

From Approved J&A to Contract Award in 16 Weeks

An Alpha Contracting Success Story

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Early in 2004, the advanced crew served weapon team completed the award of a \$94 million development contract using an alpha contracting approach in a total time of only 16 weeks from approval of the justification and authority (J&A) document on Jan. 8, 2004, by Claude Bolton, Army acquisition executive, to contract award on April 30, 2004. Meeting this aggressive schedule was a significant accomplishment for the ACSW team.

The ACSW system, slated to serve as the common close support weapon system for the unit of action (U of A), entered the system development and demonstration (SDD) acquisition phase as part of the U of A in December 2003. The XM307 25mm ACSW is a core complementary system to the U of A, intended to support U of A vehicle-mounted applications on both manned and unmanned platforms as a remotely fired weapon system. Other planned potential applications for the ACSW include ground-mounted and pintle-mounted applications.

In fiscal year 2003, the ACSW program successfully transitioned from the objective crew served weapon advanced technology demonstrator, the predecessor program on which the ACSW is based. ACSW's key capabilities include the successful technology demonstration of the 25mm air bursting munitions, warheads, recoil management, and fire control required to increase the lethality of the XM307 over the systems it is targeted to replace (the M2 .50 caliber machine gun and the MK19 40mm grenade machine gun).

Keys to Success: Lessons Learned

The ACSW team identified several lessons learned. Two stand out as most important.

Firing an XM307 25mm weapon from a HMMWV vehicle



First was the crucial nature of planning—not simply planning as an overview of what milestones and events need to happen, but planning to discuss and address every aspect of how, when, and where alpha contracting negotiations take place.

Second was the absolute necessity for teamwork. We had a common enemy—the calendar—and a primary team goal—to build a great system at a fair price to meet or exceed customer expectations, while ensuring that the contractors made a fair profit. We had to relinquish some old ideas. We wouldn't succeed if we sat down on opposite sides of the table as "us" the government and "them" the contractor.

Planning

Prior to the signing of the J&A document, our procurement contracting officer authorized the discussion of how to potentially conduct an alpha contracting process with

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our prime contractor, General Dynamics Armaments and Technical Products (GDATP), Burlington, Vt., and major subcontractors: General Dynamics Ordnance and Tactical Systems in Marion, Ill.; Raytheon in El Segundo, Calif.; and Kaman-Dayron in Orlando, Fla. All parties involved identified integrated product team (IPT) members for each subsystem of the ACSW. The subsystems were systems engineering, program management, weapons, ammunition, and fire control. Integrated logistics support, safety, packaging, and test and evaluation were included as components of the systems engineering team. Com-

key milestones, and deliverables clearly identified. At the start of each week, the full ACSW IPT team met to establish daily schedules and deliverables. We established full team and component meeting times, including times for government-only and contractor-only meetings. These meetings were necessary because although an alpha contracting process is fully open, there must be opportunities to discuss issues without the presence of the other party in a contract. These brief meetings allowed issues to be raised and dealt with on a non-attribution basis.

Teamwork

Full team buy-in was essential every step of the way, so the team jointly developed the work breakdown structure (WBS) and statement of work (SOW), and members participated side by side in the development of the contractor's basis of estimate (BOE). Work requirements were tailored to match the contractor capabilities and the critical customer needs, achieving many areas of joint cooperation and eventual cost savings. A hidden benefit of this process was reduced risk. A key aspect of teamwork was involving our DCMA and DCAA representatives as active team members. This was critical to maintaining milestones; obtaining knowledge of the contract; achieving early buy-in and required approvals; and identifying issues with the WBS, SOW, and BOE.

The government personnel spent most of the first nine weeks away from home, either traveling to the prime contractor or subcontractor locations. Subcontractors spent much time working jointly with the prime contractor, as alpha-type discussions were occurring company to company as well as between industry and government. Prime contractor personnel also traveled to subcontractor sites and worked long hours to coordinate the outputs from daily discussions.

Finance

Another key lesson learned is the value of good financial planning and open communication about financial goals. Using the program office estimate as a starting point, we established a rough annual budget for each component team. This budget consisted of direct charges only. The award fee was separately negotiated later, but by developing the budget without fee, an award fee "not-to-ex-

XM307 25mm Weapon.



ponent IPT teams consisted of representatives from the program office (Project Manager Soldier Weapons); technical support (Armament Research, Development and Engineering Center and Army Research Laboratory); contractor and subcontractor representatives; and the Defense Contract Management Agency (DCMA) and Defense Contract Audit Agency (DCAA) representatives.

An alpha contracting process requires a very high level of team dedication and long hours of work, both at home station and on the road. We made sure, well before the start of the process, that all IPT team members were aware of, and supported, the extensive time and travel demands that would be made of them.

Our team schedule for the alpha contracting process was organized by week with responsible organizations,

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Key Lessons Learned

- There's no substitute for planning. Don't enter into an alpha contracting effort without planning all aspects of people, places, time, and travel required.
- Have a realistic financial plan and share that with your contractors. It makes no sense to ask a contractor to plan a program you can't afford.
- Conduct at least one Tiger Team-type review.
- Use the IPT team to the fullest, empowering and trusting them to get the work done.
- A hardworking, dedicated team is key. Our team put in long hours, worked very hard, and endured Vermont weather that reached -15° F. (This occurred on the day of our planned outdoor demonstration. Yes, we held it anyway.)
- Set up a list of critical deliverables from the process and stick to them. At times we worked until close to midnight to avoid slipping a weekly or daily milestone.
- Set up a formal process for conflict resolution and use it.
- Set up a process for team discussions with formal or informal team facilitators. There simply is no time for teams to wander off into interesting technical discussions that might solve a problem in year three of your program.
- If you enter an alpha contracting process with the attitude that the government is on one side and the contractor on the other, that each side is wary of or seeking to take advantage of the other—you have already failed.
- The strength of teamwork in fostering an alpha contracting process cannot be overstated. If you think of government, contractor, and support organizations as one team, you're on the road to a successful alpha contracting process.
- Have some fun. Working together on an intense daily basis created some great personal and professional relationships, and we all agreed that however demanding, this was one of the most rewarding experiences of our careers.

ceed" range was, in effect, negotiated at the beginning of the process. Those dollars were no longer available to address technical issues, and scope was reduced to meet the cost constraints.

Our team experience leads us to recommend up-front negotiation of the total fee, with the understanding that if the scope is reduced to meet cost objectives, then the fee may be reduced proportionately. Using a budget without fee allowed the team to concentrate first on technical goals, criteria, and costs, and later on award fee, award fee criteria, and award fee evaluation plans. This further simplified and compartmentalized the process. The total expected program cost, then, consisted of the budget for each component team by year, an estimate reserve for award fee, and a reserve amount to assist with the iterative budget process to follow. Based on the developed budgets, WBS, and SOW, each component team developed rough order-of-magnitude estimates to complete its portion of the project. The full IPT review approach was used to ensure there was no duplication of effort by the different component teams and that each team's efforts complemented those of the others.

Weekly Deliverables

The importance of establishing weekly deliverables as distinct, measurable events and documents is another key to alpha contracting success. After the deliverables for each week were completed, we found, however, that there was no substitute for a full IPT team review. This ensured that the deliverables met the overall goals and were satisfactory enough to support moving to the next week or phase in the process, and that everyone agreed that the work reflected the best effort possible. This weekly gut check let everyone know that the IPT team fully supported what was being produced. At critical times during

the process, weekly or even daily deliverables were broken down even further, with component teams submitting technical input or cost estimates at specific times during the day. This effort was crucial because any slip in the weekly milestones would have resulted in slippage of the award date.

Conflict Resolution

An alpha contracting process shouldn't be undertaken without a formal process in place to handle conflict. Our team established a process for raising technical and program management issues to the systems and program management teams. Our plans included the use of a formal decision-focus tool to organize these discussions.

Team Organization and Rules of Engagement

Each component team used one team member as an informal facilitator. The role of facilitator (which rotated among team members) was to keep discussion relevant, keep the team focused on the weekly deliverable at hand, and guide the discussion. The team facilitator enforced the "20-minute rule," which stated that if a team found itself discussing the same topic without progress for 20 minutes, the facilitator should stop the discussion, assign the topic to a "parking lot," and move on. "Parked" topics were addressed later or discussed with the full IPT or other component team(s) as required.

Data Collection

During the alpha contracting process, the teams made extensive use of an online integrated data environment (IDE), which expedited the sharing of complex data files; extensive estimates; and the evolving SOW, WBS, and integrated master schedule documents. IDE use and access was especially critical when the component teams met

with the subcontractors at different sites. It also augmented the flow of large contracting documents between the government and prime contractor. In addition, using the online coordinated pricing systems of the prime and subcontractors greatly enhanced both the speed and fidelity of the cost estimates and, eventually, the signing of the BOEs by contractor, technical, and DCMA representatives.

Tough Calls

The program management and systems engineering teams, in addition to serving as overall facilitators of the process, needed to make tough calls on program technical scope. The first iterations of the WBS- and SOW-generation process, combined with the first set of ROMs (rough orders of magnitude), quickly indicated that the perfect solution to all the potential technical issues wasn't going to be affordable. Two different areas of the ACSW program were significantly de-scoped to accommodate the budget. The teams also made tough calls concerning the basic budget profile allocation to each technical area. Cutting each component team by a straight line percentage didn't make sense at several points in the process. The right decisions were made only after careful consideration of the required deliverables to the U of A and the expected system maturity. The teams often had to make decisions very quickly to avoid impacting the continuity of WBS, SOW, and BOE generation.

Perhaps the toughest call for the program management team came near the end of the SOW generation process. The entire program had been generated and was considered by the full IPT to be the best technical effort required to conduct the critical components properly and meet the U of A deliverables. The program was within the overall budget allocation for the entire program, but it wasn't within the yearly budget allocation. Further reduction in scope or delay of development would result in a broken program. The program management team decided that the yearly deltas would be manageable within PEO Soldier. This last decision was the key to proceeding with an affordable program that met all the critical technical objectives.

Two-Phased Approach: Technical and Contracts

We conducted our alpha contract discussions by organizing work into two informal phases. The first was the technical phase, in which the WBS, SOW, and BOEs were generated, reviewed, and approved. Documents for the formal pricing certification and contract generation and award process came out of this phase to support the sec-

Another key lesson learned is the value of open communication about financial goals and good financial planning.

ond—contracts—phase. In week nine, as alpha contracting transitioned from the technical to the contracts phase, the leadership also shifted from our program managers and systems engineers to our procurement contracting officer and contracts manager.

During the technical phase (weeks 1 through 9), all emphasis was placed on completion of technical objectives under the technical budget, without complicating the situation with fee levels. The technical phase concluded with a Tiger Team review at which upper management from PM Soldier Weapons, GDATP and its subcontractors, and independent technical reviewers were briefed on the alpha process, generated documents, expected exit criteria, contract deliverables, and the master schedule. The review was critical to obtaining buy-in from both sides and provided the authority to proceed with formal pricing toward contract award. The review also provided an independent evaluation with fresh eyes to catch any item overlooked and foster use of best practices.

The contracts phase (weeks 9 through 16) included the pricing of a very complex proposal that covered four years of effort at a cost of \$94.0 million. A four-part award fee plan was implemented consisting of program management, technical performance, deliverables, and cost saving criteria. The program management component, an evaluation of earned value and risk management, is weighted more heavily toward the beginning of the system design and development (SDD) phase. The technical performance award fee is concentrated on the performance data submitted for the critical design review and the results of the government-conducted development testing (DT) and limited user testing (LUT). Deliverables are heavily weighted toward the end of SDD when the contractor delivers the DT/LUT hardware. Award fee is also earned through the contractor's efforts on cost saving; the contractor can earn a percentage of contract costs saved over the course of the contract as profit by finding more efficient ways to conduct the proposed contracted efforts.

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