W31P4Q-09-A-0016/0002

PERFORMANCE WORK STATEMENT (PWS)

TECHNICAL SUPPORT FOR PRODUCTION/PRODUCIBILITY AND SYSTEMS ENGINEERING

1.0 **MISSION OBJECTIVE:** The purpose of this PWS is to provide Production/Producibility Engineering and Systems Engineering technical support in accordance with the AMCOM Express Statement of Work. The support shall be to organizations such as the U.S. Army Aviation and Missile Command (AMCOM), Program Executive Office Missiles and Space, Missile Defense Agency, Program Executive Office Aviation, Program Executive Offices PEO C3T and IEWS, project/program management organizations and functional activities. Support will be provided through the Production Engineering Division (PED) of the Engineering Directorate (ED), Aviation and Missile Research, Development, and Engineering Center (AMRDEC). The support to accomplish these tasks will be identified by individual Technical Instructions (TIs) delineating the specific work to be performed.

2.0 PERFORMANCE REQUIREMENTS:

2.1 The individual TIs will indicate whether the tasks will be performed at contractor or Government facilities. Travel and performance may be required within the continental United States. Infrequent OCONUS travel may also be required.

2.2 The contractor shall provide the necessary skilled personnel, and technical support to meet the objectives and technical requirements in this PWS, as further specified in the TIs.

2.3 For each TI issued under this contract, the contractor shall prepare a Technical and Management Work Plan. The plan shall be delivered within five (5) working days after task award.

2.4 For each TI issued under this contract, the contractor shall prepare status reports and funds and man-hour expenditure reports.

2.5 For each TI issued under this contract, the contractor shall prepare technical progress reports addressing technical progress and a final technical report summarizing all tasks.

2.6 The contractor shall be required to attend monthly meetings to assess the status and progress of the TIs.

2.7 Production/Producibility Engineering: (The following paragraphs are in accordance with paragraph 3.16 PE, Basic Statement of Work.) As specified by TI, the contractor shall conduct/support producibility analysis, including review of weapon system end items and/or subsystems/components, during all phases of a system's life cycle (Concept Decision, Concept Refinement, Technology Development, System Development and Demonstration, Production and Deployment, and Operations and Support).

2.7.1 Manufacturing Planning/Requirements Analysis (Ref: Basic SOW Section 3.16.PE1): As specified by TI, the contractor shall develop and/or analyze manufacturing planning based on considerations such as: Make or buy lead-time, production flow, plant layout, manpower requirements, special test and inspection equipment, special tool requirements, general purpose production needs, capacity constraints, production control systems, time and cost standards, time-phased production start-up plan, line/process training requirements, and process specifications. The contractor shall support the development and/or analysis of production review plans and of technical requirements documents to ensure the incorporation

of production/producibility considerations. The contractor shall provide inputs related to technical requirements and system development. The contractor shall develop and analyze production related schedules to ensure that they meet the overall program requirements.

2.7.2 Production Simulation and Risk Assessment (Ref: Basic SOW Section 3.16.PE2): As specified by TI, the contractor shall use the commercially available Witness or SIMBA software to develop and implement reusable simulations and interfaces that will be delivered to the government. These simulations will be provided to the government and may be used by analysts who do not have a background in simulation. This effort may involve any or all of the following: Development, debugging, installation, and end-user training. Data involved may be supplied by the customer or collected on-site by the contractor. The simulations will be used to analyze the risks associated with production planning, production cost, and production schedules. The contractor will perform tasks including formulating and writing modeling and simulation (M&S) statements of work; developing general M&S plans and recommendations; attending M&S meetings/reviews; reviewing model data logic; performing verification, validation, & accreditation (VV&A) activities; and other M&S related tasks as needed.

2.7.3 Process/Production Line Analysis (Ref: Basic SOW Section 3.16.PE1): As specified by the TI, the contractor shall analyze process and production line plans or actions for AMRDEC supported weapon systems taking into account such factors as manufacturing techniques, facility/capacity availability, manufacturing cost, and cycle/throughput time. Analyses of process and production line plans shall include: Cost/rate comparisons for alternative processes, capability of the line to increase production, additional capacity required to meet rate surges, process capability and performance analysis, implementation of lean principles, and production flow plans for various production rates. The contractor shall analyze production planning for all program phases as required. Areas of analysis shall include areas such as manpower requirements, skill requirements, training, production process robustness, inspection/test operations, production control, scheduling processes, and inventory requirements.

2.7.4 Production Reviews (Ref: Basic SOW Section 3.16.PE1): The contractor shall provide production engineering and planning support to production related reviews, including production readiness reviews and manufacturing readiness assessments, critical safety item assessments and supplier interface and oversight program audits, technical design reviews, and other audits.

2.7.5 Production Engineering Technologies (Ref: Basic SOW Section 3.16.PE1): The contractor shall perform investigations to determine the state-of-the-art for various production engineering technologies.

2.7.6 Production Engineering Proposal Evaluation (Ref: Basic SOW Section 3.16.PE1): The contractor shall perform analysis of weapon system contractor proposals for development or production of AMRDEC-supported weapon systems, to include participation in source selection evaluation boards and sole-source technical evaluation teams. The contractor shall determine feasibility of the technical proposal and resources required to execute the technical approach. Contractor inputs and rationale shall be provided to the Government evaluator; but the Contractor will not participate in scoring or otherwise rating proposals.

2.7.7 Production Engineering Manufacturing Materials and Processes (Ref: Basic SOW Section 3.16.PE1): The contractor shall provide technical expertise to assess manufacturing materials and processes for aviation and missile systems, subsystems, and components to identify and coordinate improvement concepts and tasks that can be implemented to significantly reduce cost, weight and supportability requirements. This shall include the investigation of materials and manufacturing processes as they apply to repair and sustainment technologies for weapon systems.

2.8 Systems engineering: (The following paragraphs are in accordance with paragraph 3.19 SE, Basic Statement of Work.) The Contractor shall support the development and/or implementation of new SE processes for assigned weapon systems. The Contractor shall perform analyses and or evaluations of existing weapon systems to improve processes and performance. These processes shall include but not be limited to risk management, requirements development and management, requirements analysis, requirements traceability, requirements verification and validation, functional modeling, Integrated Product and Process Development (IPPD) development and charter definition, technical reviews entrance/exit criteria, and technical baseline management within OSD SE guidance and DODI 5000.02.

2.8.1 Systems Engineering Planning (Ref: Basic SOW Section 3.19.SE13): The Contractor shall develop and/or support the development of Systems Engineering Plans (SEPs) for assigned weapon systems. The Contractor shall support review and modification of SEPs per OSD System Engineering Management Plan Preparation Guide IAW DoD 5000.02

2.8.2 Requirements Management (Ref: Basic SOW Section 3.19.SE7, 8, 9): The Contractor shall perform requirements management functions using the commercially available Dynamic Object Oriented Requirements System (DOORS) and/or CORE systems engineering software tools. The Contractor shall perform all tasks required to develop requirements management databases, performance specifications, requirements verification methods, and perform functional analyses of performance requirements for further decomposition/definition for assigned weapon systems.

2.8.3 Risk Management (Ref: Basic SOW Section 3.19.SE3): The Contractor shall provide systems engineering support to risk management and mitigation activity to include defining the risk management plan, implementing appropriate tools, risk monitoring, and /or development of risk mitigation plans.

2.8.4 Evaluation (Ref: Basic SOW Section 3.19.SE14, 15): The Contractor shall support and/or perform non-competitive technical evaluations for assigned weapon systems. Areas to be considered in such evaluations include systems engineering processes and performance specification development.

2.8.5 Trade Study Analysis (Ref: Basic SOW Section 3.19.SE3): The Contractor shall perform systems engineering trade studies for assigned weapon systems. The Contractor shall provide technical expertise as required to participate in trade study analysis and systems engineering expertise to support the trade study optimization process.

2.9 Process Modeling and Simulation Services; The contractor shall develop and complete process models, simulations and associated user interfaces for existing Army Hardware Production Lines or other production/business process environments. The processes to be modeled and simulated shall utilize WITNESS and/or SIMBA software, which are proprietary to the Lanner Group, Inc, in the latest version that is commercially available. User interfaces shall be at the contractors choice and agreed to by the government prior to implementation and be commercially available software. Software construction shall proceed through the normal phases of requirements definition, design, implementation, testing, and delivery. The contractor shall allow for various platforms and means of access. Personnel developing the model shall be knowledgeable in determining what data is needed to complete the task. Data that is not readily available shall be collected at the facility of origin with Government and contractor/process owner permission as directed. This effort will require functional expertise in data analysis, statistics, and production and sustainment simulation.

3.0 **TRAVEL**: Travel may be required in performance of this PWS. The contractor must receive approval from the COR prior to performing any travel. A trip report is required.

4.0 **SECURITY**: The Contractor shall provide security to a level necessary to meet the requirements of the tasks requested. Contractor's work effort shall not be above the level of SECRET. Contract personnel shall retain a SECRET level clearance for the duration of the task order. The Contractor shall comply with all applicable security classification guides as defined in the individual TIs, if applicable.

5.0 **GOVERNMENT FURNISHED PROPERTY**: Provisions for Government Furnished Property will be specified in the individual Technical Instructions. If no specifications are made in the Technical Instructions then the following conditions apply. The Contractor shall provide the required services off-site and/or on-site as determined by agreement between the Government and Contractor. The Contractor shall perform off-site tasks using their own facilities and automation resources. For the on-site support, the Government will provide work space, personal computer, telephone, office supplies, and access to copy and facsimile machines. The Government will provide access to data and information required for the execution of this effort.

6.0 **DELIVERABLES**: Written results of evaluations, analyses, and other task activities shall be provided, as required by TI, to the COR and/or appropriate personnel in contractor or COR directed format.

6.1 Progress, Status and Management Reports shall be prepared IAW CDRL A003 and shall be delivered as specified in the applicable TI. (Applicable to section 2.0 and all subsections)

6.2 Status Reports shall be prepared IAW CDRL A001 and shall be delivered as specified in the applicable TI. (Applicable to section 2.4)

6.3 Technical and Management Work Plan shall be prepared IAW CDRL A005. (Applicable to section 2.3)

6.4 Technical Report-Study/Services shall be prepared IAW CDRL A002 and shall be delivered as specified in the applicable TI. (Applicable to section 2.0 and all subsections)

6.5 Funds and man-hour expenditure reports shall be prepared IAW CDRL A008 and shall be delivered as specified in the applicable TI. (Applicable to section 2.4)

6.6 Technical progress reports shall be prepared IAW CDRL A009 and shall be delivered as specified in the applicable TI. (Applicable to section 2.5)

6.7 Trip reports will be prepared IAW CDRL A006 and shall be delivered as specified in the applicable TI. (Applicable to section 3.0)

6.8 The contractor shall deliver Witness/SIMBA executable List format files for the system modeled and native executable source code and/or files used in User Interfaces and document the use of such software IAW DI-IPSC-81443.

6.9 The contractor shall conduct an end of project review and demonstration of the process model(s) and simulation(s) to government representatives.

7.0 **ACCOUNTING FOR CONTRACTOR SUPPORT:** The Office of the Assistant Secretary of the Army (Manpower & Reserve Affairs) operates and maintains a secure Army data collection site where the contractor will report ALL contractor manpower (including subcontractor manpower) required for performance of this task order. The contractor is required to completely fill in all the information in

the format using the following web address: Https:///contractormanpower.army.pentagon.mil. The required information includes: (1) Contracting Office, Contracting Officer, Contracting Officer's Technical Representative; (2) Contract number, including task and delivery order number; (3) Beginning and ending dates covered by reporting period; (4) Contractor name, address, phone number, e-mail address, identity of contractor employee entering data; (5) Estimated direct labor hours (including subcontractors); (6) Estimated direct labor dollars paid for the reporting period (including subcontractors); (7) Total payments (including subcontractors); (8) Predominant Federal Service Code (FSC) reflecting services provided by contractor (and separate predominant FSC code for each subcontractor if different); (9) Estimated data collection cost; (10) Organizational title associated with the Unit Identification Code (UIC) for the Army Requiring Activity (the Army Requiring Activity is responsible for providing the contractor with its UIC for the purposes of reporting this information); (11) Locations where contractor and subcontractors perform the work (specified by zip code in the United States and nearest city, country, when in an overseas location, using standardized nomenclature provided on website) (12) Presence of deployment or contingency contractor language; and (13) Number of contractor and subcontractor employees deployed in theater for the reporting period (by country). As part of its submission, the contractor will also provide the estimated total cost (if any) incurred to comply with this reporting requirement. Reporting period will be the period of performance not to exceed 12 months ending September 30 of each government fiscal year and must be reported by 31 October of each calendar year. Contractors may use a direct XML data transfer to the database server or fill in the fields on the website. The XML direct transfer is a format for transferring files from a contractor's systems to the secure web site without the need for separate data entries for each required data element at the web site. The specific formats for the XML direct transfer may be downloaded from the web site.

8.0 **PERFORMANCE OBJECTIVES/METRICS**:

8.1 This performance-based service task order incorporates the following performance objectives: (1) Delivery of high quality technical performance; (2) Adherence to TO schedule, milestone, and delivery requirements; and (3) Efficient and effective control of labor resources. It is the contractor's responsibility to employ the necessary resources to ensure accomplishment of these objectives. The Government's assessment of the contractor's performance in achieving these objectives will utilize the standards, acceptable quality levels, surveillance methods, and performance incentives described in the Performance Requirements Summary matrix set forth in Appendix A. The performance incentives will be implemented via the Government's past performance assessment conducted in accordance with Part 42 of the Federal Acquisition Regulation (FAR), as applicable, and the "Task Order Performance" criteria of the annual award term evaluation, Basic BPA provision 45.

8.2. The performance objectives, standards, and acceptable quality levels shall be applied on a TO basis with performance incentives to be implemented on an annual basis. The Government will conduct informal interim counseling sessions with the contractor's Program/TO Manager to identify any active TO performance that is not meeting the acceptable quality levels. These sessions will be conducted at least on a quarterly basis in order to provide the contractor a fair opportunity to improve its performance level.

8.3 The Control of Labor Resources criteria will be reflected under the "Cost" category of the performance assessment. Although the criteria of Business Relations and Management of Key Personnel are not specifically included in the Performance Requirements Summary Matrix, the overall performance assessment will continue to include these criteria.

8.4. The contractor will be notified, in writing, of the Government's determination of its performance level for each performance objective including all instances where the contractor failed to meet the acceptable quality level.

APPENDIX A

PERFORMANCE REQUIREMENTS SUMMARY MATRIX

PERFORMANCE OBJECTIVE	PERFORMANCE STANDARD	ACCEPTABLE QUALITY LEVEL (AQL)	METHOD OF SURVEILLANCE	PERFORMANCE INCENTIVE
High Quality Technical Performance	**TO requirements met with little rework/re-performance required and with few minor and no significant problems encountered** *Performance meets all technical and functional requirements, and is highly responsive to changes in technical direction and/or the technical support environment* *Assessments, evaluations, analyses, recommendations, and related input are thorough, reliable, highly relevant to TO requirements, and consist of substantial depth and breadth of subject matter* *Deliverable reports contain all required data and meet all applicable CDRL requirements*	**Contractor delivery of products and/or services meets all TO requirements. Performance occurs with no required re-performance/ rework at least 80% of time. Problems that are encountered are minor and resolved in a satisfactory manner.**	**Routine Inspection of Deliverable Products/Services**	**Assignment of performance rating for QUALITY criteria:** *EXCEPTIONAL* *Performance and deliverables meet all and exceed many TO requirements. Performance delivered with no required re-performance/rework at least 95% of time; problems that are encountered are minor and resolved in a highly effective manner.* *VERY GOOD* *Performance and deliverables meet all and exceed some TO requirements. Performance delivered with no required re-performance/rework at least 90% of time; problems that are encountered are minor and resolved in an effective manner.* *SATISFACTORY* *Performance and deliverables meet all TO requirements. Performance delivered with no re-performance/rework at least 80% of time; problems that are encountered are minor and resolved in a satisfactory manner.* *MARGINAL* *Some TO requirements not met and/or performance delivered with re-performance/rework required more than 20% of time. Problems encountered were resolved in a less than satisfactory manner.* *UNSATISFACTORY* *Many TO requirements not met. Numerous re-performances/rework required. Substantial problems were encountered and inadequate corrective actions employed.*

Adherence to Schedule	**TO milestones, periods of performance, and/or data submission dates are met or exceeded**	**Contractor meets TO delivery requirements at least 80% of the time (excluding gov't caused delays)**	**Routine Inspection of Deliverable Products/Services**	**Assignment of performance rating for SCHEDULE criteria:** *EXCEPTIONAL* *TO milestones/ performance dates met or exceeded at least 100% of time (excluding government caused delays)* *VERY GOOD* *TO milestones/ performance dates met or exceeded at least 90% of time (excluding government caused delays)* *SATISFACTORY* *TO milestones/ performance dates met or exceeded at least 80% of time (excluding government caused delays)* *MARGINAL* *TO milestones/ performance dates met less than 80% of time (excluding government caused delays)* *UNSATISFACTORY* *TO schedule/performance dates met less than 70% of time*
Control of Labor Resources	**Contract labor mix is controlled in efficient and effective manner**	**Actual TO labor resource mix is maintained within 20% of originally awarded TO resource mix**	**Routine Inspection of TO Performance, Performance/Cost Reports, Payment Invoices, Etc.**	**Assignment of performance rating for COST CONTROL criteria:** *EXCEPTIONAL* *Actual TO resource mix maintained within 10% of originally awarded TO resource mix* *VERY GOOD* *Actual TO resource mix maintained within 15% of originally awarded TO resource mix* *SATISFACTORY* *Actual TO resource mix maintained within 20% of originally awarded TO resource mix* *MARGINAL* *Actual TO resource mix maintained within 25% of originally awarded TO resource mix* *UNSATISFACTORY* *Actual TO resource mix exceeds 25% of originally awarded TO resource mix*