



THE TRANSFORMATION OF CONTRACT INCENTIVE STRUCTURES

Robert Graham

The National Polar-orbiting Operational Environmental Satellite System's Acquisition and Operations contract for the next generation of weather satellites uses innovative incentive structures to motivate contractor performance. The incentive approach combines an award fee and mission success fee arrangement to include a cost mitigation approach, putting fee at risk and tying corporate executive pay to contract performance. This business approach is complemented by a shared ownership approach to the development and production of the satellites. These innovative approaches give the government the flexibility to share system responsibility while motivating the contractor toward outstanding performance on the contract.

In the current acquisition environment of transforming from traditional to streamline acquisition approaches, there are many innovative strategies being proposed by organizations to incentivize contractor performance. The following discussion will look at the program approach and contract incentive structure for the National Polar-orbiting Operational Environmental Satellite System (NPOESS) program's Acquisition and Operations (A&O) contract. Figure 1 is a graphic representation of the NPOESS satellite system.

The A&O contract uses a dual approach, a Shared System Performance Responsibility (SSPR) approach to the program with an incentive structure that combines an award fee and mission success fee arrangement to include a cost mitigation approach, putting fee at risk

and tying corporate executive pay to contract performance. The clauses on contract and the comprehensive Award Fee and Mission Success Fee Plan allow for the contractor to receive interim award fee payments while working toward the full incentive fee. This innovative approach gives the government the flexibility to share system responsibility while motivating the contractor toward outstanding performance on the contract.

PROGRAMMATICS

The NPOESS program is a presidentially-directed tri-agency program chartered to converge the separate Commerce, Defense, and National Aeronautics and Space Administration (NASA) environmental



Figure 1. Photo of NPOESS

satellite programs into a single program. Figure 2 defines the Tri-Agency Relationship. A tri-agency Memorandum of Agreement (MOA) signed at the cabinet level directs the Department of Commerce (DOC) to be the lead agency for program management for the converged program,

directs the use of Department of Defense (DoD) acquisition procedures, and tasks NASA to provide technology support.

The NPOESS satellite is the next generation weather satellite with state-of-the-art technologies and the A&O contract is the innovative vehicle to accomplish

- Department of Commerce, through National Oceanic and Atmospheric Administration (NOAA), will have lead agency responsibility for the converged system. The Department of Commerce (DOC) will report to a tri-agency executive committee. NOAA will provide the System Program Director and an Integrated Program Office (IPO).
- National Aeronautics and Space Administration (NASA) will have lead agency responsibility to support the IPO in facilitating the development and insertion of new cost effective technologies that enhance the ability of the converged system to meet its operational requirements.
- Department of Defense will have lead agency responsibility to support the IPO in major system acquisitions necessary to the National Polar-orbiting Operational Environmental Satellite System (NPOESS) program.

Figure 2. Tri-Agency Relationship

the successful development, production, and launch of these satellites. The NPOESS program integrates the capabilities and products provided by the DOC Polar-orbiting Operational Environmental Satellite (POES) Program, the DoD Defense Meteorological Satellite Program (DMSP), and the NASA long-term continuous climate record collection. This single converged system will satisfy the needs of defense, civil, commercial, and the scientific communities.

The program ended a Preliminary Design Risk Reduction (PDRR) phase with the award of the A&O contract. In addition, the NPOESS Integrated Program Office (IPO) conducted a Phase 0 development from early 1995 through December 1999 and has had a series of ongoing sensor development programs that started in 1997. The Phase 0 development and PDRR phases competitively awarded contracts for state-of-the-art sensor technology that would be used on the NPOESS satellite. The PDRR contractors were competitively down-selected to one contractor for completion of the engineering and development effort for each sensor. These sensor contracts were subsumed as sub-contracts by the A&O contract with a single prime contractor having overall system performance responsibility.

The Phase 0 development efforts were mainly cost-type risk reductions, and the PDRR contracts were a mix of fixed-price and cost-incentive line items accounting for the complexities and uncertainties of these efforts, which were not conducive to pre-negotiated-objective incentives. The program's award fee instrument for the PDRR efforts provides a level of flexibility and oversight, which is desirable given the developmental characteristics

of these acquisitions. Furthermore, the award fee process was established to have a significant impact toward motivating the contractor to perform exceptionally. All of these efforts were designed to reduce development risk during Engineering, Manufacturing, and Development (EMD). These efforts culminated with the completion of the Preliminary Design Review (PDR) for both satellite PDRR contracts and award of a single A&O contract.

CONTRACTUAL OVERVIEW

The NPOESS A&O contract has two unique features that bring substantial innovation to the acquisition process: (1) an innovative award fee plan that includes mission success fee arrangements, and (2) Shared System Performance Responsibilities. The EMD portion of the contract has a Cost-Plus-Award-Fee (CPAF) arrangement with base fee, award fees, and mission success fees; and the production portion has a Fixed-Price-Incentive (firm target) (FPIF) arrangement with award fees and mission success fees. These contract types were selected based on analysis of program risks.

Three types of fees exist in the EMD Phase. They are a base fee (2 percent of the estimated cost), an award fee (13 percent of the estimated cost), and a mission success fee (5 percent of the estimated cost). Whereas, in an FPIF arrangement, used in the production phase, there is a target profit at 10 percent of target cost of

“This single converged system NPOESS will satisfy the needs of defense, civil, commercial, and the scientific communities.”

each replenishment satellite, a 50-50-share ratio for overruns and underruns, and a ceiling price of 135 percent of target cost, award fee (5 percent of target cost), and mission success fee (5 percent of target cost).

The base fee under the EMD phase will be used to help the contractor provide some cash flow stability. The award fee for both the EMD phase and production efforts of the contract is intended to incentivize continuous contractor responsiveness to program priorities and place emphasis on quality processes.

The mission success fee criteria has been developed to reward the contractor for achieving specific, demonstrable program objectives that are critical program events

during the EMD phase of the contract, while the mission success fee criteria developed for the production FPIF incentive will incentivize the contractor to meet cost targets and specific program events.

Finally, a fee risk covenant clause is included in the contract. All the fee or profit earned in the EMD phase and production efforts is earned at risk. That is, fee is earned by and paid to the contractor during contract performance, but the government may recoup some fee/profit if the system (for the EMD effort) or the replenishment satellites (for the production effort) do not meet performance goals.

The A&O contract also has unique incentive clauses to address the following areas:

“All the fee or profit earned in the EMD phase and production efforts is earned at risk.”

1. **Shared System Performance Responsibility (SSPR).** The prime contractor is responsible for SSPR and undertaking all actions necessary for ensuring that the overall performance of the NPOESS satellites meets all requirements as described in the A&O contract. This concept will be discussed in depth below.
2. **Cost Mitigation Incentive.** A cost mitigation incentive is used to encourage the contractor to prepare and apply cost mitigation initiatives. The contract allows the contractor to submit cost mitigation incentive proposals for the government’s review and acceptance. Where an initiative results in real savings to the contract, the savings are shared between the parties.

For each production option on contract, the contractor proposed a firm target price, and the government will have the unilateral right to exercise the option at that price, at the appointed time. However, since this price will likely include some factor for risk that might not materialize by the time the option is exercised, the government wanted to incentivize the contractor to manage and reduce the risk to the government with an expectation of renegotiating a lower target price as reasonable. The cost mitigation concept is an improvement over value engineering for this program by giving better insight on *acquisition savings* and *collateral savings* than proposed by Federal Acquisition Regulation (FAR) 48. This incentive structure will be discussed in depth.

3. **Fee Risk Covenant.** Although the contractor may earn fee during the course of this contract, the award fees and mission success fees earned during the EMD phase of the contract are earned at risk. Similarly, the fixed-price-incentive profit (or fee), award fees, and mission success fees earned during the production efforts on each replenishment satellite are also earned at risk. This means that although the contractor has possession and use of earned fee, to retain possession of the fee it must produce a system that provides useful service over the satellite's life. This incentive structure will be discussed below.

4. **Performance Inputs to Senior Executive Compensation.** This clause is an effort to decrease cost overruns on major contracts, "which typically run 18 percent over budget — costs that the Defense Department pays for" (Merle, 2002, p. E5). This contract is the first to use this new Air Force initiative. "The provision in the contract won't force executives to take a pay cut, but requires TRW's (acquired by Northrop Grumman on December 12, 2002) board to consider contract performance when setting top executives' salaries and bonuses" (Merle, 2002, p. E5). In essence, the clause in the NPOESS A&O contract would require TRW to present to the corporate board on a semi-annual basis information about Northrop Grumman's performance on the NPOESS A&O contract. According to the *Washington Post*, "the Air Force is the only part of the Pentagon to propose linking performance to executive pay" (Merle, 2002, p. E5).

This innovative clause is one part of the incentive structure of the NPOESS A&O contract aimed at increasing the contractor's accountability for contract performance.

5. **Base Fee.** A special clause under section B includes a provision of a base fee as an incentive to the contractor. The contractor may invoice monthly for an amount equal to one twelfth of that fiscal year's base fee amount.

SHARED SYSTEM PERFORMANCE RESPONSIBILITY

The key to the successful business, programmatic, and contractual relationship under the NPOESS A&O contract is SSPR. The innovative concept and the centerpiece to the A&O contract is the SSPR clause. The SSPR clause states for performance responsibility, "The contractor shall have SSPR for the entire NPOESS (NPOESS A&O Contract, 2002)." SSPR means that the contractor is responsible for undertaking any and all actions necessary for ensuring that the overall performance of NPOESS meets all contract requirements. For NPOESS, SSPR includes integration of all segments, systems, subsystems, and components whether furnished by the government, identified and directed by the government, managed by the government

"The key to the successful business, programmatic, and contractual relationship under the NPOESS A&O contract is Shared System Performance Responsibility."

or its designated agent, or commercially acquired. Additionally, the contractor is responsible for ensuring that the NPOESS [satellite] is optimized for post-EMD production, deployment, and support (NPOESS A&O Contract, August 22, 2002, p. 28).¹

Integration responsibility under SSPR includes the monitoring of all associate contractor and government systems and infrastructure activities. Monitoring includes the timely notification and recommendation of mitigation efforts to the government for risks resulting from schedule, technical, or resource conflicts with these systems and infrastructure activities to ensure the contract schedule, NPOESS system specification, and integrated master plan requirements are met by the contractor. Under the SSPR clause:

The contractor accepts performance responsibility whether or not individual segments, systems, subsystems, or components are fabricated, manufactured, or assembled by the contractor, a subcontractor (notwithstanding that any such subcontractor may have been selected pursuant to any provision hereof), or furnished as government-furnished property (GFP). (NPOESS A&O Contract, August 22, 2002, p. 28)

The contractor is fully responsible for the integration of all systems, subsystems, and components whether GFP or commercially acquired, installed and integrated into the NPOESS system without any degradation of performance of that item or in the overall system performance, and all required inspection and

acceptance test procedures are accomplished and sufficient to meet specifications and performance requirements. The contractor's responsibility to install and integrate subsystems and components without degradation of performance is in addition to, and not in substitution of, its responsibility to insure that the total system will meet all requirements of the system specification.

The SSPR clause also includes provisions for an equitable adjustment if failures of any external systems or infrastructure requiring interface with the NPOESS satellite does not meet stated capabilities. This does not relieve the contractor of SSPR, as the contractor is required under the contract to avoid or mitigate any impacts to the NPOESS satellite to the maximum extent practicable. However, the SSPR clause does state:

The parties agree that equitable adjustments may be made to the cost, schedule, NPOESS contract system specification, fee criteria and other affected terms and conditions of the NPOESS contract for NPOESS impacts resulting from changes to external systems or infrastructures requiring interface with NPOESS capabilities. (NPOESS A&O Contract, August 22, 2002, p.28)

The basic concept of total system performance responsibility is met through a shared ownership approach. SSPR does not eliminate government oversight of key important parameters, or cost and schedule issues. The government continues to have successful insight into the contractor's operations while maintaining the critical oversight

of program issues. The innovation of SSPR, having open communication to facilitate insight into the program's decision making, and an integrated management framework to improve visibility, has reengineered how the government views total system performance responsibility. The NPOESS programmatic and business arrangement adapts to the changing acquisition environment and institutes SSPR as a means of establishing a government and contractor partnership that reflects the government's expectations with significant incentives focused on the highest program risks to create a win-win situation.

SHARED OWNERSHIP CLAUSE

The contractor accepts SSPR through the life of the contract. To complement the SSPR clause² is a shared ownership clause that defines the SSPR relationship more fully.

With the relationship under the SSPR clause established above, the NPOESS program office and the contractor have adopted the concept of shared ownership — a relationship between government and industry where risk and returns are shared. This management approach depends upon highly integrated management teams to ensure adequate government insight and oversight while maintaining SSPR by industry. This partnership is implemented through a shared ownership clause. The shared ownership clause states:

The foundation of the NPOESS acquisition strategy is based on three guiding principles: a solid

understanding of program business risks, awareness of industrial base concerns, and shared ownership. Even with award of the NPOESS A&O contract, these three principles will continue to exist and shall be encompassed by the concept of shared ownership. Shared ownership is defined as the integrated management framework between the IPO and SSPR contractor that provides the foundation for program performance consistent with these principles and the requirements of this contract. (NPOESS A&O Contract, August 22, 2002, p. 29)

The program office and the contractor work together under the basis of the clause to ensure teamwork, trust, open communications, and consultation with each other on program decisions that impact the team's ability to execute the program. The clause states that:

Contractor performance will be evaluated against the obligations set forth in this contract including modifications to this contract. Award fee or incentive fee evaluations will be made in accordance with the provisions of the contract. The IPO will conduct evaluations that reflect the effect of the government's actions on the performance of the integrated management team. (NPOESS A&O Contract, August 22, 2002, p. 29)

To facilitate the shared ownership concept through the life of the A&O contract, the program office and contractor will engage in a quarterly dialogue.

The purpose of this dialogue is to maintain executive focus on program performance and evaluate the IPO and contractor team's effectiveness in achieving the desired program results. At the close of each government fiscal year quarter, the IPO and contractor program directors jointly prepare an agenda for executive dialogue to be conducted by their respective executives (NPOESS A&O Contract, 2002, p. 29).

The A&O contract has the highest visibility within the contractor's organization to facilitate these discussions and relationships. As mentioned above, there is also executive pay tied to the successful contractor performance.

"To facilitate the shared ownership concept through the life of the A&O contract, the program office and contractor will engage in a quarterly dialogue."

This total package of incentives assists with the complete understanding of the SSPR concept under the NPOESS A&O contract.

In addition, there are Integrated Product Team (IPT) relationships addressed under the concept of shared ownership. Under the shared ownership clause, "The contractor shall invite the IPO to assign government officials (or supporting Federally Funded Research and Development Center [FFRDC] employees) on the contractor's IPTs. The IPO may or may not make such assignments (NPOESS A&O Contract, August 22, 2002, p. 29)." Where these assignments are made, they are for the purpose of providing visibility into the contractor's performance and progress, and insight to the contractor from the government. The clause goes on to say,

[G]overnment officials (or supporting FFRDC employees) do not chair IPTs, and the presence and participation of government officials on an IPT does not indicate government acceptance or concurrence on any matter presented to the IPT. Government participation does not in any way relieve the contractor of responsibility for total system performance under this contract. (NPOESS A&O Contract, August 22, 2002, p. 29)

[Also, the] Contracting officer shall be the only individual authorized to redirect the effort or in any way modify any terms of this contract. The contractor shall not rely on any direction or instruction from any other government team member that is contrary to the contract or that increases or decreases the scope or estimated cost of the contract. Insight and information provided to the contractor by other members of the government team is provided for the contractor's benefit and use as it sees fit to accomplish its total system performance responsibilities under this contract. (NPOESS A&O Contract, August 22, 2002, p. 29)

The NPOESS program provides an opportunity to redefine how government and industry cooperate to procure and deliver goods and services. Shared ownership offers the potential to harness the efficiency of commercial practices to significantly reduce the cost of major system acquisitions. The basis of shared ownership, as stated above, allows IPO participation in

IPTs for visibility and insight into the contractor's performance and progress. However, this participation does not relieve the contractor of overall system performance. In an effort to promote better management of this tri-agency program, in conjunction with motivating the contractor's performance, the concept of SSPR and shared ownership was developed to improve communication between the contractor and the government. This improved management concept will assist in managing the design and production of the next generation weather satellites.

INNOVATIVE AWARD FEE PLAN³

INTERIM AWARD FEE PAYMENT AND ADJUSTMENT

There are three areas that encompass award fee: (1) interim award fee payments, (2) mission success incentives, and (3) fee at risk. Ancillary to this incentive structure is a cost mitigation incentive that is also key to motivating the contractor to reduce costs. For the interim award fee payments, the government *may* make monthly interim award fee payments to the contractor. These fee payments shall not exceed 80 percent of the award fee amount available for each evaluation period, and are prorated on a monthly basis. The determination and the methodology for determining the amount of award fee billable are unilateral decisions made solely at the discretion of the government based on contractor performance. Adjustment of the interim award fee payments, to reflect and account for the actual award fee earned and awarded for the evaluation period, has an elaborate mechanism for fairness of the award fee process.⁴

If the cumulative amount of interim award fee payments made during an evaluation period is less than the total award fee determined to have been earned or awarded for that period, the contractor is required to submit a separate invoice for the additional amount and the government will pay the balance of the award fee earned under the terms of the award fee clause.⁵

If, for any reason, the cumulative amount of interim award fee payments made during an evaluation period exceeds the total award fee determined by the government to have been earned or awarded for that period, the government shall deduct or offset the overpayment from subsequent fee and, if necessary, costs incurred. To assist the government in this regard, the contractor is required to reflect such adjustments on subsequent invoices. For purposes of FAR clause 52.232-17, *interest*, the due date for any refund to be made by the contractor is the date of the first written demand for payment. This interim award fee payment process complements the incentive fee arrangement on contract.

Industry stressed the importance of two financial elements when developing the strategy for the A&O contract: profit and cash flow. Several contracts within the Air Force have used the interim award fee payments to improve the contractor's cash flow, foster a healthy relationship between the government and industry, and further the benefits of the award fee incentive. The intent of the interim award fee payment business arrangement was to motivate contractors to perform well and gain

“[T]he government *may* make monthly interim award fee payments to the contractor.”

momentum in the initial award fee period, allow heightened responsiveness to program areas of interest and concern, provide contractors with reasonable cash flow on a major systems acquisition, and leverage the overall award fee period incentive in terms of avoidance of the contractor having to repay the interim award fee with interest. This incentive seeks to motivate the contractor to effectively make business decisions, facilitate communication at all levels within the program,

“The controversy of interim award fee payments is the perceived statutory restrictions that advance payment of public monies is prohibited unless properly approved.”

and promote flexibility in the contractor’s internal incentive programs. The incentive looks to heightened awareness and responsiveness to problems, action plans, and to promote teamwork within the integrated product teams making them more effective through early detection rather than reactionary to program issues.

Cash flow concerns are mitigated by the interim payments and the government is fully protected by the Fee Determining Official (FDO) oversight of the process. The guidelines are clearly established in the award fee and mission success fee plan, and refunds are required if performance was not as favorable as determined during the period.

In the true sense of promoting acquisition reform within the acquisition community, the NPOESS program stepped out with its initiative to improve a recognized critical business arrangement by

providing interim award fee payments on the A&O contract.

The controversy of interim award fee payments is the perceived statutory restrictions that advance payment of public monies is prohibited unless properly approved. This prohibition is found at 31 United States Code section 3324 that states, “Except as provided in this section, a payment under a contract to provide a service or deliver an article for the United States government may not be more than the value of the service already provided or the article already delivered.” The basic meaning of the statute is that if the money has not been *earned*, it cannot be paid. The comptroller general has interpreted the statutory precursors (Section 3648, Revised Statutes, and 31 United States Code 529) to 31 United States Code 3324 as not preventing a partial payment in any case in which the amount of such payment has actually been earned by the contractor and the United States has received an equivalent therefore, i.e., corresponding benefit. (See, 1 Comptroller General 143, 145 [1921]; 47 Comptroller General 89 [1977]).

The interim award fee procedure under the A&O contract conforms to the comptroller general criteria because it allows the contractor to bill periodically for an established percentage of available award fee during each evaluation period. The point that the payment was “actually earned by the contractor” is pertinent here. It is reasonable to view award fee as earned by the contractor daily, the precise amount of which is not determined until the end of the period. The award fee is not determined daily, but over a greater period of time, to make reasonable administration possible. The A&O contract

uses the following logic for their interim award fee approach; first, the contractor has performed and can therefore be considered to have earned some portion of profit or fee. Then second, final pricing straightens out any under or overages.

The interim award fee payment is authorized only after an assessment by the FDO that the contractor's performance warrants interim payments. The historical thinking as to why award fee could not be the subject of some type of interim billing related to the need for, and finality of the FDO's decision. As long as the FDO's ability to make an independent decision is preserved and the contractor accepts the fact that it might end up repaying some amount based on the FDO's decision, there is no reason why the same logic as that supporting interim billing of other fees would not apply. Any overpayment or underpayment will be rectified after the FDO's independent decision. There is no precedent that would make repayment under the A&O contract any more problematic than correction of an administrative overpayment or erroneous payment.

The award fee and mission success fee plan sets forth the criteria for interim award fee payments as discussed above. Interim award fee is predicated upon contractor performance. Interim award fee provides quantifiable time value of money advantages to the contractor. However, it should be noted that the NPOESS program uses the interim award fee provisions judiciously with consideration given for unusual cash flow concerns from the contractor, the length of the award fee periods, and the expected benefits to the acquisition.

In summary, the NPOESS program's philosophy holds that contractors are earning award fee throughout the award fee period. Paying a percentage of the fee on their regular billing cycle at a rate that is unlikely to result in overpayment would not constitute an advance payment. In the unlikely, unintended event the contractor is paid at a rate ultimately determined to exceed its entitlement; the difference could be recouped as an overpayment or erroneous payment. The award fee and mission success fee plan was drafted to maximize contractor cash flow, government obligation rates while minimizing government resources of administration, and odds of overpayment.

The interim award fee payment helps the contractor offset cash flow problems associated with performing this major multi-billion dollar program. The concern about cash flow was very important to the program office based on input from industry and consideration of other major satellite program's histories of cost overruns. This advantageous incentive structure allows the contractor to focus more on achieving the program elements than cash flow issues and payment procedures. By adopting this incentive structure, the intent was to maintain a healthy contractor relationship and incentivize the contractor to focus on contract performance for developing and producing the next generation of weather satellites.

"Cash flow concerns are mitigated by the interim payments and the government is fully protected by the Fee Determining Official (FDO) oversight of the process."

AWARD FEE AND MISSION SUCCESS FEE PLAN STRUCTURE

The comprehensive award fee and mission success fee plan is the basis for the government's award fee and mission success fee evaluation of the contractor's performance under the A&O contract for the EMD phase and production efforts. The award fee and mission success fee plan implements Air Force Materiel Command Federal Acquisition Regulation (AFMCFARS) clause 5352.216-9003, and together these two elements apply significantly new innovation to this contract.

This contract includes two types of incentive fees in the award fee and mission success fee plan. The first is award fee. The second is the mission success fee. Both are award fee constructions and the award fee and mission success fee plan covers the process for both fees. Award fee incentivizes the contractor's manage-

ment approaches, technical excellence, and cost control efforts on an on-going, period-by-period basis. Mission success fee incentivizes the contractor's realization of certain specific achievements that are critical to the success of the program.

The FDO solely determines the award fee and mission success fee amounts earned. These incentive structures give the government program director program flexibility and latitude to reward results during contract performance. Both award fee and mission success fee are further divided between the development and

production efforts of the contract. The development effort is the design, development and deployment of the system, including operations and support, through the declaration of Initial Operational Capacity (IOC). The production effort is for replenishment satellites for the program life. The award fee and mission success fee earned under this plan are earned at risk as described in the clause for fee risk covenant that will be discussed below.

The award fee plan is set up such that there are two separate authorities that authorize payments. The FDO is the government official (for the NPOESS Program the FDO is the program director) designated to determine the amount of award fee and mission success fee earned and payable to the contractor. The FDO also makes rollover decisions. Rollover of fee is the ability of the FDO to authorize unearned fee from the current fee period, whether award fee or mission success fee, into subsequent fee periods. The FDO may also authorize interim mission success fee payments. In contrast to the FDO responsibilities, the Award Fee Review Board (AFRB) chair may only authorize interim award fee payments in accordance with the "interim award fee payment and adjustment" clause and the award fee and mission success fee plan and section 7 of the award fee and mission success fee plan.

Determination of the earned award fee and mission success fee is inherently subjective. The contractor's assessment of its own performance, assessments produced by government performance monitors, the knowledge of the AFRB and FDO, and the criteria specified in the plan form the basis for the recommendations of the AFRB and determinations by the FDO.

"The interim award fee payment helps the contractor offset cash flow problems associated with performing this major multi-billion dollar program."

As discussed above, the incentive structure is set up so the AFRB chair may authorize interim payments of award fee, but it is only the FDO that may authorize one or more interim payments of mission success fee. The FDO may authorize interim mission success fee payments at the one, two, and three-year points, so long as the cumulative value of these interim payments do not exceed the mission success incentive percentages shown in the award fee and mission success fee plan. Interim mission success fee payments are like interim award fee payments and are subject to government recoupment if the final FDO fee determination for the mission success event is less than the amount authorized as interim fee.

The award fee and mission success fee plan also have a provision for rollover of award fee. The FDO may allow rollover of unearned award fee into subsequent award fee periods. The FDO may allow rollover of unearned mission success fee into the following events or into new events. The purpose of the interim payments and rollover of fees to subsequent periods is two-fold: (1) to allow the contractor the use of the fee, which is substantial for a major satellite program, during the period, and (2) to motivate the contractor's performance by allowing the contractor the opportunity to earn the unused fee in a subsequent period where it is in the government's best interest to do so based on program risks and objectives. While these incentives have been discussed and tested on numerous government contracts, the incentive structure under the NPOESS A&O contract formalizes the government's ability to use these incentives to motivate the contractor on a major satellite program.

This transformation for contract performance incentives is accomplished through a shift in how the organization processes award fees and mission success fees. The contract performance incentive transformation seeks to implement a new concept for award fee and mission success fee plans by using the interim payments of fees in conjunction with having those fees at risk to motivate performance. The transformation of award and mission success fees under this contract is a substantial improvement to the comprehensive and flexible fee system for achieving, sustaining, and maximizing business success. The key concepts for the success of the award fee and mission success plan are: (1) a close understanding and a clear definition of customer needs for the contractor, (2) the understanding of contractor cash flow problems based on prior history of other satellites and similar satellites program's histories through the review of data and statistical analysis to ensure, in the case of the NPOESS program, the best value for the government under this plan, with (3) diligent attention to managing, improving, and reinventing business practices to ensure a fair fee incentive structure. This award fee and mission success fee plan does not replace the traditional Air Force award fee or mission success fee plans but adds to these concepts to create further innovation in the award fee incentive structure.

“Rollover of fee is the ability of the FDO to authorize unearned fee from the current fee period, whether award fee or mission success fee, into subsequent fee periods.”

RISK FEE COVENANT CLAUSE

The risk fee covenant clause⁶ is associated with the incentive fees on contract. Although the contractor will earn incentive fees during the course of this contract, the award fee and mission success fee earned during the EMD phase of the contract are earned at risk. Similarly, the fixed-price-incentive profit, award fee, and mission success fee earned during the production efforts on each replenishment satellite are also

“The award fee and mission success fee plan also have a provision for rollover of award fee.”

earned at risk. This means the contractor has earned the fee; however, the contractor may have to return up to 100 percent of the fee if it fails to provide a system that provides useful service. Under this incentive structure, the FDO will make assessments

according to the *risk fee covenant* clause to retire fee at risk. The FDO will consider the inputs and suggestions of the contractor in the assessment, but the final decision is the FDO’s subjective decision.

For the EMD phase, the assessments are on overall system performance. There is a complicated formula for the three fee risk removal periods as stated in the contract clause,

The fee risk removal pool for this period [initial] is equal to the award fee and mission success fee on the EMD CLINs [Contract Line Item Number] earned to that point. Up to one tenth of this risk may be removed at each six-month risk retirement assessment based on the FDO’s subjective assessment of overall system performance during the

previous six-month period. The FDO’s assessment will be a numerical percentage between 100 percent and 0 percent, where 100 percent = completely successful and 0 percent = completely unsuccessful. The fee risk removed at that instance is a factor of the FDO’s assessment percentage against the one-tenth figure available at that decision.... The fee risk removal pool for this period [second] is equal to the EMD award fee and mission success fee earned to that point, less the fee risk removed during the initial period. This means any fee risk not removed in the initial phase may yet be removed during the second phase. Up to one-tenth of this risk may be removed at each six-month risk retirement assessment based on the FDO’s subjective assessment of overall system performance during the previous six-month period.

The fee risk removed at each assessment is factored in the same manner as during the initial period described above.... The final fee risk retirement period for the EMD phase starts with the second assessment after the IOC declaration and runs until all fee risk is removed. The fee risk removal pool for this period is equal to all the award fee and mission success fee earned during the EMD phase, less the fee risk removed during the initial and second periods. This means any fee risk not removed in the initial and second periods may yet be removed during the final phase. Up to one-tenth of this risk may be removed at each six-month risk retirement assessment based on the FDO’s subjective assessment of overall system performance during the previous six-month period. The fee risk removed at each assessment is factored

in the same manner as during the initial period.

Under the production phase for each production option, fee risk reduction is also a complicated formula, as stated in the contract:

The fee risk removal pool for this period [initial] is equal to the actual profit arrived at through application of the fixed-price-incentive arrangement, the award fee, and the mission success fee attributable to that satellite (however, it does not include the cost mitigation incentive, if any). Up to one-fourteenth of this risk may be removed at each six-month risk retirement assessment based on the FDO's subjective assessment of the satellite's success during the previous six-month period. The FDO's assessment will be a numerical percentage between 100 percent and 0 percent, where 100 percent = completely successful and 0 percent = completely unsuccessful. The fee risk removed at that instance is a factor of the FDO's assessment percentage against the one-fourteenth figure available at that assessment. ... The final fee risk retirement period starts with the assessment immediately following launch of the satellite and continues until all fee risk is removed. The fee risk removal pool for this period is unchanged from the initial period. Up to one-fourteenth of this risk may be removed at each six-month risk retirement assessment based on the FDO's subjective assessment of the satellite's success during the previous six-month period. The fee

risk removed at each assessment is factored in the same manner as during the initial period and if the FDO fails to make a fee risk reduction assessment in January or July of any year, the contractor may treat this as a favorable 100 percent success assessment for that period. (NPOESS A&O Contract, August 22, 2002)

That last statement is important because it puts the onus on the government to manage the contract and maintain adherence to the criteria for retiring the fee. This clause measures and analyzes the fee structures put at risk on this contract. Attachment 4 to the NPOESS Request For Proposal gave a detailed, quantitative analysis of the risk fee covenant clause as follows:

INITIAL FEE RISK REMOVAL PERIOD

Sample figures are shown below:

- \$50,000,000 award fee earned through December 2006.
- \$25,000,000 mission success fee earned through December 2006.

Step one — Determine the fee risk removal pool for the initial period. This is the sum of the award fee and mission success fee earned through the start of the period. In this example, it is \$75,000,000.

Step two — Determine the amount available for fee risk removal at each six-month decision. This is one-tenth of the fee risk removal pool. In this example, it is \$7,500,000.

Step three — The FDO performs an assessment at each six-month decision,

and the fee risk removed is the assessment factored against the amount available for risk removal at that decision. In this example, a 100 percent success assessment will retire risk on \$7,500,000; a 90 percent success assessment will retire risk on \$6,750,000; an 80 percent success assessment will retire risk on \$6,000,000, and so forth. An illustrative initial period is provided below in Figure 3, Fee Risk Removal — Example 1. This shows an example where the FDO made 100 percent success assessments in January 2007, January 2009, and July 2009, with 50 percent success assessments in every other period.

It should be noted that it is not possible to remove the risk on the entire risk removal pool during the initial period. The portion where the risk is not yet removed rolls over into the second fee risk removal period and becomes part of the second period.

SECOND FEE RISK REMOVAL PERIOD

Sample figures are shown following:

- \$72,500,000 award fee earned through December 2009 (includes

the \$50,000,000 earned in the initial period).

- \$37,500,000 mission success fee earned through December 2009 (includes the \$25,000,000 earned in the initial period).

Step one — Determine the fee risk removal pool for the second period. This is the sum of the award fee and mission success fee earned through the start of the period (including the fee earned during the initial period), less the fee risk removed during the initial period — in this example, the earned fee is \$110,000,000 and the fee risk removed during the initial period is \$33,750,000, so the fee risk removal pool for the second period is \$76,250,000.

Step two — Determine the amount available for fee risk removal at each six-month decision. This is one-tenth of the fee risk removal pool. In this example, it is \$7,625,000.

Step three — The FDO performs an assessment at each six-month decision, and the fee risk removed is the assessment factored against the amount available for risk removal at that decision. In this example, a 100 percent success assessment will retire

	Jan 2007	Jul 2007	Jan 2008	Jul 2008	Jan 2009	Jul 2009
Available:	\$7,500,000	\$7,500,000	\$7,500,000	\$7,500,000	\$7,500,000	\$7,500,000
FDO Assessment:	100%	50%	50%	50%	100%	100%
Fee Risk Removed:	\$7,500,000	\$3,750,000	\$3,750,000	\$3,750,000	\$7,500,000	\$7,500,000
Cumulative Removal:	\$7,500,000	\$11,250,000	\$15,000,000	\$18,750,000	\$26,250,000	\$33,750,000

Figure 3. Fee Risk Removal — Example 1

risk on \$7,625,000; a 90 percent success assessment will retire risk on \$6,862,500; an 80 percent success assessment will retire risk on \$6,100,000, and so forth. An illustrative second period is provided below in Figure 4. This shows an example where the FDO made 100 percent success assessments in January 2007, January 2009, and July 2009, with 80 percent success assessments in every other period.

It should be noted that this example presumes IOC in September 2011, but it could occur earlier or later — in such a case, this period could have more or fewer decisions than illustrated here.

FINAL FEE RISK REMOVAL PERIOD

Sample figures are shown below:

- \$100,000,000 award fee earned through December 2009 (includes the \$72,500,000 earned in the initial and second periods).
- \$50,000,000 mission success fee earned through December 2009 (includes the \$37,500,000 earned in the initial and second periods).

Step one — Determine the fee risk removal pool for the final period. This is the sum of the award fee and mission success fee earned through the start of the period (including the fee earned during the initial and second periods), less the fee risk removed during the initial and second periods. In this example, the earned fee is \$150,000,000 and the fee risk removed during the initial and second periods is \$67,300,000 (\$33,750,000 and \$33,550,000, respectively), so the fee risk removal pool for the second period is \$82,700,000.

Step two — Determine the amount available for fee risk removal at each six-month decision. This is one-tenth of the fee risk removal pool. In this example, it is \$8,270,000.

Step three — The FDO performs an assessment at each six-month decision, and the fee risk removed is the assessment factored against the amount available for risk removal at that decision. In this example, a 100 percent success assessment will retire risk on \$8,270,000; a 90 percent success assessment will retire risk on \$7,443,000; an 80 percent success assessment will retire risk on \$6,616,000, and

	Jan 2010	Jul 2010	Jan 2011	Jul 2011	Jan 2012
Available:	\$7,625,000	\$7,625,000	\$7,625,000	\$7,625,000	\$7,625,000
FDO Assessment:	100%	80%	80%	80%	100%
Fee Risk Removed:	\$7,625,000	\$6,100,000	\$6,100,000	\$6,100,000	\$7,625,000
Cumulative Removal:	\$7,625,000	\$13,725,000	\$19,825,000	\$25,925,000	\$33,550,000

Figure 4. Fee Risk Removal — Example 2

so forth. A table for the final period is not provided, but the mechanics are identical to those illustrated in the initial and second period examples above. The period will continue with six-month decisions until the entire fee at risk is retired.

The transformation of the contract performance incentive structure established by this clause looks at ways to incentivize the contractor to present an operational

“The final pillar for the incentive structure is an equally innovative element known as the cost mitigation incentive clause.”

system to the government as proposed at contract award. This clause gains significant benefits to both the government and contractor and is established using a fair incentive structure to retire fee at risk to motivate the contractor’s performance.

COST MITIGATION INCENTIVE CLAUSE

The final pillar for the incentive structure is an equally innovative element known as the cost mitigation incentive clause.⁷ The contractor is encouraged to submit cost reduction initiatives to the government for review and approval. For any initiative incorporated into the contract by modification, the contractor is entitled to share in the contract savings resulting from the implementation of the initiative. The clause requires that each cost mitigation initiative be significant in nature and be beyond the scope of the cost control expectations of the award fee incentive. Acceptance of any cost mitigation initiative is entirely at the government’s discretion. However, the contractor’s share of savings shall be the

cost mitigation incentive, should the government accept any cost mitigation proposals. The incentive is not considered fee for purposes of the award fee and mission success fee plan of this contract and is not subject to fee risk retirement.

The cost mitigation incentive only applies to the production effort of the A&O contract. For each production option on contract at the time of contract award, the contractor proposed a firm target price. The government will have the unilateral right to exercise the option at that price, at the appointed time. However, since the price at contract award will likely include some factor for risk that might not materialize during the performance of the contract, the government wanted to incentivize the contractor to manage and reduce the risk so that as the option exercise time approaches, the parties could agree that a lower target price as a cost and risk mitigation. Under this scenario, the contractor would, at its discretion, submit a proposal with a lower target price to renegotiate the option price(s). The proposal would include details of the assumptions and analysis upon which the new proposal is based for the government’s consideration. The government already has insight to the contractor’s cost and risk at contract award for the production options on contract; however, the new proposal would detail any risk reduction activities and cost mitigation to the production option(s).

After a comprehensive review by the government, the parties may agree to modify the contract to reflect the new lower target price. The terms and conditions of the option under renegotiation would remain unchanged with the contractor’s incentive being that if the government concurs with the proposal, the

contractor receives 50 percent of the difference between the original option target price and the new lower target price. The government still has the ability to exercise the current option on contract at the agreed upon price.

Under the scenario where the current option is exercised without any cost mitigation, and the contractor reduces cost, the contractor still has the share ratio to net profit for the cost mitigation efforts. The key to the cost mitigation incentive is timing of receiving the profit and cash flow. If the contractor submits a cost mitigation proposal and the government accepts the downward revision, the contractor receives the incentive at exercise of option instead of after performance. There is also an immediate savings to the government since obligations would be reduced by the incentive amount. If the contractor eventually overruns, the ceiling price and share ratio are applied for reduced costs and profit as applicable to the option pricing.

The cost mitigation incentive clause complements the award fee and mission success fee plan to form a solid incentive fee structure for the contract. While the cost mitigation incentive clause seems like a revised value-engineering clause, in essence cost mitigation incentives reinvented the meaning of value engineering for this program by giving better insight on *acquisition savings* and *collateral savings* than proposed by FAR 48. The acquisition savings for this contract are under the production options, giving an immediate or instant contract savings over current units and potential future production units if the proposal is accepted. This immediate savings is tangible and seen in the reduction of option prices; where in the traditional value engineering proposal, the savings are

less tangible because of the formula and allowable costs for value engineering savings. By eliminating the complex formulas and transforming the traditional value engineering process into a new business process, the program office has in fact changed the way the government formulates a savings under the A&O contract. The savings is real and apparent.

The same holds true for collateral savings whereby costs of operation, maintenance, logistic support, or government-furnished property are reduced by the option price reduction without a reduction in scope of the option. The intentions of this incentive are to enable the government to obtain insight into the contractor's pricing of its FPIF production options, including the risk assumptions built into the target price. This process should also incentivize the contractor to manage these risks before option exercise and take mitigating steps to reduce the target cost of the option before it is exercised. By using these innovative concepts to incentivize the contractor, the NPOESS program is transforming the way the Air Force and the DOC conduct contract administration. These innovations look to increase productivity, decrease cost overruns, and provide the government with a best value satellite system for the next generation of weather satellites.

“The key to the cost mitigation incentive is timing of receiving the profit and cash flow.”

SUMMARY

NPOESS has initiated an innovative transformation from the traditional contract

performance incentive structure to motivate contractor performance. The program has reinvented the award fee and mission success fee plans into a comprehensive incentive package with interim payment methods using global contracting concepts tailored to individual use in the NPOESS' acquisition strategy. The A&O contract for the development and production of the next generation weather satellites has adapted to the current acquisition environment with select innovations in business practices such as establishing a base fee, interim award fee payments, cost mitigation incentives, and risk reduction incentives to reduce cost overruns and

"The cost mitigation incentive clause complements the award fee and mission success fee plan to form a solid incentive fee structure for the contract."

increase productivity, with an SSPR and shared ownership concepts for technical competencies. The incentive structure under the A&O contract is a comprehensive and flexible system for achieving, sustaining, and maximizing programmatic, business, and acquisition success.

The A&O contract offers industry the opportunity to realize commercial rates of return. The EMD portion of the contract will use cost reimbursement line item structure with a base fee to ensure adequate cash flow for successful program execution; an award fee that provides substantial returns for successful technical, schedule and cost management; and mission success fees awardable on achievement of significant program events and on-orbit performance. The production portion of the contract will use a fixed price incentive line item structure.

During production, cost control is incentivized through a 50/50 share ration, successful technical and schedule management is recognized through an award fee, and system reliability and durability rewarded through on orbit incentives.

The SSPR approach reinvents the total system performance responsibility concept to a shared ownership concept to increase productivity and bring a *quality first* approach to the technical and business arrangements of the acquisition process. The NPOESS program provides an opportunity to redefine how government and industry cooperate to procure and deliver goods and services. The NPOESS program office has created the concept of shared ownership, a relationship between government and industry where risk and returns are shared. This management approach depends upon highly integrated management teams to ensure adequate government insight and oversight while maintaining total system responsibility by industry. Shared ownership offers the potential to harness the efficiency of commercial practices to significantly reduce the cost of major system acquisitions.

By looking at new ways of doing business in the government, many organizations develop success stories; however, the NPOESS program has set up such a new and innovative incentive structure that it is revolutionizing the way the DoD and DOC approach future acquisitions.

The many long hours developing these approaches cannot go unspoken without mentioning the consent and advice the program received from key procurement officials within the Air Force, DoD, NASA, and DOC. It is

The Transformation of Contract Incentive Structures

through teamwork and partnership among government agencies that NPOESS can truly be counted a success. The future of weather forecasting is counting on the success of the NPOESS

A&O contract and the innovative incentive structures on contract to implement the state-of-the-art technologies for weather forecasting in the new millennium.



Robert Graham is the branch chief and contracting officer for the National Polar-orbiting Operational Environmental Satellite System (NPOESS) Program Office at the Space and Missile Systems Center, Los Angeles Air Force Base. Graham was a key Department of Defense (DoD) acquisition representative of the \$4.5 billion Acquisition and Operations (A&O) contract and the \$300 million Configuration Management Information Systems (CMIS) sensor contract source selections. He is a Certified Professional Contracts Manager (CPCM) with National Contract Management Association (NCMA) and is a graduate of both the Air Command and Staff College and the Naval War College.

(E-mail address: robertg.graham@losangeles.af.mil)

ACRONYMS

- A&O** – Acquisition and Operations
- AFMCFAR** – Air Force Materiel Command Federal Acquisition Regulation
- AFRB** – Award Fee Review Board
- CLIN** – Contract Line Item Number
- CMIS** – Configuration Management Information Systems
- CPAF** – Cost-Plus-Award-Fee
- CPCM** – Certified Professional Contracts Manager
- DOC** – Department of Commerce
- DoD** – Department of Defense
- DMSP** – Defense Meteorological Satellite Program
- EMD** – Engineering, Manufacturing, and Development
- FAR** – Federal Acquisition Regulation
- FDO** – Fee Determining Official
- FFRDC** – Federally Funded Research and Development Center
- FPIF** – Fixed-Price-Incentive-(Firm Target)
- GFP** – Government-Furnished Property
- IOC** – Initial Operational Capacity
- IPO** – Integrated Program Office
- IPT** – Integrated Product Teams
- MOA** – Memorandum of Agreement
- NASA** – National Aeronautics and Space Administration
- NCMA** – National Contract Management Association
- NOAA** – National Oceanic and Atmospheric Administration
- NPOESS** – National Polar-orbiting Operational Environmental Satellite System
- PDR** – Preliminary Design Review

PDRR – Preliminary Design Risk Reduction

POES – Polar-orbiting Operational Environmental Satellite

SSPR – Shared System Performance Responsibility

ENDNOTES

1. NPOESS Acquisition and Operations (A&O) Contract. (August 22, 2002). Special Contract Requirements Clause H-500, “Shared System Performance Responsibility (January 2002).”
2. NPOESS Acquisition and Operations (A&O) Contract. (August 22, 2002). Special Contract Requirements Clause H-503, “Shared Ownership (January 2002).”
3. NPOESS Acquisition and Operations (A&O) Contract. (August 22, 2002). Award Fee and Mission Success Fee Plan.
4. NPOESS Acquisition and Operations (A&O) Contract. (August 22, 2002). Special Contract Requirements Clause H-519, “Interim Award Fee Payment and Adjustment (January 2002).”
5. The Award Fee Clause is AFMCFAR Clause 5352.216-9003.
6. NPOESS Acquisition and Operations (A&O) Contract. (August 22, 2002). Special Contract Requirements Clause H-521, “Fee Risk Covenant (January 2002).”
7. NPOESS Acquisition and Operations (A&O) Contract. (August 22, 2002). Special Contract Requirements Clause H-524, “Cost Mitigation Incentive (January 2002).”

REFERENCE

Merle R. (2002, September 25). Air Force tries to use executive pay as contractor incentive. *The Washington Post*, p. E5.