**Job Title:**

Principal System Engineer

**Job Description:**

Analyzes user’s requirements, concept of operations documents, and high-level system architectures to develop system requirements specifications. Analyzes system requirements and leads design and development activities. Guides users in formulating requirements, advises alternative approaches, and conducts feasibility studies. Provides technical leadership for the integration of requirements, design, and technology. Incorporates new plans, designs and systems into ongoing operations. Develops technical documentation. Develops system Architecture and system design documentation. Guides system development and implementation planning through assessment or preparation of system engineering management plans and system integration and test plans. Interacts with the Government regarding Systems Engineering technical considerations and for associated problems, issues or conflicts. Ultimate responsibility for the technical integrity of work performed and deliverables associated with the Systems Engineering area of responsibility. Communicates with other program personnel, government overseers, and senior executives.

**Principal System Engineer Required Skills:**

The Principal System Engineer shall be able to perform all of the indicated tasks of a Senior System Engineer plus all of the following indicated tasks:

• Provides technical direction for the development, engineering, interfacing, integration, and testing of all components of complex hardware/software systems to include requirements elicitation, analysis and functional allocation, conducting systems requirements reviews, developing concepts of operation and interface standards, developing system architectures, and performing technical/non-technical assessment and management as well as end-to-end flow analysis.

• Develops comprehensive SOA solutions.

• Develops operational view, technical standards view, and system and services view for architectures using applicable DoDAF standards.

• Conducts and/or approves end-to-end system trade analyses to optimize system operations over its life-cycle through the proper balance of non-functional system performance areas.

• Improves standard integration strategies based upon rationale for previous decisions that resulted in improved integration performance.

• Fully defines interfaces in terms of origination, destination, stimulus, and data characteristics for software; and electrical and mechanical characteristics for hardware.

• Uses validated models, simulations, and prototyping to mitigate risk and reduce cost of system development.

• Develops alternative courses of action, workarounds, and fall-back positions with a recommended course of action for each risk, and monitor and re-evaluate risks at appropriate milestones. Monitors risks using earned value management (EVM) data.

• Maintains knowledge of current and evolving agency, national, and international standards applicable to the system development of interest. Applies and enforces use of suitable standards to ensure consistency and interoperability of developer hardware and software.

• Ensures effective, periodic review and control of the evolving configuration of a system, both hardware and software components and associated documentation, during the life of the system.

• Serves as a member of the CCB.

• As a participant within an Analysis of Alternatives (AoA) effort, recommends a preferred solution based on selection criteria adjusted for reasonableness and validity of assumptions, technology limitations, environmental impact, and life-cycle costs.

• Develops system design alternatives that consider life cycle cost, reuse, complexity, risk, system expansion, and growth.

**Principal System Engineer Required Qualifications:**

• Twenty (20) years experience in programs and contracts of similar scope, type, and complexity within the Federal Government is required.

• BS or above from an accredited college or university in SE, CS, IS, Engineering Science, Engineering Management or related field is required.

• Five (5) years additional SE experience may be substituted for a Bachelors Degree.

• Technical Certification as an Expert Systems Engineering Professional (ESEP) from INCOSE, DAWIA SPRDE Level 3, or other equivalent certification is required.

• Demonstrated experience in planning and leading Systems Engineering efforts is required.