

# Partnerships

## Bring Joint Solutions for Common Problems

### Joint Group on Pollution Prevention (JG-PP) Resolves Shared Environmental Quality Issues

**T**he Joint Group on Pollution Prevention (JG-PP), through facilitation and establishment of partnerships among the Services, Headquarters National Aeronautics and Space Administration (NASA), and industry, resolves common environmental issues by employing joint solutions, that result in decreased duplication of effort, leveraging of resources, and cost

savings/avoidance to partners and stakeholders.

In response to industry requests, the Joint Logistic Commanders (JLC) chartered JG-PP to establish and guide a process for jointly demonstrating, and validating environmental technologies to mitigate cost and risk. JG-PP's mission is to manage and facilitate program focus on joint service/agency technical and business activities effecting pollution preven-

tion (P2) issues identified during weapon/space system acquisition and sustainment processes.



JG-PP provides guidance and leadership on pollution prevention issues and balances cross service acquisition/sustainment issues and concerns. JG-PP members consist of Flag Officers/Directors from each service, including the Army, Marine Corps, Navy, Air Force, Defense Logistics Agency (DLA), and National Aeronautics and Space Administration (NASA).

#### What is JG-PP?

The JG-PP program provides a coordinated, controlled, and structured approach to supporting the development of partnerships among the services, NASA, and industry, as well as various international allies for the identification and integration of P2 solutions, practices, and procedures.

The JG-PP program focuses on issues relating to the environmental quality of processes at Department of Defense (DoD)/NASA organic and contractor installations where weapon/space systems are designed, manufactured, remanufactured, or maintained.

#### How JG-PP Works

The JG-PP program uses the existing environmental requirements/needs of each service, NASA and prime



Promising non-chromate pretreatment alternatives are being demonstrated in real exposure scenarios.

DoD/NASA contractors to identify potential joint initiatives for consideration. Through its execution arm, the JG-PP Working Group, the partnerships are facilitated among DoD, NASA, industry, and other government agencies to identify and integrate alternative P2 technologies, solutions, practices and procedures into defense acquisition and sustainment processes.

By partnering to address common problems, the participants realize

added benefits from the development and migration of new crosscutting technologies to reduce or eliminate hazardous material usage and releases. Ultimately, the end results include reductions in total ownership costs for weapon/space systems and a strengthening of each participant's compliance with legislative policies.

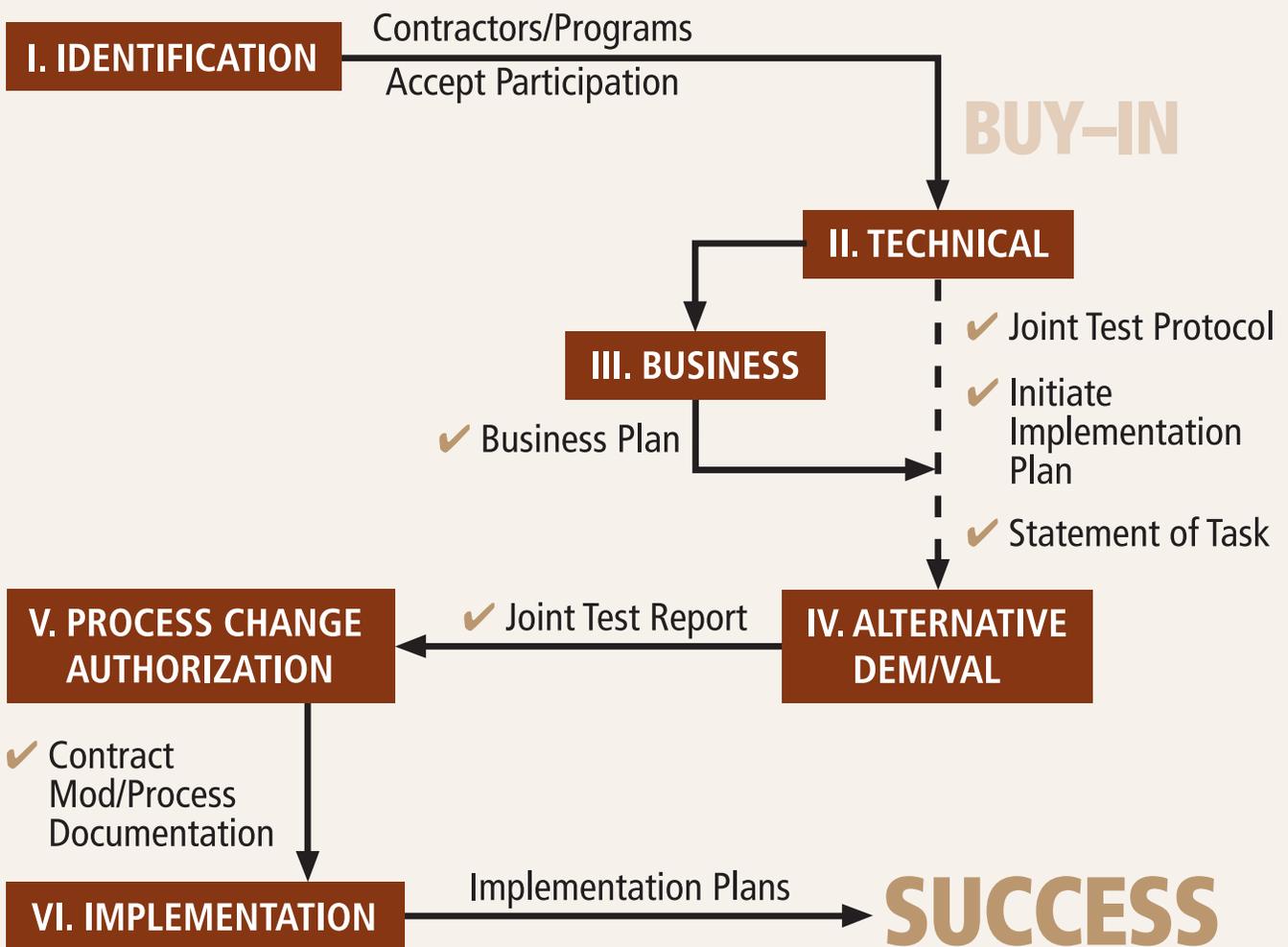
### JG-PP Methodology

The JG-PP has a proven multi-phase methodology (see below) to effectively

match common environmental issues within services/industries with joint solutions. Successful execution of this methodology is accomplished through deliberate efforts designed to integrate the myriad of tasks related to project coordination and execution. JG-PP undertakes these integration activities throughout the life of a project, from initial identification/analysis through successful implementation.

The JG-PP successes are based on the establishment of partnerships between

## JG-PP METHODOLOGY



# The end results include reductions in total ownership costs for weapon/space systems and a strengthening of each participant's compliance with legislative policies.

government and industry, resulting in risk mitigation through the validation of promising technologies against the acceptance criteria established in the joint test protocol (JTP) and agreed to by all stakeholders. Cost savings/avoidance are realized through stakeholder support which, in turn, reduces costs that otherwise might occur if individual services/weapon systems were conducting separate testing programs. Furthermore, technical confidence is achieved through the involvement of qualified technical individuals and process owners, and through the use of standardized JG-PP technical and business products such as potential alternative reports (PAR), joint test protocols (JTP), joint test reports (JTR), and cost benefit and analyses (CBA).

The JG-PP Working Group is proactive in obtaining initial acceptance from stakeholders. This step is essential for successful migration of joint solutions.

## JG-PP Projects

JG-PP is currently undergoing the project selection process phase of its



Field testing underway of HVOF alternatives on various aircraft components.

U.S. Navy photo by Photographer's Mate Airman Philip A. McDaniel

methodology to identify new starts for FY05. In previous years, the Naval Air Systems Command (NAVAIR) has been involved in the following JG-PP projects:

### *Low/No Volatile Organic Compound (VOC) Identification Markings*

The objective of this project was to identify and qualify low-VOC inks and labels used for identification marking that would reduce or eliminate the use of VOCs (specifically methyl ethyl ketone and toluene) and reduce hazardous waste (rags, ink and solvents), which will reduce waste management costs.

Based on stakeholder requirements documented in the joint test protocol (JTP), two inks and three label systems were qualified for use. Naval Air Depot Jacksonville, FL had been searching for a replacement high VOC silk screening and was selected as one of the demonstration/validation sites. One demon-

stration of the Thermal Transfer System consisted of printing 5,000 small inspection decals in about ten minutes. Zero flaws were found. It is estimated that the use of clear and white labels using black ink could replace 25 percent of their current silk screening workload, and metallized labels could replace another 25 percent of silk screening demand. This technology is also being implemented at the Naval Air Warfare Center In-Service Engineering Laboratory at Point Mugu, CA. Operator training is provided as part of the implementation process.

### *Nonchromate Primers for Aircraft Exteriors*

The objective of this project was to identify and qualify environmentally acceptable alternatives for chromate-containing primers used on military aircraft exterior mold line skins that are reworked at military depots. This will reduce chromium emissions, reduce hazardous waste and reduce waste management costs.

Non-chromate primer being applied to exterior of the aircraft.



Two alternatives have been qualified: Akzo Nobel 10PW22-2/ECW-119 and PRC DeSoto EWAE118. During a technical meeting in January 2002, the Air Force determined that additional field-testing was required before they could initiate implementation planning. However, NAVAIR Materials Engineering Division implementation plans were initiated (via letter AIR-4.3.4/7.4629 dated 18 April 2002) to authorize limited use of the qualified products. The letter states "authorized use of nonchromated primers qualified to Military Specification MIL-PRF-85582, Class N, for depot applications involving scuff sand and overpaint of the existing paint system for aircraft exterior surfaces. This limited authorization will allow for a controlled transition from conventional chromated primers where feasible..." Each of the three NAVAIR Depots developed their own site implementation plan and execution of these plans is underway.

### *Chromium Electroplating Alternatives*

JG-PP has established partnerships with the Environmental Security Technology Certification Program (ESTCP) and Hard Chrome Alternatives Team (HCAT) for the demonstration/validation of High Velocity Oxygen Fuel (HVOF) thermal spray as an alternative for chromium electroplating for use on various components on landing gear, propeller hubs, actuators, and helicopter dynamic components. NAVAIR

is evaluating spalling issues relating to use of HVOF on landing gear components that have high stress loads. HVOF on propeller hubs is nearing completion of its final test phase. A test plan has been developed for testing HVOF on actuator rods and seals. Initial testing has shown HVOF is as good as or better than chromium electroplating and more wear resistant. Efforts addressing HVOF applications on helicopter dynamic components are underway and a joint test protocol (JTP) is being developed.

Validating cadmium alternatives for high-strength structural and fastener applications.



### *Joint Cadmium Alternatives Team (JCAT)*

The JCAT objective is to identify and validate alternatives to cadmium for DoD weapon systems and NASA applications. This project will integrate and leverage other cadmium replacement efforts. A total of five joint test protocols are being developed under this project, including a non-aerospace application and a high strength steel structural components application. Testing is expected to be completed by the end of 2004. The high strength steel fastener JTP is under develop-

ment and a draft is expected to be complete by spring 2004. The electrical connector and spring JTPs are planned for the future.

### *Nonchromate Aluminum Pretreatments (NCAP)*

The NCAP objective is to eliminate the use of hexavalent chromium for aluminum alloy finishing. Phase I testing is complete and a report is available on the JG-PP website. Two alternatives, Henkel's Alodine 5200/5700 and NAVAIR's Trivalent Chromium Pretreatment (TCP) were the best performers. Field-testing is underway on the Marine Advanced Armored Amphibious Vehicle (AAAV), the Army Bradley, and the Naval Sea Systems Command's Landing Craft, Air Cushion (LCAC) or Hovercraft.

Other field tests are planned for H-60 helicopters in 2004-2005 in coordination with the Army's Aviation and Missile Command (AMCOM), NAVAIR, Marines, and Sikorsky Helicopter.

Visit [www.jgpp.com](http://www.jgpp.com) for additional information and a complete listing of all JG-PP projects. ⚓

## CONTACT

**Winston deMonsabert**

Chief of Naval Operations

Environmental Readiness Division

703-602-5334

DSN: 332-5334

[Winston.deMonsabert@navy.mil](mailto:Winston.deMonsabert@navy.mil)