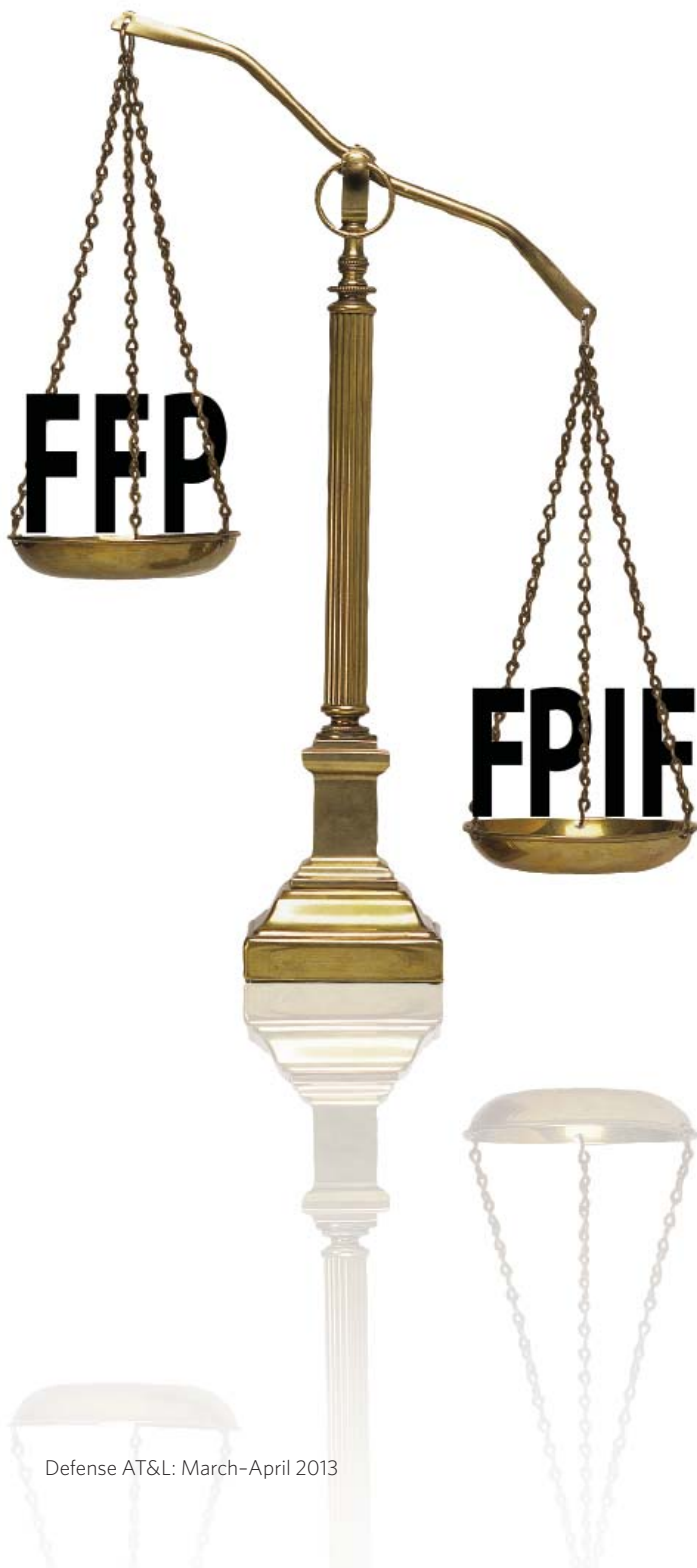




## Use of Fixed-Price Incentive Firm (FPIF) Contracts in Development and Production

Frank Kendall



The choice of appropriate contract types is very situationally dependent, and a number of factors must be taken into account to determine the best contract type to use. From the perspective of both industry and the government, it makes a good deal of difference whether the Defense Department asks for Cost type, Fixed-Price Incentive (FPI), or Firm Fixed Price (FFP) proposals. In the original Better Buying Power (BBP) initiatives, although Dr. Carter and I encouraged greater use of FPI, we also included the caveat “where appropriate.” BBP 2.0 modifies this guidance to stress using appropriate contract types while continuing to encourage use of FPI for early production.

I would like to be more explicit about what “appropriate” means and how I believe we should analyze a given situation. In particular, I will address both Engineering and Manufacturing Development (EMD) and production situations.

During the early 1990s, I had a lot of painful experience with fixed-price development. The A-12 was a notorious case that ended badly. On another fixed-price major program in development during the same timeframe, the program manager was relieved for finding creative but illegal ways to provide cash to the prime contractor who lacked the resources to complete development. FFP development tends to create situations where neither the government nor the contractor has the flexibility needed to make adjustments as they learn more about what is feasible and affordable as well as what needs to be done to achieve a design that meets requirements during a product’s design and testing phases. Any fixed-price contract is basically a government “hands off” contract. In simplistic terms, the government sets the requirements and the price and waits for delivery of a specification-compliant product. While we can get reports and track progress, we have very

little flexibility to respond to cases where the contract requirements may be particularly difficult to achieve.

Most sophisticated weapons systems development programs deal with maturing designs and challenging integration problems. As a result, the government often will and should provide technical guidance and make tradeoff decisions during development. In EMD, we often do want to work closely with the prime contractor to achieve the best outcome for the government. While it certainly is possible to negotiate changes in a fixed-price contract environment, the nature of development is such that informed decisions need to be made quickly and in close cooperation with our industry partners. The focus in a fixed-price environment is squarely on the financial aspects of the contract structure and not on flexibly balancing financial and technical outcomes.

Risk is inherent in development, particularly for systems that push the state of the art. Even with strong risk reduction measures in Technology Demonstration phases and with competitive risk reduction prototypes, there still is often a good deal of risk in EMD. By going to EMD contract award after Preliminary Design Review, as we routinely do now, we have partially reduced the risks—but again, only partially. Our average EMD program for a Major Defense Acquisition Program (MDAP) over the last 20 years has overrun by a little under 30 percent. Industry can only bear so much of that risk, and in a government fixed-price contract, industry cannot just stop work and walk away. A commercial firm doing development of a product on its own nickel has complete freedom to stop work whenever the business case changes. Firms on government contracts do not, at least not without some liability.

For good reasons, I am conservative about the use of fixed-price development, but it is appropriate in some cases. Here are the considerations I look for before I will approve a fixed-price or FPI EMD program:

- **Firm requirements:** Cost vs. performance trades are essentially complete. In essence, we have a very clear understanding of what we want the contractor to build, and we are confident that the conditions exist to permit the design of an affordable product that the user will be able to afford and is committed to acquiring.
- **Low technical risk:** Design content is established and the components are mature technologies. There are no significant unresolved design issues, no major integration risk, the external interfaces are well defined, and no serious risk exists of unknowns surfacing in developmental testing and causing major redesign.

- **Qualified suppliers:** Bidders will be firms that have experience with this kind of product and can be expected to bid rationally and perform to plan.
- **Financial capacity to absorb overruns:** Sometimes overruns will happen despite everyone's best efforts. We still want responsible contractors who have the capacity to continue and deliver the product despite potential overruns that may not have been foreseeable.
- **Motivation to continue:** A business case must be provided via a prospective reasonable return from production that will motivate suppliers to continue performance in the event of an unanticipated overrun. It is unrealistic to believe contractors will simply accept large losses. They will not.

As an example, the Air Force Tanker program met all of these criteria.

Early or low-rate production have similar considerations, but here is where greater use of FPI contract vehicles makes the most sense as an alternative to cost-plus vehicles. Over the last 20 years, the average overrun for MDAPs in early production has been a little less than 10 percent. This is a reasonable risk level to share with industry in an FPI contract arrangement. I expect our program managers and contracting officers to have

## MDAP/MAIS Program Manager Changes

With the assistance of the Office of the Secretary of Defense, *Defense AT&L* magazine publishes the names of incoming and outgoing program managers for major defense acquisition programs (MDAPs) and major automated information system (MAIS) programs. This announcement lists all such changes of leadership, for both civilian and military program managers.

### *U.S. Navy*

**Capt. Scott D. Porter** assumed the position of program manager of the Advanced Tactical Aircraft Protection Systems Program, (PMA-272), PEO(T) on Dec. 1, 2012.

**Capt. (select) Thomas J. Anderson** became program manager of the Littoral Combat Ship Program (PMS-501), PEO(LCS) on Nov. 16, 2012.

**Ms. Valerie Carpenter** became program manager of Navy Enterprise Resource Planning (ERP), (PMW-220), PEO(EIS) on Nov. 15, 2012.



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meaningful, detailed discussions about the risks in contract performance over target cost. Determining a ceiling price is all about the fair recognition of risk in contract performance. Unlike an FFP contract, there needs to be a fair sharing of the risk—and the rewards—of performance.

To be comfortable with a fixed-price vehicle for early production, I would look for the following:

- Firm requirements (as explained)
- Design proven through developmental testing
- Established manufacturing processes
- Qualified suppliers
- Suppliers with the resources to absorb some degree of overrun
- Adequate business case for suppliers to continue work if they get in trouble

It should be noted that some of the items on this list reflect the “responsibility determination” that should be part of every contract we sign. However, the decision I am talking about here is not the decision to award a contract or accept a proposal for consideration but rather the decision about what type of contract to employ.

The above apply to FPIF procurements for which proposals are solicited at or near the end of EMD after we have been through Critical Design Review, built production representative prototypes, and completed some significant fraction of developmental test (DT). This is very different from a case in which we are only at Milestone (MS) B when we ask for low-rate initial production (LRIP) options. In that case, designs are not usually firmly established, production representative prototypes have not been built, and DT has not yet been done. So when we ask for FPIF proposals as options at MS B, we have already failed criterion 2 at least. In those cases, we ought to have a low risk of completing EMD without major design changes that would affect cost. Again, the Air Force Tanker program serves as an example. Another example where this can be done is a Navy auxiliary, where the shipyards have a great deal of experience with similar designs and with the design process for that class of ships.

FPIF LRIP can have a number of advantages, including better insight into contractor costs and an opportunity to share in contractor cost reductions. While it is attractive to secure FPIF prices at the time we award EMD contracts, as we usually still have competition at that point, we need to balance the benefit with the risk. Optimism tends to prevail early in programs, both for government and industry, and we need to be realistic about the risks that remain before EMD has even begun. It also is an illusion to believe we can routinely transfer all the risk in our programs to industry. Industry has a finite capacity to absorb that risk and knows how to hire lawyers to help it avoid large losses.

We can and should increase the use of FPIF contracting, but we need to approach with some caution FPIF contracting for EMD and for options on LRIP lots that are still years away from execution. During the transition to production, after successful DT has established that the design is stable and that production processes are under control, FPIF becomes a very attractive bridge to an FFP contracting regime.

Finally, there also may be times during the mature production phase of a program when the use of FPI contracts would be preferred. Typically, mature production programs are well established in terms of requirements, design content, and production processes at both the prime contractor and subcontract level. This environment should provide for accurate pricing, and FFP contracts would seemingly be appropriate. However, if we have reasons to conclude there may be a poor correlation between negotiated and actual outcomes, the use of an FPI contract would be more appropriate. In that case, we would share the degree of uncertainty with the contractor.

There could be several reasons why the correlation between negotiated and actual outcomes may be poor—e.g., ineffective estimating techniques, unreliable actual cost predictions at either the prime and/or subcontract level, incomplete audit findings, or diminishing manufacturing sources for some components. In addition, there may be times (e.g., multiyear contracts) where the period of performance is long enough that it places too much uncertainty and risk on either party. The key is understanding the pricing environment. If we have well-prepared contractor/subcontractor proposals, an environment where we have a solid actual cost history, and we have done the necessary analysis to ensure we have the price right, the use of FFP contracts is fine. If the environment is uncertain, the use of an FPI contract may make sense.

Again, BBP 2.0 stresses use of the appropriate contract types. Unfortunately, sorting this out is not always easy. It is hoped that this discussion will be helpful as we all wrestle with the problem of getting the best answer to the question of what type of contract to use in a given situation, whether it is an MDAP or an Acquisition Category III product, and at any phase of the product life cycle. 