Command Post Platform
Aviation Week 2012 Program Excellence Award Nomination

PRODUCTION TO END PRODUCT
The Aviation Week Program Excellence Award initiative was developed in 2004 in recognition of the need to develop future program leaders who in addition to facing challenges similar to those of the past, will also have to deal with increasing technical, organizational and business complexities. Program leaders must balance their program opportunities, together with better supply chain integration, and higher efficiencies. They will have the ability to apply Lessons Learned and Best Practices, as well as create transformation and Next Practices. The goal of this initiative is to recognize and promote program excellence in terms of performance, leadership capability, and outstanding lessons that can and will be shared broadly within the aerospace and defense community. By taking part in the submission process, nominees agree to be part of this program to share information.

Framework
The criteria for this award are based on the best elements of program/project leadership excellence programs developed by the Strategic Project Leadership Program of the Technological Leadership Institute, the NSIT Malcolm Baldrige National Quality Awards, and the NASA/USRA Center for Program/Project Management Research.

The award will examine four critical areas according to the following framework:

![Pyramid Diagram]

The evaluation team will determine finalists and winners on the basis of scores in these four categories. The winner(s) will be featured in Aviation Week & Space Technology and at www.AviationWeek.com, as well as honored at the annual Aviation Week Aerospace & Defense Programs Conference to be held November 5-7, 2012 in Phoenix, Arizona.

Entries will be divided into categories that include: 1) Sub-system R&D/SDD; 2) Sub-system Production/Sustainment; 3) System R&D/SDD; and 4) System Production/Sustainment. Categories may be added by judges if warranted (for instance, separation of production and sustainment) and based on current aerospace and defense environment. Finalists will be chosen in each category, based on meeting
a threshold score that will be determined by the evaluation team; the winner(s) will be chosen on the basis of both Phase I and Phase II elements.

The Evaluation Team reserves the right to choose no winners and to name an Overall Winner, if the nominations so warrant, based on the combination of scoring against the criteria, best practices, and game-changing leadership.

2012 Evaluation Team
The evaluation team for the 2012 AVIATION WEEK Program Excellence Awards includes:
Jack Gleason, VP Business Systems, Honeywell Aerospace
Michael Bruno, Deputy Managing Editor-Military, Aviation Week
Nanette Bouchard, VP Program Management, Boeing Defense, Space & Security
Jake Gatch, VP Business Management Systems, BAE Systems
Ed Hoffman, Director of the Academy for Program/Project Engineering Leadership,
Jane Krueger, Director Navigation Programs, Rockwell Collins
Charles “Chuck” Mills, VP Program Management, Lockheed Martin Corp.
Lewis Peach, NASA
Aaron Shenhar, Professor of Supply Chain and Project Management, Rutgers Business School
Jesse Stewart, Professor of Program Management, Defense Acquisition University
Nick Yorio, Corporate Director Program Management, Northrop Grumman Corp.

Intellectual Property
Note: Individuals outside your company review award submissions. All information submitted will deal with the program’s management, leadership, and processes, and not any business-related or otherwise classified topic. Do not include any materials marked Proprietary. All documents will be copied and distributed via the Internet to the aforementioned Evaluation Team and will be considered as public knowledge.

By submitting an entry to the Aviation Week Program Excellence Awards program, you are indicating agreement to participate in outreach efforts to share Lessons Learned/Best Practices in an effort to lift the bar on program leadership across the industry. Entries may be also used for comparative research among programs to draw conclusions and lessons learned across the industry.

Format of Submission
The Program Excellence Awards process involves two phases of evaluation.
Phase 1 – Nominees submit, in narrative format, their perspective on why the program excels and identifies the teachable lessons in program execution within the past 36 months (beginning January 2009). The focus in this narrative should be how the program has successfully addressed challenging issues or met seemingly difficult requirements. Limit this narrative to four pages, 12 point Times Roman typeface with 1” margins. The current areas of focus for performance improvement include value chain optimization, transition of programs from one phase to another, achieving affordability goals, and system integration.

• Include with the narrative a one-page biography of the program leader, including what sets this individual apart as a leader.
• Identify by name a representative of the program customer, include phone and email information. Customers will be asked for go/no go decision regarding consideration of this program for the Aviation Week Program Excellence Award.
• Narratives are due April 1, 2012 to carole_hedden@aviationweek.com.

You must use the tabular format provided to submit your nomination form. You should use 12 pt. Times Roman font to fill in the tables. Submit your document as a PDF file.

Submission and Questions
Questions and submissions should be directed to
Carole Rickard Hedden
Project Leader, Aviation Week Program Excellence Initiative
chedden1@cox.net / carole_hedden@aviationweek.com
Phase I Submission
Name of Program: Command Post Platforms

Name of Program Leader: Lisa Tapscott
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Name of Customer Representative: Matt Spielman
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Bio for program leader:

Lisa Ann Tapscott is the Northrop Grumman Program Manager for the Command Post Platform (CPP) contract. In this role, Ms. Tapscott leads the organization responsible for the design, integration, testing, training and support of the CPP program and manages and executes all technical, schedule and cost performance activities. She develops customer requested new scope proposals and engineering change proposals with a focus on affordability and functional integrity for more than 2,000 fielded products. These products are fulfilling critical warfighting needs in Iraq and Afghanistan.

From 1990 through 2004, Ms. Tapscott served as the deputy program manager and/or lead systems engineer for the Joint Service Light Nuclear, Biological, and Chemical Reconnaissance System (JSLNBCRS), Force XXI Battle Command Brigade and Below (FBCB2) and Armored Systems Modernization (ASM) programs. For these programs, Ms. Tapscott was responsible for the management and execution of requirements analysis, definition, and allocation; interface definition; technology assessments; human factors engineering; safety assessments; reliability and maintainability predictions; and risk management. In addition, she conducted threat/mission analyses, susceptibility and vulnerability analysis, and survivability model evaluations.

Ms. Tapscott joined TRW Inc. (which was acquired by Northrop Grumman in December 1992) in October 1990 following eight years of service with the Federal government. Beginning her government service as an administrative assistant, she worked to become a logistics management specialist and progressed to an engineering technician position.

Ms. Tapscott’s awards include the TRW Chairman’s Award for Innovation (1996); Northrop Grumman President’s Award for Innovation, Customer Satisfaction and Operational Excellence (2006); and the Northrop Grumman President’s Excellence Award (2010).

Ms. Tapscott graduated from the University of Alabama in Huntsville, earning a bachelor of science in electrical engineering.
**Program Overview** The Command Post Platform (CPP) program is the U.S. Army’s program of record for command and control (C2) platform production. Whether engaged in war, executing a peacekeeping mission or providing humanitarian relief, effective situational awareness is essential to effectively command and control. CPP hosts connectivity and multiple battle command tools to enable the commander to visualize the battle space and make the right decision based on real-time data. The CPP program produces a tailorble hardware and software Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) equipment package that integrates government furnished equipment and commercial off-the-shelf items into a modular design used by ground commanders to form command posts (CPs) at brigade and above echelons of command. The center of the command post is the Rigid Wall Shelter (RWS). We augment the RWS capability with our designed and fielded transit case systems to provide audio and video capabilities. These video/audio systems are referred to as the Command Center System (CCS), the Command Post Communication System (CPCS) and Large Screen Displays (LSDs).

**History** Northrop Grumman began building tactical operations centers (TOCs) in the early 1990s. Previous TOC development efforts involved building unique shelters for each mission and role, increasing costs for unique redesign, test, maintenance, production, training, and field support. By developing a common CP shelter infrastructure that can be used for varying roles and missions, overall life-cycle program cost is significantly reduced and agility responding to critical operational warfighter current and future needs is increased.

**The Solution** The TOC concept migrated to a mobile, configurable CP in 2004 with the award of the CPP program. Northrop Grumman designed a common physical infrastructure (i.e. shelter, power generation, environmental conditioning, and harnesses) to form the building block for CPs regardless of the operational mission. Actual system components, such as computers, communication and applications, are then customized and incorporated into the physical infrastructure to meet unique mission needs without impacting the overall shelter system architecture. The flexibility of the CPP system makes it attractive to any C2 product manager with a shelter requirement. Several government product managers have leveraged the innovative, modular and scalable RWS design for their shelter needs, avoiding multiplicative designs, repetitive testing and additional logistics infrastructure outlays and, thereby, reducing the cost. Northrop Grumman estimates the use of the CPP common shelter has reduced government test costs for other programs by 20 percent and the reuse of RWS logistics products (e.g. technical manuals and training materials) has resulted in a 50 percent cost savings to other programs. In addition, these shelters are being built on the same production line as the basic RWS, which reduces costs by re-use of processes, facilities, tools and manpower.

**Product / Deliverables** The CPP program is a large-scale program which includes:
- Design, production and support of 950+ RWSs, including more than 80 configuration variants of computers, radios, and other system components.
- Currently a full-rate production program that produces more than seven shelters a month.
- Design, production and support of 1,500+ video/audio systems, and 500+ large screen displays.
Phase I Program Narrative - 2

- Proven, state-of-the-art integrated logistics support training program, field service engineering and sustainment capability.
- Delivery of more than 30,000 spare parts, over 1,800 tool kits, and three versions of retrofit kits consisting of more than 48,000 unique parts
- Tests support for design verification, support to government developmental tests/operational tests and initial operational test and evaluation, first article testing, and production acceptance tests
- Generation and maintenance of a complete technical data package

**Value Creation** We have supported system and design engineering from initial design concept through qualification, initial fielding, low-rate initial production and full-rate production with successful implementation of engineering change proposals to support technology insertions and part obsolescence. The CPP team has exceeded product and program quality performance expectations. We understand and respond to the technical and tactical requirements of the customer, which results in an environment where production can adapt to dynamic communication configuration changes with minimal lead time.

**Organizational Processes/Best Practices** Each CPP variant is built on the same production line, controlled by the same set of processes, and supported by the same enterprise resource planning system yielding reduced customer costs and high quality products that meet customer requirements. A vehicle build package is developed for each system which lists the exact configuration the system was built and any quality notification (i.e., trouble reports) associated with that system to include root cause and corrective action. The CPP team has developed and implemented over 100 processes that are unique to our line of work. Hierarchy of policies, procedures, manuals, and other documentation governs how we conduct business. These components – in conjunction with a dedicated team of skilled managers, engineers, technicians, inspectors, and operators – work together to achieve the quality goals and to drive continual improvement on the CPP program.

**Supply Chain Management** In addition to our customer partnership, the CPP has a close partnership with our supply chain to ensure quality and on-time deliveries. The CPP program involves the integration of hardware/software procured from more than 150 vendors and consisting of more than 2,200 parts delivered in a single end item. CPP has detailed procedures and processes that are in line with our corporate supplier program/partnership to ensure that we meet and exceed our quality standards and timely deliveries. The following highlights many aspects of our program for the selection and management of products and services from qualified suppliers, with an aim toward ensuring all supply chain members fully contribute to mission success. The primary aspects of our program include:

- Developing a team and partnership environment, working with them as partners and not only as suppliers supplying product.
- Defining quality assurance requirements for the supplier
- Ensuring suppliers are qualified to do the work before an award is made
- Approving suppliers based on their qualification and performance
Phase I Program Narrative - 3

- Identifying supplier risks and ensuring the development and implementation of risk mitigation plans
- Monitoring and assessing supplier performance through delivery and quality metrics, and score card processes
- Identifying potential performance issues and ensuring the development of corrective and preventive actions

We have programs to recognize and incentivize suppliers for providing outstanding support, and we have tools and supplier quality engineers to help mentor suppliers who need guidance and training to make them better partners.

Planning, Monitoring and Controlling

Earned value management system is used to monitor and control program cost and schedule. The program management team has ensured on-time deliveries (up to four months ahead of contract schedule) and costs management resulting in significant under runs on cost-plus-fixed-fee and fixed-price-incentive Contract Line Item Numbers.

Best Practices

Our CPP has been acknowledged for “Best Practices” and associated awards by Northrop Grumman and the British Standard Institute (BSI). Specifically, our Knowledge Management, Mission Assurance Metrics, Continuous Improvement Program, Risk Management, and Work Instructions processes all received “best practice” citations from BSI. As testament to our CPP management approach, in 2009 our CPP team received the Northrop Grumman Joint Management Council Team of the Year award. The CPP team award stated that the team and our customer, Product Manager Command Post Systems and Integration, “made significant contributions and demonstrated exemplary innovation to the DoD acquisition process.”

Quality Program

The CPP program is AS9100 Rev B and ISO 9100:2000 Certified (Certificate No: FM 89350 for the following scope: “The design, development, integration, test and support of software and system information systems, including related system and subsystem hardware and software, and services”). CPP first received this registration in February 2005; the program has sustained certification through its ability to demonstrate a continuous, robust Quality Management System that strives for the highest level of quality products and services, relentless pursuit of outstanding customer satisfaction and a culture that drives its products, processes and employees to continually improve. The latest AS9100 recertification was issued Feb. 11, 2011. CPP quality initiatives have been extremely successful in driving down defects, resulting in an overall defect reduction, since 2006, of 62 percent. The AS9100 Quality Management System provides the basic building block foundation for providing quality products, but our dedicated lean and continuous improvement activities have been key in driving down our defects. By continually evaluating our processes for value-added activities and eliminating valueless and ineffective actions and waste, we are able to bring the highest quality product to the battle field with the lowest risk possible to the soldier.

Knowledge Management

The CPP team has consistently delivered quality products on schedule and under budget. We pride ourselves in our ability to team with our customers and suppliers to help them solve complex issues with effective and efficient solutions. The CPP program partnership approach with our customer continues to pay huge dividends in the areas of
Knowledge Relations Management and overall customer satisfaction. Customer satisfaction with the technical solution, quality program, and program management was reinforced with the ratings defined in the last Contractor Performance Assessment Report (CPAR) (Aug 2010 through Aug 2011). The CPP program received two Exceptional and eleven Very Good ratings. Our approach of continuous engagement, efficient issue resolution and co-location are the primary reasons for our success to date in this critical area. Our customer maintains significant trust and confidence in our ability to deliver quality products on schedule. When issues do arise, our “engage and resolve” approach is both effective and appreciated by our customer. We apply these same principles to our supplier relationships.

**Lean Six Sigma** Our proactive Six Sigma and Lean initiatives continue to drive efficiency and improve our ability to support our customers’ operational requirements. These initiatives have realized efficiencies in production (42 improvements), supply chain management (78 improvements), engineering (260 improvements) and overall program quality. To incentivize innovation and employee engagement, we established a continuous improvement initiative that provides a mechanism for staff members to recommend improvements to processes and tools. When recommendations are executed, staff members are acknowledged.

**Adapting to Complexity** CPP has moved from one-off prototype development to full-rate production. For new customers or configurations, our production approach is streamlined toward affordable and timely solutions leveraging our design modularity or commonality, tailored processes and procedures, and acceptance testing on a single production line. We have built the infrastructure to adapt our builds to meet the changing customer requirements. As technology changes, we have the ability to effectively design and integrate enhancements. As parts become obsolete, they are monitored and replaced without significant impact to the production line.

**Metrics** Many key indicators of product quality and customer satisfaction are tracked, measured, and understood by the CPP team. One of the most relevant and important to CPP is a good understanding of product variation, and we have been effective in driving the continuous improvement effort to reduce variation and positively improve our products. These improvements have reduced costs due to rework, reduced production cycle times, improved on-time delivery, and most of all have fostered improved customer satisfaction. When a variation is found, we use our SAP system to detail and store the findings by generating a Quality Notification (QN). To ensure quality throughout the life cycle, QNs are monitored through trend analysis metrics resulting in corrective actions being fed back into our processes. Key metrics that are monitored on a monthly or quarterly basis include the following: Requirements Volatility and Responsibility (less than a 10 percent change since award), Supplier Performance Report and Trends (all critical and key suppliers are rated Blue or Green), Production Delivery Schedule Performance (delivering 6 weeks ahead of schedule), Quality Notices Per Product (less than 1.0 defect per shelter), and Customer Satisfaction (rated Blue).