

instructions to offerors that are part of the RFP. The solicitation will also be reviewed by legal prior to release.

The evaluation phase begins when offerors submit proposals to the solicitation. In order to determine which proposal will provide the government with the best quality product or service at a fair and reasonable price or cost, both the offerors' technical and business proposals are reviewed. As the technical experts, the program office reviews and evaluates the technical proposal (Centers for Disease Control, 2015). Typically, for large and complex acquisitions³, a cost or pricing analyst will review the cost elements of the business proposal in accordance with the evaluation criteria established during the solicitation phase and in accordance with the FAR. If necessary, negotiations are held between offerors found to be in the competitive range once the reviews are completed (Centers for Disease Control, 2015).

Contract award occurs after all offers have been evaluated, any negotiations required have been concluded, and the government has determined a successful offeror. The contract specialist prepares a final award determination, which is approved by the contracting officer. All other offerors are formally notified of the award and debriefing sessions are conducted by the contracting specialist, if requested by the offeror (Centers for Disease Control, 2015).

The final phase is the administration phase, which begins directly after the award of the contract. During this phase, it is critical that work is conducted in accordance with the Statement of Work (SOW) and is monitored by the contract's technical representative in order to determine the contractor's technical compliance. However, the technical representative does not have the authority to make any material changes to the contract; only the contracting officer may authorize changes to the contract. Additionally, the contract specialist maintains a contract file that tracks all correspondence or actions relating to the contract; which includes final close out or termination documents (Centers for Disease Control, 2015). Furthermore, when required, the cost analyst performs Earned Value Management (EVM) analysis.

Federal Acquisition Oversight

The government acquisition process is governed by the FAR. The FAR is established for the codification and publication of uniform policies and procedures for acquisition by all executive agencies (Acquisition.gov, 2016, p. Section 1.101). There are several types of acquisitions identified in the FAR. These are acquisition of commercial items (FAR part 12), the simplified acquisition procedures (FAR part 13), and contracting by negotiation (FAR part 15) (Acquisition.gov, 2016) and (United States Marine Corps Regional Contracting Office, 2010). The purpose of the FAR is to deliver on a timely basis the best value, product, or service to the customer, while maintaining the public's trust and fulfilling public policy objectives (Acquisition.gov, 2016, p. Section 1.102).

There are many laws and statutes in addition to the FAR that apply to the overall federal contract award process. Additionally, specific agencies provide supplemental guidance for contracting. For example, the Department of Defense (DOD) provides the DOD federal acquisition regulations (DFARS), which provides guidance specifically for acquisitions in the DOD environment. Furthermore, in addition to DOD level guidance, specific branches of the

³ Complex acquisitions can be defined as many things and thresholds used to engage cost analysts as part of the contract award process are typically defined by the agency or acquisition office. Some means that are used to define these thresholds are expected dollar value of the contract, high profile or politically sensitive acquisitions, or sensitive and technically complex projects.

military provide additional guidance; such as the Marine Corps Acquisition Procedures Supplement (MAPS) (United States Marine Corps Regional Contracting Office, 2010).

The following will focus on the FAR itself and guidance for the government as a whole rather than specific statutes or agency/departmental guidance. While the FAR is typically the most imperative source of information for the federal acquisition workforce; when working on an actual solicitation, it is important to understand and discuss with the contracting specialist or contracts officer whether there is any additional guidance or statutes that will impact the contract award process for a specific contract.

The FAR states that the purpose for performing cost or price analysis is to develop a negotiation position that permits the contracting officer and the offeror an opportunity to reach agreement on a fair and reasonable price (Acquisition.gov, 2016, p. Section 15.405(a)). The following table summarizes FAR section 15.404 Proposal analysis techniques⁴:

Table 2: Summary of Proposal Analysis Techniques

	Cost Analysis	Price Analysis
Definition	Cost analysis is the review and evaluation of any separate cost elements and profit or fee in an offeror's or contractor's proposal, as needed to determine a fair and reasonable price or to determine cost realism, and the application of judgment to determine how well the proposed costs represent what the cost of the contract should be, assuming reasonable economy and efficiency.	Price analysis is the process of examining and evaluating a proposed price without evaluating its separate cost elements and proposed profit. Unless an exception from the requirement to obtain certified cost or pricing data applies under 15.403-1(b) (1) or (b) (2), at a minimum, the contracting officer shall obtain appropriate data, without certification, on the prices at which the same or similar items have previously been sold and determine if the data is adequate for evaluating the reasonableness of the price. Price analysis may include evaluating data other than certified cost or pricing data obtained from the offeror or contractor when there is no other means for determining a fair and reasonable price. Contracting officers shall obtain data other than certified cost or pricing data from the offeror or contractor for all acquisitions (including commercial item acquisitions), if that is the contracting officer's only means to determine the price to be fair and reasonable.

⁴ Typically, contracts that require support from a cost/price analyst will use both cost and price analysis techniques to review the contractor's business proposals. However, discussing these reviews and analyses with the contract specialist and contracting officer is recommended when there is any certainty regarding which reviews to perform for a specific contract.

Examples of techniques to use	<ul style="list-style-type: none"> • Verification of cost or pricing data and evaluation of cost elements including the necessity for and reasonableness of proposed costs including allowances for contingencies, projection of the offerors' cost trends on the basis of current and historical cost or pricing data, reasonableness and estimates generated by appropriately calibrated and validated parametric models or cost-estimating relationships, the application of audited or negotiated indirect cost rates, labor rates, and cost of money or other factors • Evaluating the effect of the offeror's current practices on future costs • Comparison of costs proposed by the offeror for individual cost elements with actual costs previously incurred by the same offeror, previous cost estimates from the offeror or from other offerors for the same or similar items, other cost estimates received in response to the government's request, IGCE created by technical personnel, and forecasts of planned expenditures • Analysis of the results of any make-or-buy program reviews in evaluating subcontractor costs 	<ul style="list-style-type: none"> • Preferred: Comparison of proposed prices received in response to solicitation • Preferred: Comparison of the proposed prices to historical prices paid (with no significant time lapse adjusted for differing terms, conditions, quantities, and market and economic conditions), whether by the government or other than the government, for the same or similar items. • Use of parametric estimating methods to highlight significant inconsistencies that warrant additional pricing inquiry • Comparison with competitive published price lists, published market prices of commodities, similar indexes, and discount or rebate arrangements • Comparison of proposed prices with IGCEs • Comparison of proposed prices with prices obtained through market research for the same or similar items • Analysis of data other than certified pricing data provided by the offeror
When to Use	Used to evaluate the reasonableness of individual cost elements when certified cost or pricing data are required	For commercial and non-commercial items. Shall also be used when certified cost or pricing data are not required and in order to verify that the overall price offered is fair and reasonable

The method or methods of evaluation will depend on the contract type. Guidance for this is also provided in the FAR. For example, the FAR states that cost realism analyses shall be performed on cost –reimbursement contracts to determine the probability cost of performance for each offeror (Acquisition.gov, 2016, pp. Section 15.404-1 (d) (2)).

The FAR provides definitions for cost realism, cost reasonableness, and price reasonableness. Cost realism analysis is the process of independently reviewing and evaluating specific elements of each offeror's proposed cost estimate to determine whether the estimated proposed cost elements are realistic for the work to be performed; reflect a clear understanding of the requirements; and are consistent with the unique methods of performance and materials described in the offeror's technical proposal. The FAR states that the probable cost may differ

from the proposed cost but should reflect the Government's best estimate of the cost of any contract that is most likely to result from the offeror's proposal (Acquisition.gov, 2016, pp. Section 15.404-1 (d)).

The FAR also states that cost realism analyses may also be used on competitive fixed-price incentive contracts or, in exceptional cases, on other competitive fixed-price-type contracts when new requirements may not be fully understood by competing offerors, there are quality concerns, or past experience indicates that contractors' proposed costs have resulted in quality or service shortfalls (Acquisition.gov, 2016, pp. Section 15.404-1 (d)(3)).

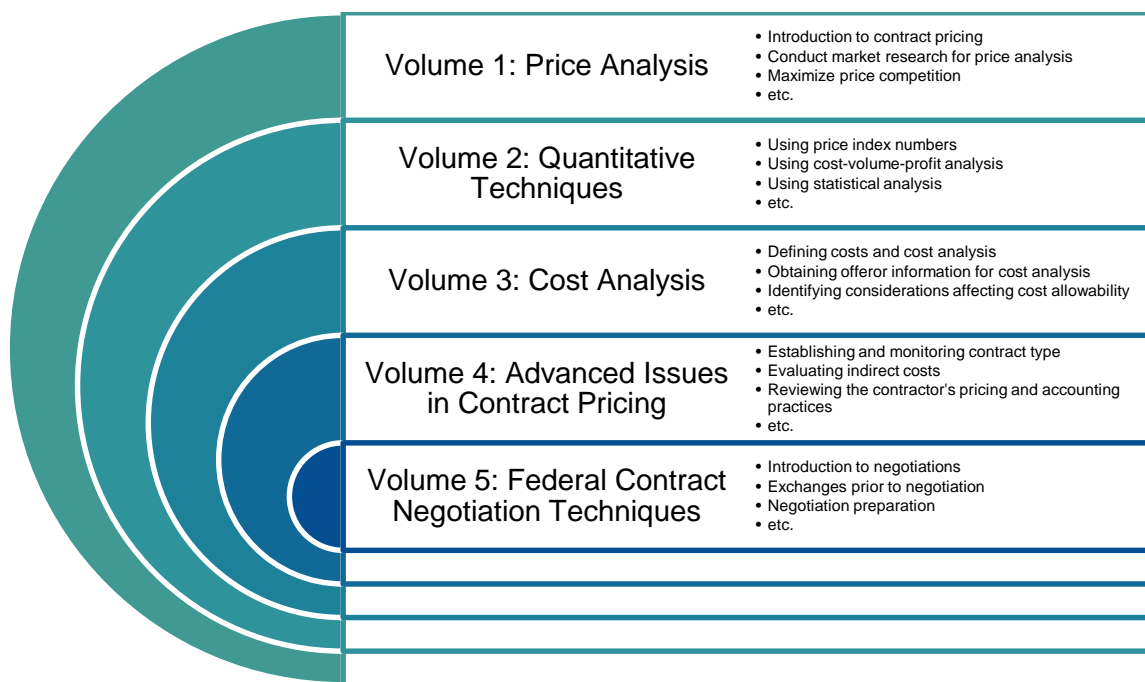
The FAR states that a cost is reasonable if it does not exceed that which would be incurred by a prudent person in the conduct of competitive business. It goes on to state that reasonableness of specific costs must be examined with particular care in connection with firms or their separate divisions that may not be subject to effective competitive restraints (Acquisition.gov, 2016, pp. Section 31.201-3). In this way, a different division of a company could be considered a subcontractor to the contract as a whole and be required to submit their proposal separately to the government. Specifically, reasonableness depends on a variety of considerations and circumstances, including:

- Whether the type of cost is generally recognized as ordinary and necessary for the conduct of the contractor's business or the contract performance
- Generally accepted sound business practices, arm's length bargaining, and Federal and State laws and regulations
- The contractor's responsibilities to the Government, other customers, the owners of the business, employees, and the public at large;
- Any significant deviations from the contractor's established practices.

(Acquisition.gov, 2016, pp. Section 31.201-3)

Additional guidance for contract price and cost analysis was developed jointly by the Air Force Institute of Technology (AFIT) and the Federal Acquisition Institute (FAI). While cited in the FAR (see section 15.404-1(7)), these references are intended for instruction and guidance, and are not directive. This guidance includes five volumes that cover a variety of topics and analyses that can occur over all phases of a contract's life-cycle. The five volumes are summarized in the following Figure (Air Force Institute of Technology and Federal Acquisition Institute, 2014):

Figure 1: Contents of the Contract Pricing Reference Guide Overview



The information to perform a successful acquisition is publicly available for contractors and the government. Organizing this information into the solicitation takes time and input from many sources; however, by adhering to these guides and policies can help make the contract award process run more smoothly.

Uniform Contract Format (UFC)

The UFC is one method of contract organization and is used for the majority of government contracting. However, the UFC is not required for construction, shipbuilding, subsistence items, supplies or services requiring special contract forms prescribed elsewhere, firm-fixed price or fixed-price with economic price adjustment acquisitions (Acquisition.gov, 2016, pp. Section 14.201-1 (a)). The following is a summary of the UFC Sections and Section Titles:

Table 3: Uniform Contract Format (UFC) Overview

Section	Title
A	Solicitation/Contract form
B	Supplies or services and prices
C	Description/Specifications
D	Packaging and Marking
E	Inspection and Acceptance
F	Deliveries or Performance
G	Contract Administration Data
H	Special Contract Requirements
I	Contract Clauses
J	List of Documents, Exhibits, and Other Attachments
K	Representations, Certifications, and Other Statements of Bidders

B. A summary description of the offeror's standard estimating system or methods used to estimate labor, material, other direct costs, and indirect costs. Identify any deviations from the standard estimating procedures in preparing this proposal.

C. An explanation of the escalation and/or inflation rates used in the proposal. Include a description of the basis for the rates and the logic for their application.

2.3 COST SUMMARY:

Separate cost summaries are to be provided for each CLIN. Each cost summary section consists of the following:

A. Cost by WBS

(1) Cost Data Summary: The offeror and each subcontractor with a value expected in excess of one million dollars shall provide a Cost Data Summary using the WBS. Subtotals shall be provided at each higher level of the WBS. This report should include the following information:

- i. Contract Number
- ii. Point of Contact (POC)
- iii. Period of Performance
- iv. Report "As of" date
- v. Costs incurred to date (showing non-recurring, recurring, and total costs for each WBS element)

Costs shall be provided in Then Year dollars (TY\$).

(2) Functional Cost Hour Breakout: The offeror and each subcontractor with a value expected in excess of one million dollars shall provide a Function Cost Hour Report, to the lowest WBS level at which estimates were developed. Subtotals shall be provided at each higher level of the WBS.

B. Funding Profile. The offeror shall provide a monthly funding profile in TY\$ and hours to the lowest level of the WBS.

2.4 PROGRAM INFORMATION:

The offeror shall provide the following program information:

A. Master schedule. The contractor shall provide a schedule showing all major program milestones.

B. Software Description. For each Computer Software Configuration Item (CSCI) the contractor shall provide the following software information:

1. CSCI Title
2. Description of the CSCI Function.
3. Total Line of Code:
Number of Lines Code: New
Number of Lines Code: Modified

Number of Lines Code: Reused.

4. Software Language(s). If more than one please provide a breakout of the Lines of Code (see 3 above) for each language.

5. Software Development Schedule.

C. Test Description. Contractor tests (both ground and flight) shall be clearly defined by describing the number and purpose of tests, number of test articles, test durations (days and/or months), etc. The contractor shall clearly indicate the quantity and type of laboratory tests, field fly-over tests, etc.

D. CLIN/WBS/SOW Matrix. The offeror shall provide a matrix which correlates WBS elements with Statement of Work (SOW) tasks and the CLIN structure.

Note: the software and testing section can be removed if the services contract does not include software development tasks or testing tasks.

2.5 DETAILED SUBSTANTIATION (LABOR HOURS):

Detailed substantiation consists of a written discussion explaining the basis for proposed labor hours.

A. Basis of Estimate. A written discussion explaining the basis for proposed labor hours for each category (engineering, program management, etc.) shall be provided at the lowest WBS level for which the estimate was developed. For each WBS element, there shall be supplied a task description describing the work to be performed, the specific rationale or methodology used to estimate the cost of the effort, and the substantiating data. Include any cross checks used to verify the reasonableness of the estimate.

General statements such as “estimates were derived from engineering judgment” are not considered as acceptable substantiation unless the details of the engineering analysis and/or similar systems analysis are provided. Where parametric, simulation or statistically derived models are used; the offeror shall provide sufficient description to permit the government to duplicate the results and to apply the model to the proposal and to similar existing systems. When citing actuals from other programs, the cost information from the cited program(s) must be provided along with the specific technical and programmatic details to allow evaluation.

B. If manufacturing standards are used in developing any estimates, indicate the quantities at which the standards are established and what factors are applied to these standards. Identify any learning curve(s), realization/efficiency factors used, and provide data to substantiate those curves and factors.

2.6 DETAILED SUBSTANTIATION (MATERIAL DOLLARS):

Detailed substantiation consists of written discussion explaining the basis for all proposed material dollars.

A. The Materials listing (i.e. Bill of Materials (BOM)) shall be clearly traceable to the Cost Summary. The contractor shall identify and explain all factors and adjustments used and shall clearly show how the detailed material costs “roll up” into the Cost Summary.

2.7 DETAILED SUBSTANTIATION (OTHER DIRECT COSTS):

Detailed substantiation shall be provided in contractor format identifying and explaining travel, computer, and other direct costs along with the substantiation for these costs.

2.8 RATES AND FACTORS:

Information on rates used in the proposal shall be provided in contractor format. The following specifics are required:

- A. A copy of the direct and indirect rates used in the proposal. Include the basis for the rates applied.
- B. An explanation of how the offeror has computed and applied the indirect costs; include the contractor cost to sell equations for the different labor categories and for material.
- C. A copy of the latest Forward Pricing Rate Agreement (FPRA). If there is any deviation between the rates and burdens used for this proposal and those in the FPRA, a written discussion supporting this deviation is required.

2.9 GOVERNMENT FURNISHED EQUIPMENT, FACILITIES, INFORMATION (GFE, GFF, and GFI):

Any government owned equipment, facilities, and/or information required for the performance of this contract shall be listed on a separate schedule in WBS order which indicated each item's estimated value, and in which phase the item is first required.

Appendix 4: Condenses Services Section L Cost Instructions

The following example instructions are the same as those presented in Appendix 3, except several of the sections have been shortened in order to provide shorter instructions for less complex services contracts. Specifically, the sections regarding the organization (section 2.0) and program information (section 2.4) were tailored and the detailed substantial of material dollars (section 2.6) was removed.

1.0 GENERAL COST INSTRUCTIONS:

1.1 Cost proposal information shall be submitted in accordance with the specific requirements provided in the following sections. These requirements are applicable to both the prime contractor and each subcontractor where the subcontract dollar value is expected to exceed one million dollars. If any information is considered proprietary by the subcontractor, that information shall be submitted under separate cover directly to the government.

1.2 Overall clarity and completeness of the proposal are of the utmost importance. A clear explanation of the basis for each portion of the proposal at the lowest level for which estimates were developed must be included. All pertinent information and supporting data, consistent with the offeror's cost accounting system shall be included in sufficient detail to permit evaluation. However, the general rule the offeror shall follow is that the quality of information is significantly more important than the quantity. Proposals containing voluminous computer print-outs without explanations are neither required nor desired. The offeror must submit with the proposal, and clearly identify any and all cost or pricing data used in developing their estimates. In addition, the offeror must submit with the proposal any information reasonably required to explain their estimating process, including:

- A. judgmental factor applied
- B. parametric, mathematical equation or any other method used to estimate, including those used in projecting from known data; and
- C. the nature and amount of any contingencies included in the proposed price

1.3 The contractor shall propose costs in accordance with the Work Breakdown Structure (WBS) provided herein. If no WBS has been specified by the Government, the contractor shall develop a WBS following the guidance from the Government Accountability Office's (GAO) Cost Estimating and Assessment Guide, Chapter 8.

1.4 All cost information provided in the detailed substantiation shall trace to the cost summary which shall trace to the Contract Proposal Pricing Sheet

2.0 ORGANIZATION:

The cost proposal shall consist of the following sections:

- Section 1 – Contract Proposal Pricing Sheet
- Section 2 – Overview
- Section 3 – Cost Summary
- Section 4 – Program Information
- Section 5 – Detailed Labor Hour Substantiation
- Section 6 – Detailed Other Direct Costs (ODC) Substantiation

Section 7 – Rates and Factors

Section 8 – Government Furnished Equipment/Facilities/Information

2.1 CONTRACT PROPOSAL PRICING SHEET:

The Prime contractor shall submit a contract proposal pricing sheet and supporting cost and pricing data per Table 15-2 in the FAR. Cost pricing data (as defined by FAR 15-408) is factual and verifiable.

2.2 OVERVIEW:

The Overview section shall provide a comprehensive narrative summary describing how the proposed costs were generated. The following sections are to be included:

- A. A list of all ground rules and assumptions used in estimating.
- B. A summary description of the offeror's standard estimating system or methods used to estimate labor, material, other direct costs, and indirect costs. Identify any deviations from the standard estimating procedures in preparing this proposal.
- C. An explanation of the escalation and/or inflation rates used in the proposal. Include a description of the basis for the rates and the logic for their application.

2.3 COST SUMMARY:

Separate cost summaries are to be provided for each CLIN. Each cost summary section consists of the following:

- A. Cost by WBS
 - (1) Cost Data Summary:** The offeror and each subcontractor with a value expected in excess of one million dollars shall provide a Cost Data Summary using the WBS. Subtotals shall be provided at each higher level of the WBS. This report should include the following information:
 - i. Contract Number
 - ii. Point of Contact (POC)
 - iii. Period of Performance
 - iv. Report "As of" date
 - v. Costs incurred to date (showing non-recurring, recurring, and total costs for each WBS element)

Costs shall be provided in Then Year dollars (TY\$).

(2) Functional Cost Hour Breakout: The offeror and each subcontractor with a value expected in excess of one million dollars shall provide a Function Cost Hour Report, to the lowest WBS level at which estimates were developed. Subtotals shall be provided at each higher level of the WBS.

- B. Funding Profile. The offeror shall provide a monthly funding profile in TY\$ and Hours to the lowest level of the WBS.

2.4 PROGRAM INFORMATION:

The offeror shall provide the following program information:

- A. Master schedule. The contractor shall provide a schedule showing all major program milestones.
- B. Test Description. Contractor tests (both ground and flight) shall be clearly defined by describing the number and purpose of tests, number of test articles, test durations (days and/or months), etc. The contractor shall clearly indicate the quantity and type of laboratory tests, field fly-over tests, etc.
- C. CLIN/WBS/SOW Matrix. The offeror shall provide a matrix which correlates WBS elements with SOW tasks and the CLIN structure.

Note: the testing section can be removed if the services contract does not include testing tasks.

2.5 DETAILED SUBSTANTIATION (LABOR HOURS):

Detailed substantiation consists of a written discussion explaining the basis for proposed labor hours.

- A. Basis of Estimate. A written discussion explaining the basis for proposed labor hours for each category (engineering, manufacturing, tooling, etc.) shall be provided at the lowest WBS level for which the estimate was developed. For each WBS element, there shall be supplied a task description detailing the work to be performed, the specific rationale or methodology used to estimate the cost of the effort, and the substantiating data. Include any cross checks used to verify the reasonableness of the estimate.

General statements such as “estimates were derived from engineering judgment” are not considered as acceptable substantiation unless the details of the engineering analysis and/or similar systems analysis are provided. Where parametric, simulation or statistically derived models are used; the offeror shall provide sufficient description to permit the government to duplicate the results and to apply the model to the proposal and to similar systems. When citing actuals from other programs, the cost information from the cited program(s) must be provided along with the specific technical and programmatic details to allow evaluation.

- B. If manufacturing standards are used in developing any estimates, indicate the quantities at which the standards are established and what factors are applied to these standards. Identify the learning curve(s), realization/efficiency factors used, and provide data to substantiate those curves and factors.

2.6 DETAILED SUBSTANTIATION (OTHER DIRECT COSTS):

Detailed substantiation shall be provided in contractor format identifying and explaining travel, computer, and other direct costs along with the substantiation for these costs.

2.7 RATES AND FACTORS:

Information on rates used in the proposal shall be provided in contractor format. The following specifics are required:

- A. A copy of the direct and indirect rates used in the proposal. Include the basis for the rates applied.
- B. An explanation of how the offeror has computed and applied the indirect costs; include the contractor cost to sell equations for the different labor categories and for material.

C. A copy of the latest Forward Pricing Rate Agreement (FPRA). If there is any deviation between the rates and burdens used for this proposal and those in the FPRA, a written discussion supporting this deviation is required.

2.8 GOVERNMENT FURNISHED EQUIPMENT, FACILITIES, INFORMATION (GFE, GFF, and GFI):

Any government owned equipment, facilities, and/or information required for the performance of this contract shall be listed on a separate schedule in WBS order which indicated each item's estimated value, and in which phase the item is first required.

Appendix 5: Section M Cost Criteria Example

Section M includes details regarding the evaluation of more factors than cost; this example will provide a basic cost evaluation factor but will skip the other factors that can be included as part of Section M. Any combination of the criteria listed below can be used and tailored for specific acquisitions. It is recommended that the analyst who will perform these evaluations works closely with the contract specialist and contracting officer to develop these criteria for the RFP.

Cost/Price Factor Evaluation Ratings: Cost/Price, while being an important factor, is not the determining factor in the selection of the successful offer for award of the contract planned by this solicitation. Cost/Price is not scored; rather, each offeror's cost will be evaluated for realism and reasonableness of the proposed contract cost.

Realism: The government will evaluate the realism of the proposed cost by assessing the compatibility of the proposed cost with the proposal's scope and effort. For the cost to be realistic, it must reflect what it would cost the offeror to perform the effort if performed with reasonable economy and efficiency. The cost realism evaluation includes a review of the overall costs in the offeror's proposal to determine:

- If costs are realistic for the work proposed;
- If costs reflect a clear understanding of the requirements; and
- If costs are consistent with the unique methods of performance and materials described in the offeror's technical proposal⁵

Reasonableness: The government will evaluate the reasonableness of the proposed cost/price for the contract's base and option periods by assessing the acceptability of the offeror's methodology used in developing the cost/price estimates. For the cost to be reasonable in its nature and amount, it should not exceed the cost which would be incurred by a prudent person in the conduct of a competitive business. Reasonableness takes into account the context of a given source selection, including current market conditions and other factors that affect the ability of an offeror to perform the contract requirements. Reasonableness depends upon a variety of considerations and circumstances, including:

- Whether the proposed cost/price are the type of cost generally recognized as ordinary and necessary for the conduct of the offeror's business or the contract performance;
- The cost/price are aligned with generally accepted sound business practices, Federal and State laws and regulations, etc.; and
- The cost/price contains any significant deviations from the offeror's established practices⁶

⁵ These criteria are taken from the AFIT and FAI Contract Pricing Reference Guide, Volume IV, Chapter 8 and are consistent with the FAR sections 15.101, 15.401, and 15.404-1(d). The Contract Pricing Reference Guide provides additional information regarding the cost realism process and how to implement cost realism during contract evaluation and how to consider cost realism analysis for cost-reimbursable proposals and fixed-price proposals.

⁶ These criteria were taken from the FAR Section 31.201-3. It may also be beneficial to include specific ways that the offeror's proposals may be examined for reasonableness as part of this section. For example, one method could be establishing an IGCE and comparing the proposed prices to the IGCE. Additional methods of comparison for reasonableness are listed and explained in the AFIT and FAI Contract Pricing Reference Guide, Volume I, Chapter 6 and are summarized in Table 2 in the body of this paper.