



FCS Restructure – Alpha Contracting as Best Practice

COL Russell J. Hrdy, Valori B. Bring, Matthew C. Danter,
Sean Garcia and Maureen Johnson

It was the best of times, it was the worst of times. The epic Future Combat Systems (FCS) Restructure will probably never make the best-sellers list, but for the hundreds of individuals who orchestrated the dramatic program changes, it will remain forever a classic digest of how people working together in innovative ways can bring about monumental change. The team faced major program revisions, new acquisition concepts, tight schedules and a less-than-desirable physical environment while continuing to execute the most demanding program in U.S. Army history.

In July 2004, Army leadership directed the Program Manager Unit of Action (PM UA) to change the FCS program by adding a comprehensive experimentation and technical maturation program, returning five major systems previously deferred in the original contract, reprioritizing program technologies development, extending the program schedule and adding four increments of spiraling out FCS capability to the Current Force. This change was issued as a ceiling-priced modification to the existing Other Transactional Agreement in August 2004. This \$6.4 billion directive required FCS leadership to address complex uncertainties such as:

- How do we plan, define and implement these pervasive changes without disturbing the baseline program?
- How do we implement the spin-out (SO) strategy — contractually and programmatically — while sustaining

the basic program design activities?

- How do we get everyone on board with these changes as soon as possible?

For FCS, “getting everyone on board” means addressing the One Team Partners (OTPs) comprising government personnel from PM UA, the U.S. Army Training and Doctrine Command, Defense Contract Management Agency (DCMA), Defense Contract Audit Agency (DCAA), various related program executive office user groups, and contractor personnel from Boeing, Science Applications International Corp. and all major subcontractor OTPs. All 7,000 government and contractor personnel supporting the FCS program were affected by the changes the directive presented. Consequently, the challenge for FCS leadership was to build a new program that introduced and integrated those changes seamlessly. This involved creativity and extraordinary decision-making and communication processes, as well as absolute dedication to the contracting effort.

Planning

Setting the Stage. Alpha contracting — government and contractor partnership in developing the modified contract — was determined to be a necessity, not an option. The first major step was identifying government and contractor personnel who would be dedicated to the contracting effort for the ceiling-priced modification initiation. This group, initially consisting of fewer than 100 people, was committed to planning the new restructured program and charged with drafting the overall program plans to capture how the changes influenced the existing baseline. They also had to capture changes represented in the ceiling-priced modification documentation and determine if they could be used as foundation materials for kicking off the Alpha definitization activities. Availability of these documents was essential for communicating the restructure’s breadth and depth to the integrated product teams (IPTs). It also provided the foundation for the IPTs to use in detailing the lower-level proposal and implementation documentation.

The \$6 billion FCS Restructure Program is one of the largest programs ever undertaken by the Army acquisition community. It returns five major systems previously deferred in the original contract, reprioritizes program technology development, extends the program schedule and adds four increments of spiraled-out FCS capability to the Current Force. Here, Soldiers from the 3rd Infantry Division “mount up” in their M1A1 Abrams tanks for a recon mission near Baqubah, Iraq, Aug. 1, 2005. (U.S. Army photo by SSG Suzanne Day.)



The joint government and contractor restructure team first developed and allocated cost targets, supported by cost history from the original program. Cost as an independent variable was a significant factor in managing the estimating activity.

The Script. The second major planning activity involved organizing the Alpha proposal and definitization efforts. This included decisions that were made regarding who would be involved, how interfaces would work and the location of personnel who would be engaged in the proposal activities. A key element of this plan established empowered IPT government and contractor co-leads as decision makers at all restructure team levels. Collocation of dedicated representatives from each stakeholder and IPT was another key decision considered essential to successfully completing the concentrated effort within the abbreviated schedule.

A plan was formulated that engaged all OTP stakeholders in the effort — government, contractors and their subcontractors — along with details concerning which participants would be required to be involved in a collocated environment during specified activities. Although there were approximately 1,200 personnel involved during the 7 1/2-month period, this planning resulted in approximately 300

people dedicated to the effort at any given point in time.

The most critical planning documents included:

- Plans that represented a new approach to the program and were significantly different from the original program. This was a 3-month effort by government, contractor, subcontractor and user technical teams to construct a new program representing a series of integration phases formed to support SO product delivery. Reviews conducted at the conclusion of each integration phase had defined entrance and exit criteria derived from the new program Integrated Master Plan (IMP).
- Program master schedules and subordinate IPT schedules were developed, aligned and continuously revised throughout the restructure activity. Numerous exercises were conducted with multiple IPTs to ensure horizontal integration across all IPT schedules. As disconnects were identified, the teams corrected and continuously updated their schedules. The new Integrated Master Schedule (IMS) was incorporated into the original program IMS on a 3-month interim basis until the restructure was completed.
- A hardware allocation matrix was another key tool that synchronized the hardware requirements for each IPT. The hardware matrix identified sub-component deliveries, brassboards and prototypes by month.
- Ground rules and assumptions that incorporated the newly developed program IMPs provided guidance for the estimating process.

Major Roles. With program plans, schedules and ground rules in place, the questions remained: “How do we make decisions quickly to support this

monumental effort within the needed schedule?” and “How does this dedicated team synchronize the changes with the original program?” The answer to both questions, and the third key piece of the major plan, was to establish a dedicated board to adjudicate day-to-day proposal/programmatic decisions and to act as the liaison to the original program.

This board was aptly called the Transition Review Board (TRB) because its major focus was to ensure successful transition from the original program to the restructured program. The TRB consisted of senior government and contractor engineering representatives who served as the decision-making body governing technical program development and helped the IPTs meet the plan’s cost, schedule and performance requirements. A key indicator of the board’s



success was that teams actively sought to bring issues to the board for resolution because swift decisions were essential to the teams' success. Teams knew they would get help solving difficult technical, schedule and hardware problems.

Execution

The Performance. With sound plans established and communicated, the Alpha proposal development began in earnest. The single greatest challenge in drafting it was to achieve balance in cost, scope and schedule to allow the program to proceed without disruption. The proposal process established multiple cycles that formally advanced the maturity of the estimates and related contractual documents.

The joint government and contractor restructure team first developed and allocated cost targets based on solid

modeling techniques. These models were supported with cost history from the original program.

Next, the restructure team planned two estimating cycles for the IPTs. The first cycle was a leveling exercise designed to ensure the targets were correctly sized and allocated to the subordinate teams. Cost as an independent variable was a significant factor in managing the estimating activity.

The IPTs were encouraged to achieve their cost goals by generating lists of potential capability or scope reductions and process modifications. The TRB subsequently reviewed these lists and approved or disapproved them for implementation. The first estimating cycle completion resulted in adjustments to the IPT targets and provided a solid foundation for the final estimating cycle.

Parallel contract documentation development proved challenging and, again, the need for balance and horizontal integration was crucial to future program performance — both at the prime level and the OTP level. The statement of work, data items, IMP, government property lists and contractual terms had to mature in concert with the proposal estimates. These documents were all worked in an Alpha environment and the contract and subcontract management teams worked side-by-side in preserving all program/proposal developments so that a fully integrated, restructured agreement could be finalized and represented in the resulting prime-level modification and subcontract documentation.

The Reviews. The restructure's size and complexity required reviews from



The FCS Restructure Program will benefit Soldiers today as major systems receive spiraled-out technology. Here, Soldiers from 1st Battalion, 15th Infantry Division, provide security while Iraqi Army soldiers conduct house sweeps for insurgents near Samarra, Iraq, May 29, 2005. (U.S. Air Force photo by SMSG Kim M. Allain.)

a range of stakeholder organizations. Various reviews were conducted by members within the Army hierarchy and the contractor's organization on an interim basis throughout the proposal activity. Reviews normally conducted as "oversight" reviews or audits after the proposal was finished were instead conducted "real time" because major players such as DCAA and DCMA were active Alpha team members. In addition to the required reviews, the restructure team invited some independent organizations to provide feedback and independent perspectives on the proposal products' soundness. These included a "Red Team" and an Independent Schedule Review. The Office of the Inspector General and Cost Analysis Improvement Group reviews were conducted in parallel with the proposal activities. Each analysis resulted in an improvement to the eventual proposal product.

Lessons Learned

The FCS Program Restructure, performed in an OTP-Alpha environment, was one of the most ambitious missions ever undertaken by a major program. The lessons learned were many and, in some cases, what appears

to be one of the best features of the undertaking is also one of the worst. What is clear to all who were involved is that the benefit of the multilayered, multifaceted Alpha process was the opportunity to have the best of FCS's best join a common goal of making the FCS program even better.

The Best

The restructure team spent an extraordinary amount of time developing program plans and schedules, defining technical approaches, instituting efficient decision-making venues, outlining estimating and proposal strategies and establishing multilayered communication lines.

The TRB proved to be an essential feature of the restructure proposal effort. Because of the board's viewpoint across all IPTs, the TRB performed as an empowered, knowledgeable and responsive source

for keeping the IPTs moving as they encountered difficulties and inconsistencies in the challenging process. The board also maintained integration with the baseline program, which was critical to implementing the program restructure.

Collocating all key players at a given point in the activities contributed greatly to improved communication. IPTs heard firsthand how their programmatic decisions impacted other IPTs. Schedules and hardware deliveries were synchronized and all participants gained an in-depth understanding of the work effort. More importantly, an atmosphere of trust and appreciation for one another occurred. Communication was enhanced

Collocating all key players at a given point in the activities contributed greatly to improved communication. IPTs heard firsthand how their programmatic decisions impacted other IPTs. Schedules and hardware deliveries were synchronized and all participants gained an in-depth understanding of the work effort.

through the physical environment. Overall, it was clear that FCS has a better, more integrated program because of stakeholder collocation.

The Worst

Most participants would say that the worst feature of the collocated Alpha process was the heavy travel commitment that took FCS personnel away from their families for weeks at a time over the 7-month period. Personnel also worked extremely long hours to support the time-critical schedule milestones.

Communication in the Alpha environment and the "pods" was enhanced because of the dedicated, collocated teams, but it was also laborious. The pods forced a collaborative work environment, but they were also a

Communication was enhanced through the collocation of key stakeholders and IPT representatives at a given point in restructure activities. More importantly, an atmosphere of trust and appreciation was forged across the board.





The AH-64D Apache Longbow helicopter is another Current Force weapons platform that will benefit from SO technology. Here, a 3rd Armored Cavalry Regiment pilot takes off from Forward Operating Base Sykes, Iraq, Aug. 11, 2005, for a security mission over Ninewa Province. (U.S. Army photo.)

source of discomfort and frustration for individuals who are accustomed to working in a quiet office environment.

The restructure teams' separation from the basic program was difficult for both those individuals on the restructure team and those continuing to work on the basic program. Although communication of the changes and progress of the restructure teams was made through the boards, the individuals continuing

COL RUSSELL J. HRDY is the Project Director, PM Unit of Action SO Development. He holds a B.S. from the U.S. Military Academy and an M.S. in manufacturing systems engineering from Lehigh University.

VALORI B. BRING is the Boeing Director, FCS SOs, Production and Fielding. She holds a B.S. in electrical engineering

to work the basic program felt they did not have an in-depth understanding of how the restructure would impact the program until the restructure team was re-integrated into the new program.

Achieving Success

The more than \$6 billion FCS Program Restructure was a mammoth undertaking. Doing it in an Alpha environment proved to be the best way to have FCS emerge a better

from Pennsylvania State University and an M.B.A. from Washington University.

MATTHEW C. DANTER is the Lead Systems Program Integrator for DCMA at the Boeing Co. in St. Louis, MO. He holds a B.S. in mechanical engineering from the University of Missouri.

SEAN GARCIA is the Director of FCS

integrated, better understood program — all to the benefit of our Soldiers. The challenge brought out the best in the best FCS team — both government and industry — to restructure this highly complex system-of-systems by employing all stakeholders in the planning, execution and decision-making processes. FCS has a history of people working together in innovative ways to achieve success, and this story is an FCS classic.

Contracts and Pricing, Boeing Integrated Defense Systems. He holds a B.S. in business administration from Northern Arizona University and an M.B.A. from Arizona State University.

MAUREEN JOHNSON is Deputy Director of Boeing FCS Contracts and Pricing. She holds a B.A. in philosophy from the University of Texas.