

# **Acquisition Risk Management Approaches Guide**



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## Modular Contracting

FAA should, to the maximum extent possible, break large acquisitions into smaller, more manageable segments or modules. Each module must be an economically and programmatically valuable (i.e., useful) segment. A module should include whatever design, development, prototyping, testing, and production are necessary to obtain the identified functionality. However, a module may be a phase such as Planning, or a part of a phase, such as Development and Selection of Prototypes. Each module should be fully funded. As technology advances and agency priorities change, the design of subsequent modules may incorporate these improvements. Modular contracting, therefore, is appropriate even in commercial or non-developmental item acquisitions. Although modular contracting is generally thought of in terms of contracts for information technology (the Clinger-Cohen Act of 1996 requires that IT contracts be completed within 18 months of the issuance of the solicitation, which almost demands modular contracting for IT), this concept is a best practice for other types of capital assets. This concept is also known as spiral development. In addition, in limited or full-scale development efforts, if program progress falls short of expectations, it usually is easier and less expensive to make adjustments using modular contracting. A modular approach allows FAA to attack risk incrementally, thereby making it easier to manage. Projects may include successive modules, where each module depends upon already completed modules. Projects may also be composed of several parallel modules, provided that, if one fails, the others will still provide a valuable service. The parameters of a module will vary depending upon the type of asset being acquired or the nature of the asset being developed. The following factors, however, should be considered:

- **Separability.** A module should be an economically and programmatically separable segment. The module should be fully funded, have substantial programmatic use that is not dependent on any subsequent module, and be capable of performing its principal functions even if no subsequent modules are acquired.
- **Interoperability.** Each module should comply with a common architecture or commercially acceptable technology standards. Increments should be compatible and capable of being integrated with other modules. By using common or commercially acceptable standards, agencies make competition for subsequent modules a more viable option. For IT acquisitions, modules should also conform to the agency's master information technology architecture regarding interoperability.
- **Performance requirements.** The performance requirement of each module should be consistent with the performance requirements of the completed, overall system and should address interface requirements with other increments.

In acquiring the first module, FAA should plan for the acquisition of subsequent modules. Contracts should be structured to ensure that FAA is not required to procure additional modules. The following list provides examples of contracting techniques that may be used to acquire subsequent modules:

□ **Include Modules in Initial Contract.** This technique is most appropriate when product integration may be a problem, subsequent modules can be clearly defined at contract inception, and options can be exercised shortly after contract award. If there is going to be other than a minimal amount of delay in awarding the subsequent modules, it may not be prudent to include subsequent modules in the initial contract, because agencies would want the flexibility of taking advantage of technology improvements or changes in agency priorities.

□ **New Solicitation.** FAA can issue a new solicitation and award a new contract for subsequent modules. This approach is most appropriate when integration will be relatively easy and there is a pool of contractors that could perform the work without a large capital investment.

□ **Task and Delivery Order Contracts.** Some agencies have awarded IDIQ contracts with task orders issued for each module. These contracts normally are issued because the agency has not defined the work except in broad terms. These contracts contain a high degree of risk as the subsequent task order statements of work can be highly influenced by the contractor and the negotiation for scope of work, cost, and schedule goals is done on a sole source basis. Where possible, the agency should enter into multiple award contracts to maintain effective competition throughout the acquisition.

To reduce the high risk in IDIQ contracts for major acquisitions, FAA should use competitive prototyping or define the first task order in the solicitation and conduct a full Baseline Review on the two most qualified offeror's proposals before awarding the contract and first task order. Either of these methods will maintain competition through a detailed review of the proposed solution and provide a clear set of risk-adjusted cost, schedule, and performance goals and a Performance Management Baseline (PMB) that both FAA and contractor believe can be achieved without major changes. The award of this competitive task order will provide the agency with realistic cost information that can be used as a basis to negotiate the follow-on sole source task orders.

□ **Single Source.** When the original contract does not provide for follow-on modules and it is determined that follow-on modules should be awarded to the original source, the agency may issue a single source award for subsequent modules to the supplier of a previous module. This approach is appropriate when the benefits of having the incumbent contractor continue the work outweigh the benefits of competition (e.g., contractor continuity is necessary to ensure good system integration). Pre-award Baseline Reviews should be conducted before the award of any single source contract to ensure the cost, schedule, and performance goals have been thoroughly reviewed and agreed to by both parties.

With modular contracting, agencies are better able to manage developmental risk. Accordingly, the agency is more likely to be able to use a firm fixed-price or fixed-price incentive contract for the acquisition of each module. Using a firm fixed-price contract is the preferred contracting method. Modules can often be acquired on a firm fixed-price basis when a large developmental program could not, because modules reduce the risk to cost, schedule, and performance goals

that a large developmental program would otherwise have. Modules also can limit FAA's exposure when contracting on a cost reimbursement basis because the task is smaller and more likely to be accomplished within goals by the contractor. In addition, the agency may terminate the acquisition with smaller sunk costs if it becomes apparent that the threshold goals will not be met. Modular contracting, especially when using an open architecture, can also increase the effective use of competition. The contract base for large development efforts tends to be limited to those large companies that have the Government as their major, if not only, buyer. By breaking the acquisition into smaller pieces, the agency can make better use of the Nation's integrated industrial base by making the competition more attractive to smaller firms as well as firms that do predominantly commercial work. This increases both the quantity and quality of the competition.

## Advisory Multi-Step Acquisition

Like modular contracting, a multi-step approach has advantages regardless of the amount of development necessary. In a multi-step approach, the agency asks for limited information in the first phase. The requested information typically consists of information about past performance and experience, a conceptual outline of the proposed technical approach (versus a particular technical solution), and a rough order of magnitude pricing. Detailed technical and cost proposals are not received in the first phase. After requesting and evaluating the limited information submitted by potential offerors in the first phase, the agency can then advise each potential offeror whether it is a realistic contender for award. In general, when the agency does issue the actual solicitation, in the second phase, all responsible sources, even those sources that participated in the first phase but were advised that they were unlikely to be realistic contenders, as well as sources who did not participate at all in the first phase, are allowed to submit proposals and have those proposals fully considered. A third step may be added to allow for a downselect to two offerors where a pre-award Baseline Review will be conducted on each proposal to finalize the cost, schedule, and performance baselines, complete the risk management plan, and select the best offeror for award of the contract. The type and amount of information the program office requests in the first-phase step depends on the type of acquisition. In commercial and non-developmental item acquisitions with limited or no development, the information requested in the first step can focus on past performance references and commercial catalogs. Such information would give the program office a good sense of which offerors have demonstrated their success in applying their capabilities on similar projects. Advising prospective offerors of their competitive viability during the first step should limit the number of full technical and cost proposals the initiative receives. Limiting the number of full proposals received should save valuable resources for both the agency and prospective contractors. Prospective offerors' up-front expenditures will be reduced, and they need not expend more resources until after they have been advised of their likelihood of being competitive for the award. A multi-step process may, therefore, encourage more participation by firms that have successfully performed in the private sector, but because of the high cost, have not previously chosen to compete for Government contracts.

Regardless of whether development is required, a multi-step approach allows the acquisition to benefit substantially from the efficient and effective communication between sources and agency personnel. These communications will foster the development of requirements and evaluation

criteria that allow the best fit between agency needs and marketplace capabilities. Sources that are advised, based on the first- step review, that they are strong competitors should be encouraged to participate in such a due diligence effort. As a general matter, however, because the interchange occurs before issuance of the solicitation for proposals in the second step, all interested sources may have the opportunity to participate at the discretion of the agency. The agency can restrict participation in the due diligence effort to those offerors selected in the first phase, making it even more beneficial.

Multi-step acquisition provides incentives to offerors to invest more of their own resources to perform due diligence to learn about agency needs and develop innovative high-value solutions. Once an offeror has been told that, based on the first-step review, it is a leading contender to receive the award, and it knows that only a limited number of other offerors are in that position, the offeror has a strong incentive to work with the agency to obtain good information about the agency's needs. Offerors will be able to assess well the gaps between the functionality and performance available using existing assets and the functionality and performance desired. There is also a strong incentive to understand what is expected by those who will have to use, maintain, and rely on the new system. This information and understanding can enhance substantially offerors' ability to submit high value proposals and avoid contract disputes.

It is not necessary in the multi-step process outlined above to include firm requirements or evaluation criteria for the second-step solicitation in the initial notice or before due diligence is complete. As a result, the dialogue between prospective offerors and agency personnel can contribute substantially to the development of requirements and evaluation criteria that yield very effective competition. The benefits of competition depend not only on the number of offers received, but also on how likely the offerors are to submit proposals that will meet the agency's needs and provide good value. It is better to receive three robust offers than ten mediocre ones. By accommodating and targeting marketplace capabilities that are suitable for meeting agency needs, the refined solicitation (that is produced by a multi-step approach) puts offerors in a good position to propose what the agency needs and wants and increases the probability of awarding a contract that represents the best value available in, or capable of being developed by, the marketplace.

Of course, if FAA believes it is appropriate (e.g., the development work will be substantial) to offer further incentives, FAA may award competing prototype contracts with limits on the total costs to be reimbursed by the Government. This type of contracting can be used if the agency decides a pre-award Baseline Review is necessary to establish a firm baseline with a high probability of achieving the cost, schedule, and performance goals for the contract or module before award to prevent the potential need to ask for a baseline change if this review is done after award.

The term "prototype" normally means a physical deliverable that can demonstrate actual performance characteristics. For long-duration contracts that include significant development, it may be impractical to proceed all the way through completion of a prototype. In lieu of a prototype, FAA may require an initial detailed design activity that is sufficient to demonstrate the adequacy of the proposed technical approach and enable the accurate estimation of the cost of development. There is no generally preferred contract pricing mechanism for a multi-step

acquisition. The pricing mechanism will depend on the type of acquisition. If the acquisition is for a commercial or non-developmental item or for a limited development effort, it should be a fixed-price effort; if, however, the acquisition is for a full-scale developmental system, a cost reimbursement contract may be necessary if the risk is too great for a fixed-price contract. For development efforts, however, thresholds should be established beyond which the project would not be cost-beneficial and should be considered for termination.

## Competitive Prototyping

To mitigate the risk of full-scale or limited development, FAA may use competitive prototyping. In competitive prototyping, contractors offering alternative system design concepts are selected to develop prototypes of their products. In acquisitions with limited development, the development work can be completed as part of the prototyping effort. When limited development is done as part of the prototyping effort, the contractor would be ready to move to full-scale production after satisfactorily completing the prototype. Whether full-scale or limited development is contemplated, both contractors and the agency can use the competitive prototyping phase to exchange information. This opportunity gives the contractor a better idea of what the end-users need. Similarly, it allows the agency to learn what the marketplace can provide. As is the case with multi-step acquisitions generally, continuing needs definition and market research in a due diligence effort—conducted with those sources selected to develop prototypes—allows for an effective and efficient information exchange. This exchange will foster achieving the best fit between agency needs and market capabilities. Prototyping also allows FAA to obtain enough information about the design and production to be able to determine the product's subsequent affordability. A goal of any prototyping and development effort is to get the project developed to the point that the agency can use firm fixed-price contract for production and/or implementation.

If full-scale development is contemplated, competitive prototyping can be used to verify that the chosen concepts are sound, to perform in an operational environment, and to provide a basis of selection of the system design concept to be continued into full-scale development, before the agency commits to large scale funding. Prototypes may range from a principal end item or critical subsystem, to a limited and less than complete development model. It is anticipated that the winning concept and contractor of the competitive prototyping evaluation will then move into full-scale development and initial production. In awarding the prototype contracts, agencies may provide different funding amounts to each contractor depending on several circumstances (e.g., particular design, the amount sought, and the concept's potential).

When using competitive prototyping in advance of full-scale development, the competitive prototyping contracts should provide for contractors to develop and submit proposals for full-scale development and initial production by the conclusion of the prototyping effort. When the agency is doing development after the prototyping effort, agencies can use fixed-price contracts in which the performance standards may vary to contain the development effort. If only limited development is necessary, a commercial style approach can be used in which the development can be accomplished as part of a fixed-price prototype contract. This approach contains the development risk and is most appropriate in cases where the development is an extension of a

commercial item or otherwise existing technology (e.g., for products that can be produced on a flexible manufacturing line).

Awarding at least two combined prototyping and development contracts provide a strong incentive for contractors to devise the highest value performance-cost tradeoff. In some cases, the contractor may choose to invest some of its own resources in development, particularly if the item has commercial as well as Government use. As when prototyping is done in advance of development, agencies may provide different amounts of funding to each contractor. As an alternative to the award of multiple combined prototype and development contracts (i.e., when at least two awards are not feasible) an agency can consider whether an upgrade of the current system (presumably requiring no more than limited development) is a realistic option that would provide competitive pressure.

A major benefit of the commercial style approach that combines development with prototyping under competitively awarded fixed price contracts is that it can avoid any need for the submission of certified cost data or compliance with Government cost accounting standards for the purposes of determining the initial price or supporting contract payments. Firms doing business in the commercial market view government demands for the submission of certified cost data, compliance with Government accounting standards and the associated burdens and risks to be among the most significant barriers to their participation in government contracting. The commercial style approach, by avoiding the need for such data and accounting, provides increased access to the Nation's integrated industrial base and the commercial assembly lines, technology, components, and procedures that can serve as the basis for achieving an agency's functional and performance objectives with only limited development.