Major systems acquisitions have been struggling lately with developing and executing strategies that ensure programs meet mission performance and achieve results. This can be especially critical in the military systems environment, where technology moves at a rapid rate and successful source selection is critical for award of a fully-integrated product or system.

Key activities and events occur between the time a requirement is defined and the time the system is delivered. However, sometimes they can get off track. Organizations have acquisition processes and products in place, but strategy execution can still be difficult to achieve an end state of a successful contract. There is often a gap between anticipated and actual practice. This article will concentrate on innovative approaches that can close that gap, and it will offer some solutions to improve the acquisition strategy to ensure systems are delivered. This article will also present a case study regarding the “Joint Defense Global Broadcast Service” (GBS) acquisition strategy to transition systems and software to the Defense Enterprise Computing Centers (DECC), which includes requirements development, alternatives analysis, source selection, and award.

The Pentagon faces a potential implosion with a $650–750 billion a year in funding. According to the Government Accountability Office (GAO), weapons systems are taking twice as long to deliver at double the cost. Last year, GAO reported that the cumulative cost growth on the Department of Defense’s (DOD) major defense acquisition programs was $295 billion in fiscal year 2008 dollars ($301 billion in fiscal year 2009 dollars) and that the average delay in delivering promised capabilities to the warfighter was 21 months. Of DOD’s 96 active major defense acquisition programs, 64 programs have reported increases in their projected cost since their initial cost estimate. Requirements creep has impacted most programs, preventing a stable system fielding. The 2009 Defense Acquisition Reform Bill focused on problems with requirements through delivery. Several major programs have been in the forefront with cost growth. Examples shown
include the Air Force’s F-22 program and the Army’s Future Combat System, where costs have grown exponentially over the life of the system deployment, identified by GAO in its report. Both programs are good examples of systems with Military Communication (MILCOM) elements that must be converged into a system of systems and mindful of requirements delivery and scope creep. Key legislation within the 2009 Defense Acquisition Reform Bill also emphasized early systems engineering, stable requirements, and disciplined software management as important characteristics for programs to achieve less cost growth and shorter schedule delays. (See FIGURES 1 and 2 at right.)

**Defense Acquisition Reform Bill, 2009, Section 101. Systems Engineering Capabilities**
The Defense Science Board Task Force on Developmental Test and Evaluation reported in May 2008 that “the single most important step necessary” to address high rates of failure on defense acquisition programs is “a viable systems engineering strategy from the beginning.”

**Defense Acquisition Reform Bill, 2009, Section 201. Trade-offs of Cost, Schedule, and Performance**
The January 2006 report of the Defense Acquisition Performance Assessment Project concluded that “the budget, acquisition, and requirements processes [of DOD] are not connected organizationally at any level below the deputy secretary of defense.”

**Defense Acquisition Reform Bill, 2009, Section 204. Nunn-McCurdy Breaches**
Since the beginning of 2006, nearly half of DOD’s 95 major defense acquisition programs (MDAPs) have experienced critical cost growth, as defined in the Nunn-McCurdy provision, as amended. Overall, these 95 MDAPs have exceeded their research and development budgets by an average of 40 percent, seen their acquisition costs grow by an average of 26 percent, and experienced an average schedule delay of almost two years.

**Key Factors**
Many factors play into successful acquisitions where the requirements are accommodated in the resulting contract award and program execution. These factors include the following.

---

**Achieving milestone approvals, with a critical eye toward program health, metrics, and setting realistic schedules.**
In December 2008, DOD revised its policy under the DOD Instruction 5000.02, “Operation of the Defense Acquisition System,” for major defense acquisition programs to place more emphasis on acquiring knowledge about requirements, technology, and design before programs start, and then
maintaining discipline once they begin. The policy recommends holding early systems engineering reviews, includes a requirement for early prototyping, and establishes review boards to monitor requirements changes. In light of this new emphasis on health monitoring and oversight, there are several critical factors which should be measured throughout the acquisition process to determine the measure of success:

- Successful milestone decision reviews;
- Timely contract award;
- Award without protest;
- Adequate competition;
- Receipt of reasonable price proposals;
- Integration of performance-based contracting techniques;
- Compliance with regulations, legislation, and mandates;
- Positive findings from oversight organizations (GAO, inspectors general, and the Office of Management and Budget); and
- Balancing risk and reward through the right contract type and incentives.

The acquisition strategy should be built around the requirements, but it should also be built around the market environment and the ability and motivation of industry to deliver. Market analysis should be performed to determine competitive landscape and to determine incentives for the contract, the most appropriate contract type, and other factors such as national security or maintenance of alternate industrial base capabilities. The requirements must reflect the technical needs and cost over the full life cycle, as well as calculate the stability of costs over time. Understanding the total value of the proposed procurement will be a reflection of the quality and depth of the alternatives analysis and the independent government cost estimate. Finally, the acquisition strategy should reflect the requirements for a fully integrated system, with cause and effect analysis with other equipment or systems.

Developing a strategy that identifies dependencies on a critical path and engages industry at the right times to foster partnerships.

The acquisition life cycle begins with acquisition planning and continues through source selection, program and contract management, and program delivery and contract closeout. There are many processes and specific products that are interrelated, building on each other in a series of activities,
or concurrent work streams that involve many players. These activities involve many subsystems, such as program/project life cycle planning and management, earned value management strategies, risk management planning, stakeholder relationship management, and cost and schedule baseline development. These activities also include contracting activities that must support the requirements development process, such as incentives development and source selection management. Finally, outside influences must be considered, such as policy and legislative analysis and programs designated as “special interest” by DOD or Congress, which have special reporting requirements.

The use of such standard programmatic methodologies, such as design reviews, program reviews, and critical milestone reviews, go a long way to support program execution. However, during the early acquisition phase of requirements development and source selection, special emphasis must be placed on strong program management techniques in order to ensure that all players are involved, engaged, and informed. Key program management individuals should receive training and have skill sets before being assigned to a critical position. Participants should understand the difference between managing a project, a program, a complex program, and a major program so that they can operate within the appropriate order of magnitude. All key players and advisors must attend mandatory source selection training once the process begins to ensure the integrity of the process. Finally, key players should be articulate in the latest project management tools that will be used to develop the requirements and manage the acquisition.

Ensuring the capabilities requirements, alternatives analysis, independent cost estimates, and market research are reflected in the strategy and the resulting system delivered to the user community.

Acquisitions have required analysis and resulting documents which reflect the requirements and convey a means to acquire those products or services through contracts with industry. These include the following items that are normally a part of any major acquisition within the federal government. (Refer to FIGURE 3 on page 51.)

- Analysis of alternatives,
- Independent government cost estimate,
- Life cycle cost estimates,
- Statement of objectives,
- Performance work statement,
- Metrics for service level agreements,
- Acquisition plan,
- Source selection plan,
- Contract line item number list,
- Evaluation criteria (solicitation proposal provisions, award criteria),
- Technical evaluation panel documentation,
- Pricing negotiation memos, and
- Contract award.

The requirements development process includes certain considerations that will help close the gap between source selection and award to ensure the needs are satisfied. These items have been identified by DOD in their MDAP process with DOD Instruction 5000.2 of November 8, 2008, and included such items as acquisition approach, best practices, business considerations, capability needs, environment, safety, health, human systems integration, information assurance, information technology, integrated test and evaluation, open systems, product support, program structure, relief, exemption and waiver, research and technology protection, resource management, risk management, and systems engineering. Applying effort and energy up-front in analyzing and considering these items will go a long way to accommodate a well thought out requirement and a fully executable program.

Implementing program management office (PMO) governance to ensure stakeholder involvement, effective use of teams, and collaboration across activities.

Effective program governance is critical to the execution of an acquisition strategy and a successful source selection of the mission capability. First, establishment of the overall program goals and objectives and the implementation approach must be defined early and conveyed to all players and stakeholders. Second, the process of developing, communicating, implementing, monitoring, and assuring the policies, procedures, and decision-making rights associated with a given program are critical to the overall program operation. Third, proactive management of internal and external stakeholders and the necessary information flow will reap huge benefits as the source selection is executed and the resulting system is delivered. The metrics used to assess the success of the programs and projects within the PMO’s mission must be defined up-front and then measured for program health indicators, oversight, and reporting.

A highly successful PMO governance technique is to integrate the programmatic, technical, and acquisition swim lanes into
a master plan so that no functional area is stove-piped. Another key action is to anticipate change management and utilize certain techniques such as business process reengineering or “lean” thinking in order to continually improve the process and identify lessons learned.

**Quantitative tools that can support performance management.**

Tools should be available to the program office and the acquisition office that provide a high degree of confidence that all milestones and events are being captured and monitored for the health of the acquisition. There are several tools that are commercial-off-the-shelf that can offer performance management. These would come under the categories of performance management, planning and scheduling, risk management, and acquisition management. Performance management tools should include attributes such as database management, reporting, dashboards, software development, and systems analysis. Planning and scheduling tools should consider a “PERT” chart feature, work breakdown structure, an integrated master schedule, and an integrated master plan capability. Risk tools should accommodate technology readiness ratings, a risk register, and a risk matrix that integrates with the project management tools to alert the program early. Acquisition management tools include performance-based acquisition templates, contract type diagnostic tools, and source selection and award tracking software.

**Case Study**

A pertinent case study involves the Joint Defense GBS DECC Transition Acquisition Strategy, which describes the source selection process from its requirements identification in the acquisition strategy through contract award. This case study represents an effort to transition a major MILCOM system with many subsystems into a new environment, and at the same time leverage technology and cost efficiencies. It also represents a convergence of several requirements with interdependencies that must be accommodated in order to have a successful joint, integrated operation. (See **Figure 4** below.)

**Acquisition strategy, approach, source selection**

The GBS program is a three-block phased program, providing worldwide broadcast service coverage to the warfighter under a satellite broadcast manager (SBM) suite of equipment. The secretary of defense directed the U.S. Air Force to relocate the military communications system from current facilities with the U.S. Navy to transfer GBS to DISA DECC sites with new hardware and software architecture by 2010; implement system transmission security via the “joint Internet protocol modem”; and provide operations, maintenance, and sustainment for the GBS program throughout the life of the GBS. In addition, the GBS transition-to-DECC program will address select pre-planned product improvements capabilities to non-space segment enhancements to battlefield management systems and receive suite capabilities. Pre-planned product improvements provide for a technology insertion strategy designed to fully leverage information.

---

### Figure 4.

<table>
<thead>
<tr>
<th>Project Operations</th>
<th>Acquisition</th>
<th>Functional</th>
<th>Technical</th>
<th>Change Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cost management</td>
<td>• Concept development</td>
<td>• Requirements identification</td>
<td>• Requirements identification</td>
<td>• Communications and outreach</td>
</tr>
<tr>
<td>• Schedule management</td>
<td>• Acquisition strategy</td>
<td>• Business process reengineering participation</td>
<td>• Technical representation of evaluation criteria and materials development</td>
<td>• End-users relations management</td>
</tr>
<tr>
<td>• Resource management</td>
<td>• Market research</td>
<td>• Functional representation of evaluation criteria and materials development</td>
<td>• IT architecture</td>
<td>• Business process reengineering</td>
</tr>
<tr>
<td>• Performance measurement</td>
<td>• Solicitation development</td>
<td>• Source selection and award</td>
<td>• Data management</td>
<td></td>
</tr>
<tr>
<td>• OMB Exhibit 300 reporting</td>
<td>• Source selection and award</td>
<td>• Protest support</td>
<td>• Configuration management</td>
<td></td>
</tr>
<tr>
<td>• Risk management</td>
<td>• Contract management</td>
<td>• Contract management</td>
<td>• Security</td>
<td></td>
</tr>
<tr>
<td>• Requirements management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• System development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• life cycle management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Knowledge management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
technologies to permit alterations in our concepts of operations, doctrine, organizations, and force structure.

The air force conducted market research and alternatives analysis, and determined that a competitive solicitation that would be full and open to industry was the most appropriate acquisition strategy for the GBS SBM DECC transition services. The government utilized a “best value” approach, as defined in the Federal Acquisition Regulation, to allow for trade-off analysis of technical, past performance, and cost.

The air force also determined that the best contract type would be a cost arrangement, since the exact extent of the work was unknown and the risks could not be quantified at the time. However, the Air Force wanted to incentivize the contractor for cost control and good performance. Therefore, the solicitation included a cost plus fixed fee with performance incentive contract with contract line items that provide technical, schedule, cost, and management incentives.

The air force established a source selection evaluation team (SSET) comprised of key functional leads as well as advisors for subject matter expertise and functional support. The SSET also utilized the Air Force Acquisition Center of Excellence in order to provide training to the team. The SSET process was fully detailed in acquisition and source selection documentation, and a master schedule was established and maintained throughout the source selection.

**Process for technical, management, and cost evaluation, as well as incentives.**

The solicitation identified the evaluation and award criteria with four factors for award, with subfactors also a part of the evaluation:

- Factor 1—Mission Capability;
  - Subfactor 1—System Design/Development/Integration/Implementation,
  - Subfactor 2—Program Management,
  - Subfactor 3—System Operations/Maintenance/Sustainment;
- Factor 2—Past Performance;
- Factor 3—Cost/Price;
- Factor 4—Cost/Price Risk.

Mission capability is more important than past performance, and mission capability and past performance, when combined, are significantly more important than cost/price and cost/price risk combined. A cost plus fixed fee with perfor-

### Figure 5.

<table>
<thead>
<tr>
<th>Critical Success Factor</th>
<th>Best Practices for Acquisition Planning and Source Selection</th>
</tr>
</thead>
</table>
| Engage stakeholder early in the cycle | • Conduct meetings with all stakeholders to help define functional and technical requirements.  
• For larger acquisitions, institute integrated product teams with contracts, project management, finance, security, etc.  
• Have a feedback loop to keep communications open. |
| Employ standard acquisition processes and templates | • Standard, well-communicated processes and templates gain efficiency and allow for streamlining of the process since you know what to expect.  
• Provide a user-friendly intranet website that provides access to templates, examples, forms, regulations, etc.  
• Develop a checklist to ensure that all bases are covered. |
| Establish performance-oriented approaches | • Employ performance-based methods for acquisitions of services.  
• Create templates for performance-based contract documentation. |
| Understand prevailing best practices for performance-based acquisition | • Provide performance-based acquisition training to all stakeholders.  
• Work with the project managers from the start to not only understand their requirement, but to facilitate performance standards that are measurable and achievable.  
• Create a repository of policy, guidance, and templates pertaining to performance-based acquisition methods. |
| Know the market | • Interview/access more internal stakeholders to get a more detailed, technical understanding of the requirements and what services are available in the market—become the business advisor. |
formance incentives contract is projected for the DECC transition effort, whereby both performance and schedule requirements of discrete events must be met in order for the contractor to earn performance incentive fees. The pre-planned product improvements initiatives shall be cost plus incentive fee, with a target fee (proposed by the contractor) not to be exceeded by +/- three percent (swing) and a share ratio of 70/30 over and under.

A performance incentive structure has been developed to motivate the contractor to provide robust performance while not sacrificing cost or schedule. Performance and schedule requirements of discrete events must both be satisfactory in order for the contractor to earn performance incentives. Acceptable performance and schedule in all measured areas to include final design, DECC transition, and SBM transition is required to earn incentive fee. Cost incentive is earned only if actual costs are no greater than five percent of proposed cost. The performance incentive fee pool shall not exceed eight percent of total contract value. The contractor will also receive a fixed fee of three percent, for a maximum total potential fee of 11 percent for the DECC transition effort.

**Lessons Learned**

Several key lessons were learned during execution of this source selection that were reflective of a clear acquisition strategy and strong program management:

- Source selection training was vital. The Air Force Acquisition Center of Excellence provided training that was mandatory for all members of the Source Selection Evaluation Board, delineating the acquisition guidance and requirements for the process. As a result, all participants were on same page relative to rules and tools.
- All dependencies were clear. The SSET chairman and the procuring contracting officer prepared a clear source selection plan, using the air force mandatory procedures for source selections, along with procedures and forms that were tailored for the GBS DECC procurement. As a result, all milestone approvals to source selection authority were met, and all teams completed their reviews within the stated guidelines.
- All players, including the source selection authority, SSET, evaluators, and advisors, were all on task and motivated. They understood the goal, and they were all informed of the criticality of their role on the team. The SSET chair provided regular updates through team meetings and pulse checks to ensure everyone knew the status of the source selection.
- Leadership was strong, and the team understood the objectives and commitments of time and technical talent. The schedule was well published so people could make travel plans and work around holidays and personal commitments.
- Open dialogue and respect for team members’ skills and talents was critical in order to achieve a fully vetted recommendation. There was spirited dialogue, and at the end of the discussions, everyone respected other opinions and what each person brought to the table.

**Conclusion**

Conclusions and recommendations include best practices in acquisition strategies and source selection activities to ensure convergence of all interdependencies. (See **Figure 5** on page 54.) Several things to consider include:

- Methodologies that provide processes and products to support requirements determination through execution;
- Tools and templates that can be integrated and are relevant; and
- Best practices for strategy, planning, source selection, and performance measurement throughout the life cycle.

However, there are several overarching actions which will help guide a successful acquisition strategy from requirements development through successful program execution. First, users have to play in the process. If they are excluded or diminished in their role, they will feel disengaged from the process and will be unable to support successful program implementation. Second, integration of the acquisition and technical process is critical in order to achieve a fully connected life cycle approach. Use of integrated product and process teams will enhance the dialogue and create a forum for collective consensus. Third, the use of incentives in the contracts can help shape the outcome and motivate all players—government and industry—to achieve common goals. Finally, the contract structure is critical in order to provide discipline in the budget process and incorporating technology improvements. Use of the appropriate contract type, such as fixed price or cost, and the use of applicable clauses, such as options for product improvement, will offer flexibility and adjustments as the system is deployed.  

*JCM*