

FALCONWOOD INC.

About Falconwood, Inc:

Falconwood, Inc. is a small, woman/veteran-owned business providing executive level consultants and programmatic support to Department of Defense (DoD) Information Technology (IT) initiatives and programs.

We provide expert consultation on a diverse range of IT subjects focusing on acquisition strategy, implementation activities and Information Assurance policy and engineering.

Falconwood, Inc. (FWI) is seeking a **Model-Base Engineer** to employ MBSE with System Model (SysML) to enhance communication, improves productivity and quality, supports systems integration, manages complexity, facilitates reusability. Additionally, MBSE will use of a common model to support a data driven systems engineering lifecycle to support acquisition and budgetary decisions while ensuring interoperable and functional areas as well as internal and external stakeholders (application and process owners, resource sponsors, and customers) throughout PEO EIS from requirements, to architecture, systems engineering, and test and evaluation.

The Program Executive Office for Enterprise Information Systems (PEO EIS) runs on increasingly complex systems. Engineers face a critical challenge in architecting, designing, managing, and optimizing these systems for the rapidly changing products of tomorrow. PEO EIS is employing **Model-Based Systems Engineering (MBSE)** and Space and Naval Warfare Systems Command (SPAWAR) system of systems engineering and cybersecurity rigor throughout the acquisition lifecycle to ensure the rapid delivery of Information Warfare capabilities that are: 1) fully integrated, interoperable and resilient, 2) intrinsic to how we operate, and 3) inherently sustainable. Our continuing focus is to make information advantage normal for the warfighter!

The FWI MBSE will leverage technical knowledge of complex systems, analysis of complex systems, and model management to help PEO EIS solve Enterprise business and IT problems.

The **MBSE** will:

- Architect, design, review, analyze, test and modify systems of systems designs and implementations of complex architecture and systems.
- Expert knowledge of complex systems, analysis of complex systems, and model management.

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- Ability to frame systems architecture as a series of decisions, which can be actively sorted, managed, and optimized to suit organizational needs.
- Ability to apply the benefits and challenges of Model-Based Systems Engineering.
- Ability to apply key aspects of models to systems engineering.
- Ability to manage system complexity, which is a critical challenge today as systems continue to grow in scale and complexity.
- Able to address changes which induce, propagate, and amplify risk in the increasingly complex products and services they are required to develop.
- Solid experience engineering complex systems, analysis of complex systems, and complexity management.
- Application of system architecture to minimize rework and ability to manage the complexity in modern systems.
- Ability to differentiate systems thinking. Apply system thinking to provide a perspective on a given project.
- Describe the architecture of systems and identify both architectural decisions and non-architectural decisions.
- Define and illustrate the system boundary and use it to identify system interfaces.
- Identify the constituent elements in architecture representations and place these in the context of the overall documentation of the system.
- Provide constructive criticism on the system architecture representations of other team members, including checking for completeness and consistency.
- Comprehension of practical and conceptual modeling considerations to make effective decisions supported by modeling analysis.
- Able to explain what types of models exist in engineering and how they can be organized into an overall taxonomy.
- Understand the purposes for which models are created in engineering and evaluate the success of modeling for those purposes against mission requirements.

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- Able to describe model development process, leading to models of increasing levels of fidelity.
- Demonstrate through examples how models are used to make decisions in engineering and how models can be used for optimization, including the definition of design variables, fixed parameters, objective functions and constraints.
- Evaluate the credibility and fidelity of existing models using a set of clear criteria.
- Understand the basic principles of verifying and validating models.
- Examine the tradeoffs between the use of physical and virtual prototypes for system verification, validation, and testing. Decide when to invest in additional modeling versus additional physical testing of systems.
- Ability to demonstrate the intent, representations, and functions of Model-Based Systems Engineering (MBSE).
- Able to create MBSE representations of a system and articulate the purpose of the representations.
- Understand the foundation of MBSE and the management challenges of MBSE – model repositories, model curation, and model integration.
- Analyze best practices of MBSE in industry and determine what functions are possible to accomplish with MBSE within PEO EIS.
- Understand the core tenets of MBSE and the situations in which it is recommended.
- Able to distinguish the differences between MBSE and traditional systems engineering and articulate MBSE value proposition to Navy Leadership.
- Able to choose an appropriate scope, define the purpose, and define the approach for an MBSE pilot project.
- Able to describe the intent and basic structure of SysML, and interpret SysML model to Project Leaders.
- Able to critique project's implementation of MBSE using a set of criteria. Able to build a model management plan for MBSE projects.

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- Able to research existing industry best practices for MBSE to anchor choices about the scope of MBSE to undertake within PEO EIS environment, and communicate potential approaches using industry use cases to gain stakeholder buy-in.

QUALIFICATIONS AND EDUCATION REQUIREMENTS:

- BS in Systems Engineering with 3 years of professional experience required
- Enterprise Architecture (EA) framework
- Network Architecture
- Cybersecurity fundamentals
- Application of Models in Systems Engineering
- Practical experience of MBSE Documentation and Analysis
- Practical experience Object Oriented SE Methodology
- Practical experience System Model (SysML)
- Practical experience of Modeling Tools and the Environment

PREFERRED SKILLS:

- Enterprise Architecture Certification desired
- MS in Systems Engineering with 5+ years of professional experience desired
- Practical experience of MBSE Tools such as MagicDraw, IBM Rational Rhapsody, Sparx Systems Enterprise Architect, No Magic Cameo System Modeler, Visual Paradigm, Vitech CORE, etc...
- DoD Acquisition Life Cycle
- Navy Manpower, Personnel, Training, and Education (MPT&E)
- Navy Enterprise Resource Planning (ERP)
- Network Architecture and Engineering

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- Must have an **Active Secret security clearance.**

Please reply directly to this position description with an updated resume and your salary requirements directly to Tiffany Cannon at tcannon@falconwood.biz.

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