approach. Often times, we find that additional PTRs are discovered during the system certification that was not discovered at the sell-off. The intent of this change is to find all of the PTRs in one step, reduce duplicative testing, and reduce cost and schedule required in the certification process.

***What other information would help another program evaluate its applicability towards their program?***

They would have to look at their current test approach and determine if they have a two-stroke approach that could be combined.

▼ ▼  
**TEST AND EVALUATION**

- ◆ Consolidated Testing for Non Propulsion Electronics
- ◆ System hardware performance must be verified prior to commencing software testing

⇒ **(Test and Evaluation) -- Consolidated Testing for Non Propulsion Electronics**

NAVSEA

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***What is the name of your program?***

Team SEAWOLF

***Give a description of this idea and how it fits in the program:***

The Ship Acquisition Program Manager is required to run test programs which demonstrate the ship readiness for sea. The test program consists of a subsystem certification of the performance of the combat system (Combat System Installation Certification (CSIC)); Anti submarine warfare capability (WSAT); ability to launch weapons (LT); acoustic signature (ACTRL); target strength of the hull (TS); ship performance envelope (PERFORMANCE); and Technical Evaluation and Operational Evaluation (TECHEVAL/OPEVAL). Most of these test efforts repeat tests on the same equipment but are customarily performed by different individuals and different organizations. By performing tests one time with all users participating, considerable savings in both cost and schedule can be achieved.

***How is it innovative and creative?***

This effort brings various organizations together, working toward a common goal.

***How has this new improvement been applied?***

In the testing of the SSN 21 (USS SEAWOLF), we performed one test that satisfied multiple test programs. For instance, the Ready-For-Sea testing was combined with dockside CSIC.

***What were the results and lessons learned in developing this improvement?***

The overall quality of the test program improved due to open communication by the test community. There are still opportunities for combining tests during subsequent trials.

***What other information would help another program evaluate its applicability towards their program?***

Simply ask yourself the following questions:

- Do I have the time to sequentially run repetitive test programs?
- Do I have the money to pay for repetitive test programs?



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⇒ **(Test and Evaluation) -- System hardware performance must be verified prior to commencing software testing**

NAVSEA

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***What is the name of your program?***

AN/BSY-2 Submarine Combat System for the Seawolf Class Submarine

***Give a description of this idea and how it fits in the program:***

System hardware should be operational when software testing commences. However, this has not been the case in traditional combat system development. Rather, hardware and software are usually developed together, and the performance monitoring/fault localization (PM/FL) software is the last piece of software developed. But today, with the use of COTS technology, the concept of testing hardware before testing the software is a possibility. The system hardware can be pieced together and the software interfaces that bind the processors together can be verified with PM/FL before the software is loaded into the system and run.

Many hours of wasted time in the lab were spent trouble-shooting BSY-2 software problems that turned out to be hardware problems. Before running any software tests, the system hardware should be checked and repaired, if necessary. This will require a change in the paradigm.

***How is it innovative and creative?***

In concept, systematic testing is, and has long been, fundamental to a sound systems engineering approach. In practice many factors, including cost and schedule constraints, force a parallel rather than serial testing approach despite its known deficiencies.

This idea's innovation lies in making such a testing process a basic program requirement rather than a nice-to-have; i.e., by developing the hardware, system software, database software and the PM/FL software before trying to test the combat system. And prior to testing, by verifying the system hardware performance with PM/FL software.

***How has this new improvement been applied?***

This is a lesson learned from the AN/BSY-2 Combat System's development that should be applied to future combat system developments.

▼ ▼  
**TOTAL OWNERSHIP COST**

◆ Total Ownership Cost/Partnering/Target Pricing

⇒ (Total Ownership Cost) -- Total Ownership Cost/Partnering/Target Pricing

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***What is the name of your program?***

Evolved SEASPARROW Missile (ESSM)

***Give a description of this idea and how it fits in the program:***

On ESSM tying production and contractor support together in a firm fixed price over a multiyear procurement. Ideally NSPO could reach agreement with the contractor on an Average Unit Production Cost (AUPC) including support that missiles and their availability could be procured for over the life of the program or at a minimum large segments. This would incentivize the contractor through use of performance spec to design and produce missiles in such a way as to minimize failures so the support necessary to keep the missiles operational would be minimized. Conversely, if the contractor did not do a good job in production and as a result failures were common, the contractor would still be on the hook to support some predetermined availability at no additional expense to the Government. If we are able to tie production and support together in a FFP vehicle that spans multiple years or the entire program with the AUPC agreed to this would lock in missile prices and support at or below some acceptable threshold (APB target?). Numerous other missile programs could be used as a baseline to determine an expected AUPC over the life of the program. SEA 017 or the Navy Center for Cost Analysis could provide outstanding support in estimating future costs.

***How is it innovative and creative?***

This approach would incentivize the contractor(s) to engineer reliability into the missile in order to decrease the follow-on support costs. By tying the two together in one contract for one firm fixed price the program would limit financial liability and ensure missile availability to a predetermined level.

***How has this new improvement been applied?***

N/A. This recommendation is currently in the planning stages and is dependent upon a number of factors including multi-year procurement authorization, the ability/willingness of the contractor to agree to a packaged number that is also acceptable to the government, the assumption of contractor run Intermediate level Maintenance facilities in order to ensure availability, and the willingness of the Participating Governments to implement the approach. This recommendation would not be ready for implementation until FY 01/02 at the earliest.

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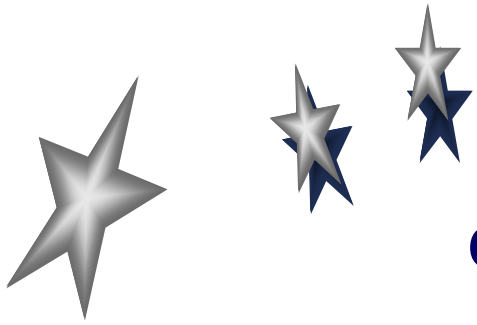


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