United States Coast Guard Integrated Deepwater System Program

Executive Summary:

The Integrated Deepwater System (IDS) is an acquisition program designed to recapitalize the U.S. Coast Guard's aging Deepwater assets by modernizing or replacing them with a state-of-the-market, interoperable system of cutters and aircraft, including their supporting command, control, computer, communications, intelligence, surveillance and reconnaissance (C4ISR) and logistics infrastructure. The Deepwater Program provides unique opportunities to support the U.S. Coast Guard's international engagement activities by facilitating international contacts with foreign countries that share similar maritime missions and requirements. This system will provide the U.S. Coast Guard with the necessary capabilities to continue performing its fourteen federally mandated missions well into the 21st century. Deepwater will also enhance the U.S. Coast Guard's ability to conduct joint operations with U.S. Navy and U.S. allies.

In the past, the U.S. Coast Guard replaced its ships and aircraft as they became obsolete or insupportable, normally on a platform class by platform class basis. The Deepwater Program broke from that paradigm. For Deepwater, industry was provided with specifications for the capabilities the U.S. Coast Guard needs to perform its Deepwater missions rather than specifications for specific assets. This innovative approach empowers industry to leverage state-of-the-market technologies and processes to achieve Deepwater's overarching goal of maximizing operational effectiveness while minimizing total ownership costs.

On June 25, 2002, the U.S. Coast Guard awarded the Integrated Deepwater System contract to Integrated Coast Guard Systems (ICGS), a joint venture of equal partnership between Lockheed Martin and Northrop Grumman. In executing the contract, ICGS will modernize or replace the U.S. Coast Guard's major cutters and aircraft and their supporting communications, sensors, and logistics systems, transforming the current fleet of aging assets into an integrated, interoperable network-centric system. In developing their proposal, ICGS and the other competitors were given specifications for the capabilities the U.S. Coast Guard needs to perform its Deepwater missions instead of specifications for the assets themselves. As stated earlier, this innovative, performance-based approach empowered industry to leverage state-of-the-market technologies to develop an integrated system that achieves Deepwater's overarching goal of maximizing operational effectiveness while minimizing total ownership costs.

Integrated Deepwater System Goals & Objectives:

The Integrated Deepwater System is the U.S. Coast Guard's strategy to meet its mission needs through an integrated system of surface, air, command, control, communications, computers, intelligence, surveillance, reconnaissance (C4ISR) and logistics assets that will maximize operational effectiveness while minimizing total ownership costs. This "System of Systems", as it is commonly referred to, will support missions and operations 50 nautical miles or more out to sea, often involving deployments of several months in the deepwater regions around the world. The U.S. Coast Guard performs fourteen statutorily mandated missions in four main categories. These fourteen categories are:

- Maritime Law Enforcement

1. Drug Interdiction
2. Alien Migrant Interdiction
3. Fisheries Enforcement
4. General Law Enforcement

- Maritime Safety

5. Search and Rescue
6. International Ice Patrol

- National Defense

7. General Defense Operations
8. Maritime Interception Operations
9. Deployed Port Operations, Security and Defense
10. Environmental Defense Operations
11. Peacetime Military Engagement

- Marine Environmental Protection

12. Marine Pollution Enforcement and Response
13. Lighting Zone Enforcement
14. Foreign Vessel Inspection

Driving the Integrated Deepwater System requirement is the near-term "block obsolescence" of the vast majority of U.S. Coast Guard capital assets. In other words, many U.S. Coast Guard assets are quickly reaching expiration of planned service life. U.S. Coast Guard deepwater cutters, for instance, are the 37th oldest of 39 similar fleets worldwide. Those Deepwater surface and air assets that have not already reached their end of planned service life are expected to reach this terminus within the next five years. In short, the U.S Coast Guard's deepwater cutters and aircraft are aging and technologically obsolete. These platforms have excessive operating and maintenance costs and lack essential capabilities in speed, sensors, communications and interoperability that limit mission effectiveness and efficiency. To address this problem, the U.S. Coast Guard developed the Integrated Deepwater System Program.

Integrated Deepwater System Acquisition Strategy:

With regard to the U.S. Coast Guard's acquisition strategy, it is important that all parties share the understanding that the U.S. Coast Guard has not crafted the IDS acquisition simply as a capital asset replacement program. The U.S. Coast Guard has taken the approach simply of describing its mission needs and seeking from private industry an integrated solution that will, essentially, re-engineer its mission processes over a period of up to thirty years. As stated initially in the Integrated Deepwater System Mission Need Statement:

> *The goal of this effort is not to replace ships, aircraft and sensors with more ships, aircraft and sensors, but to provide the Coast Guard with the functional capabilities required to achieve mission success safely. Although some traditional assets will undoubtedly result from the Concept Exploration, the system mix could also include some very nontraditional tools. It is critical that the Deepwater system be viewed in its totality in order to develop a unified, strategic overview, ensure asset comparability and interoperability, and provide the most affordable solution for the taxpayer.*

In focusing on the mission results rather than the method or the assets utilized, the U.S. Coast Guard expanded the range of potential solutions and opened the door to new methods of performing its missions.

A useful example is tracking icebergs, now performed by manned airplanes that fly over the North Atlantic every two days to visually locate and report icebergs to mariners navigating nearby waters.

In a typical capital asset acquisition, the functional line office would justify a new airplane. The line office could even take the approach of saying that the airplane must have a range of X miles and could call the acquisition performance-based. However, the U.S. Coast Guard has taken the description of its need one critical step further … by saying the requirement is to track icebergs. If this objective can be accomplished in a more cost effective manner, i.e. satellites or imaging technology, competing contractors can propose this, or other solutions. In other words, the requirement is to locate and track icebergs. It is not acquiring a better, faster, more capable manned aircraft to locate and track icebergs.

Ultimately, this approach has allowed for a wider spectrum of options. That is, the U.S. Coast Guard has not limited the potential solution set by the way it has described the requirement, and the competing contractors can build an innovative solution using the most effective types and combinations of available resources. In its most basic terms, the U.S. Coast Guard is seeking to competitively acquire a business process re-engineering effort to improve operational effectiveness and minimize total ownership cost that could span a period of approximately 30 years.

Integrated Deepwater System – The Right Choice:

Clearly, the IDS program and its acquisition strategy provide several advantages over other acquisition methods. First, the Deepwater program utilizes an integrated, flexible, and highly adaptable mission-based performance acquisition approach, i.e. "System of Systems" approach. Here, performance specifications for assets are based on fundamental capabilities needed to optimize mission performance while minimizing total ownership costs. This system allows for greater management and funding flexibility while acting as an overall force multiplier by using a seamless coordinated performance of missions by multiple assets. Second, the essential component of interoperability is built into the program. This strategic benefit means greater inoperability within the U.S. Department of Defense (DOD) and between Coalition Partners, allowing for optimum selection and use of assets. Finally, and most importantly as it pertains to the Deepwater International Office of the IDS, a variety of opportunities exist for international partnerships. The IDS program is the proper vehicle to address and realize these potential partnerships.

Integrated Coast Guard Systems – A Coast Guard for the 21st Century:

As stated earlier, the IDS contract was awarded to ICGS on June 25, 2002, a joint venture established by Lockheed Martin and Northrop Grumman. The Deepwater contract has the potential to extend up to 30 years, with an approximate value of $17 billion. ICGS will manage over 100 companies from 32 states, as well as four international teammates, to implement its comprehensive plan for the U.S. Coast Guard. The ICGS Open Business Model approach maximizes competition and assures best value to the U.S. Coast Guard and the nation's taxpayers throughout the life of the program.

ICGS has structured a program that will greatly enhance the U.S. Coast Guard's core system capability within the first five years of the contract, and ensure a low-risk transition to the full vision of the Deepwater system. In the first five years, ICGS will:

- Provide a network centric capability of robust C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance) resources on new and existing air, land and sea assets.

- Upgrade older assets until new ships, aircraft and systems are fielded.

- Provide more capable systems with greater speed, longer endurance, and better onboard working spaces, all with a common integrated support infrastructure that will significantly lower operating costs.

- Design, build and deploy the first of a new class of cutters for the Coast Guard - the National Security Cutter (NSC).

ICGS' long-range Deepwater solution will transform the force into mission-designed, fully integrated assets with complete life-cycle support.

Jointly owned by Northrop Grumman and Lockheed Martin, ICGS has the full commitment and necessary resources from both corporations to ensure meeting or exceeding the U.S. Coast Guard's expectations. Headquartered in Rosslyn, VA, the ICGS core leadership team will manage a fully integrated team operating within common processes and performance management systems. Full participation by the U.S. Coast Guard is built into every level and function within the ICGS team.

Lockheed Martin will provide an advanced, fully integrated command and control system and information network across all the new and upgraded Deepwater cutters, aircraft and associated land-based facilities. Lockheed Martin is also responsible for providing fully integrated manned and unmanned aircraft and the logistics system across the entire the Deepwater project. As the leading technology solutions provider and integrator to the U.S. government, Lockheed Martin focuses on the defense, information technology and homeland security requirements of the military services and civil agencies. The Corporation's advanced technology solutions draw on world-class capabilities in systems engineering and integration, complex project management, software development and information technology. These align with emerging homeland security requirements for enhanced command and control, threat information alert and exchange, border control, critical infrastructure protection and emergency management and incident response. Lockheed Martin Corporation is headquartered in Bethesda, MD.

The cutter design and production work will be performed at Northrop Grumman's Ship Systems sector, headquartered in Pascagoula, MS. Ship Systems includes primary operations in Pascagoula and Gulfport, MS; and New Orleans and Tallulah, LA, and is one of the nation's leading full-service systems companies for the design, engineering, construction and life cycle support of major surface ships for the U.S. Navy, U.S. Coast Guard and international navies, and for commercial vessels of all types.

Northrop Grumman Corporation is an $18 billion global defense company headquartered in Los Angeles, CA. Northrop Grumman provides technologically advanced, innovative products, services and solutions in defense and commercial electronics, systems integration, information technology and nuclear and non-nuclear shipbuilding and systems. With nearly 100,000 employees and operations in 44 states and 25 countries, Northrop Grumman serves U.S. and international military, government and commercial customers.

Integrated Coast Guard Systems – The First Five Years:

The first five years will see significant progress for the Deepwater Program, as the winning contractor, Integrated Coast Guard Systems, will upgrade several existing asset classes and lay the foundation for the future system. Think of Deepwater as not just "new ships and aircraft" but an integrated approach to upgrading existing assets while transitioning to newer, more capable platforms with improved C4ISR (Command, Control, Communications and Computers, Intelligence, Surveillance, Reconnaissance) and a

new way of addressing logistics. The first five years will see a combination of retrofitting equipment on several classes of cutters/aircraft and finalization of detailed designs on the near-term new cutters and aircraft to be built. The IDS will also retire aging assets that are costly to operate and maintain. This process will increase mission capability, increase operational hours, and reduce operating expenses.

In the first five years, the Deepwater proposal is slated to deliver the following:

- Upgrades to 42 existing major cutters, all C-130s, HH-60Js, HH-65s, and 17 command facilities ashore.

- Beginning in 2003, 15 year Service Life Extensions to 25 110' patrol boats (modified to 123' with stern ramps to enhance small boat launch and recovery operations). This will include hull repairs.

- Beginning in 2005, the delivery of 12 Maritime Patrol Aircraft (MPA).

- Beginning in 2006, the delivery of 8 Vertical Take Off and Landing Unmanned Aerial Vehicles (VUAVs).
- Beginning in 2006, the delivery of the first National Security Cutter (NSC).

- Improved performance due to increased surface/air OPTEMPO.

Integrated Deepwater System – Promoting Deepwater Opportunities

The Deepwater International Office, under the leadership of Rear Admiral Patrick M. Stillman who is the Program Executive Officer for the entire Deepwater program, is the critical link between the overall U.S. Coast Guard acquisition effort and the international community. The Deepwater International staff is engaged in a continuing informational effort to educate prospective foreign partners and the security assistance community as to what Deepwater entails and how they might benefit from some form of participation in the program. The Deepwater staff also studies potential foreign markets for Deepwater systems. To this end, the staff has worked closely with defense attaches and security assistance officers, briefed numerous foreign military officials on the possibilities that the program offers and has taken the Deepwater message to various international expositions and conference such Euronaval and Exponaval.

In addition to promoting IDS through foreign military sales (FMS), the Deepwater International Office has also focused on building partnerships throughout the security assistance community. For instance, the Deepwater Office has been working with the Director of Security assistance and Arms Transfers within the Department of State. In the Department of Defense, Deepwater International has opened communications channels with the Defense Security Cooperation Agency, participated in the Sip and Shipboard Systems Planning Forum organized by the Navy International Programs Office (IPO), and presented Deepwater educational briefings at several security assistance officer conferences. And finally, with regard to the Commerce Department, the Deepwater Office has signed an agreement with the Bureau of Export Affairs, under which that bureau will help promote sales of Deepwater equipment to navies around the world.

To be sure, the Deepwater Program will have a profound and exciting effect on engagement opportunities for years to come. The IDS has already forged many important partnerships across the international community through the work of its Deepwater Office, educating prospective foreign customers on the capabilities, platforms and the systems that the program will generate. The end result will be significant

cost savings for the U.S. government, enhanced goodwill among U.S. allies and friendly nations receiving Deepwater assts and enhanced interoperability between U.S. and allied forces worldwide.