

RFP INSTRUCTIONS REFLECT INDUSTRY RECOMMENDED RFP LANGUAGE TO PRODUCE COMMON PROPOSAL PRODUCTS

1.0 General Cost Volume Instructions

- a. The offeror shall submit a Cost Volume in accordance with the following instructions. The submitted cost proposal shall provide visibility into the Offerer's actual resource expenditures for comparable tasks. This information is commonly called historical program data. A clear view into the Offerer's historical program data is essential during the evaluation process. The Offerer must demonstrate the accuracy and validity of the cost proposal Basis of Estimates (BOEs). Substantiation for the BOEs, including a clear trace to the data and the estimating methods utilized at the lowest level need to be developed. These estimates should generally not be lower than the cost reporting level contained in the government contracts cost and technical data Contract data requirements list (CDRL). This direction is applicable to the Offeror and all proposed major subcontractors, as previously defined. ["major" should be defined earlier in Section L for other cost proposal requirements]
- b. The proposed CWBS shall be compliant with Section F of MIL-HDBK[STD]-881. The Offeror shall sequentially number the CWBS in a hierarchy fashion starting at Level 1 for the total contract, and then expand downward to the proper units/assemblies/CSCI, remaining consistent with cost reporting requirements. The CWBS number, title, discipline, and a brief task description shall be included on all BOEs. To enhance the Government's evaluation of cost/price reasonableness, realism, and risk, resource estimates shall use, to the maximum extent possible, historical cost data from similar programs or tasks from within such programs. Historical data used in the BOEs should trace to total program cost reported in auditable reports (e.g., prior cost and technical CDRL items).
- c. The cost proposal section shall include a summary matrix of hours proposed by CWBS and CLIN and identify the company performing each task. If a subcontractor submits a separate BOE, the proposed hours by CWBS and CLIN shall be traceable to the prime's summary table through the provided Price/Cost Analysis for subcontracts above \$700K.
- d. To the maximum extent possible, individual BOEs should be limited to five pages. This will enhance the accuracy, validity, and efficiency of the evaluation process.

2.0 BOE Requirements

- a. Substantiation is required for all costs included in the cost volume. The requirements outlined in this section shall apply equally to the prime and any expected major subcontractors. General statements such as "estimates were derived from engineering analysis or judgment" are unacceptable. Statements that simply describe a historical program and the associated labor hours and material costs do not substantiate a cost estimate. The relationship of that program to the proposed system must be demonstrated and justified as outlined in this section. If a "new or improved" engineering or manufacturing process is the basis for projected cost savings over historical systems, the Offeror shall provide a description of the improvements, the relationship

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to the previous process, and a summary of how these improvements will be achieved. Specific savings in work hours and material must be documented and justified with regard to the content and practicality of these improvements. Estimates for level of effort tasks shall include the following: task duration, time-phased hours and associated costs, and the relationship between the historical system and the proposed system and potential variation of all inputs.

- b. The cost volume shall contain technical and programmatic information for both the proposed system and any analogous system used to develop the cost volume. This information shall be consistent with the information provided in the technical volume of the Offeror's proposal. This information is required in order to identify parameters that are likely to affect the cost of the proposed system, and to establish the relationship between the proposed system and the analogous system. The Offeror shall clearly identify and distinguish information associated with the proposed system from information associated with the analogous system.
- c. Provide the following information for each BOE:
 - WBS number and title
 - SOW requirement being addressed
 - Technical activities required to meet the SOW requirement
 - WBS deliveries
 - Risks and planned mitigations (where applicable)
 - Task description including the disciplines required to perform the scope. Description of tasks and technical approach shall be consistent with other parts of the proposal
 - Total labor hours and non-labor hours proposed yearly by quarter (Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec)
 - Recurring/Nonrecurring effort will be segregated where required (separate BOEs for RE/NR not mandatory)
 - Estimating methods. Provide methods and calculations used to develop the estimate. Algorithms supporting BOE estimates must be provided. See section 2 for further details.
- d. Each WBS specific BOE from the prime submittal should be inclusive of all companies for ease of evaluation from the Government.

3.0 Estimating Methods

The Government recognizes that Offerors may use a variety of cost estimating methods to develop their cost volume. However, the government asserts that it is very important that cost evaluators have sufficient information to reproduce and verify the contractor's proposed cost. This section outlines the estimating method definition and substantiation requirements specific to Analogy, Cost Estimating Relationships (CERs), Cost Models, Level of Effort, Engineering Judgment and Task Based estimating. Historical data from comparable systems/subsystems shall be used to substantiate the Offeror's cost volume to the maximum extent. When using historical cost data from comparable systems, all assumptions affecting the Offeror's cost volume are to be fully documented (e.g., inflation, methodology, detailed Basis of Estimate, make or buy decisions, etc.). A programmatic and technical description of the historical system as well as the proposed system shall be provided along with the actual cost data for the historical system, a comparison of the historical system to the proposed system,

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and any adjustments made to the historical programmatic, technical, and cost data to derive the cost volume.

3.1 Analogy

- a. Analogy is an estimate based on relevant historical actual cost/hours. Factors may be applied for scope, technical and programmatic differences.
- b. Identify the analogous program and why it is relevant to the same or similar task estimate. Include the relevant project name, project/contract number, period of performance and task definition information. Describe the CWBS level from which the historical data are derived from the analog and make a subjective evaluation and identification of the differences between the new system and historical system(s). The hours and cost impact of the technical differences must be identified. Describe a clear trace to how the analogous data were used to derive the current estimate.

3.2 Cost Estimating Relationship (CER)

- a. A CER is an estimate based on relevant historical, statistically correlated relationships. The mathematical equation represents the statistical relationship between independent and dependent variables of historical data. An assessment defines the degree of similarity, enabling the Estimator to develop comparative values (e.g. hours per drawing design). Percentage relationships are based on the dependency of support functions to discrete tasks. These percentage relationships are based on cost history, the results crosschecked with similar programs, and a graph or a table backs up the percent relationship in the BOE to show the proportion of the relationship.
- b. Identify the factor and base to which the CER is applied. Describe the database used to create the CER and provide the relevant statistics, such as mean and standard deviation of independent variables, number of data points, data range, standard error of the CER, R2, t-statistics, and F-statistics. List the equation, input variables used for the estimate, and the output value calculated. If any adjustments are made to the output value, describe the adjustment and the resultant estimate, and provide rationale for the adjustment. Annotate if the CER has been reviewed and approved by DCMA or another government agency. If the CER is published or provided by another organization, identify the source. Contractor in-house CERs will be documented and provided to the government as part of the proposal.

3.3 Cost Model

- a. A Cost Model is based on a mathematical calibration that derives project cost or effort from attributes/metrics of the project. Examples of project metrics include weight, size, complexity, quantity, source lines of code (SLOC), function points, and COTS product characteristics. The measurement is based on the technical, physical, or other end item characteristics. Cost Models may be internally developed or commercially available.

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- b. State the model used and describe the appropriateness of the model. Include the name of the model and version number used. List the types and values of primary model inputs used for the estimate. Describe the method in which the model was calibrated and validated using historical company data. Provide the model output and relate it to the proposed resource estimate.
- c. Costs estimates using models shall be broken into labor, materials, subcontract and other direct cost elements using reasonable and supportable allocation techniques. Labor costs shall be further broken out into equivalent labor hours using reasonable and supportable labor rates.

3.4 Level of Effort

- a. Level of Effort is an estimate based on identifying resource requirements to support specific identified tasks that are often based on a predetermined level of support for a given period of time. This estimate type is minimally affected by product quantity changes.
- b. Include allocation of personnel by account to cover specific tasks for a pre-determined length of time. Provide rationale for period of performance. Use appropriate Manpower Conversion Factor (MCF) such as hours per month, hours per day, hours per shift.

3.5 Engineering Judgment

- a. Engineering Judgment is an estimate based on subject matter expert experience with no specific relevant historical actual cost/hours identified. The subject matter expert develops the estimate based on the product description and tasks and operations required to be performed by the responsible department to manufacture/produce the product.
- b. Provide a detailed explanation of the basis of the engineering judgment, and include the qualifications of the individual making the judgment. Be specific and detailed enough to demonstrate to an evaluator that the individual is qualified to make this estimate.

3.6 Task Based

Task Based is an estimate developed at the lowest level of the WBS (at the detail, sub-assembly and assembly levels) based on a standard and/or historical performance of accomplishing comparable tasks. The direct labor hours required to complete the work are estimated from engineering drawings and specifications, usually by an industrial engineer using company or general industry standards. The engineers also estimate raw materials and purchase parts requirements. The remaining cost elements, such as tooling, quality control, other direct costs, and various overhead charges including systems engineering and project management must also be factored in.