

# SYSTEMS TEAM Holistic Project Lifecycle Support Specialists Overview

The CERT Systems Team helps organizations apply a holistic cybersecurity approach to software intensive systems as they progress through the full system and software engineering lifecycles, defining and incorporating security strategies and automation into each phase to balance risk exposure with operational effectiveness. The team also helps cyber domain systems apply modern engineering practices and adopt emerging technologies at the rate needed to keep pace with evolving opportunities, threats, and risks

## Planning

### SOFTWARE ENGINEERING

- SwE Process Assessments
- Software Architecture Assessments
- Requirements Analysis
- Cloud-Native Adoption

### DEVSECOPS

- DevSecOps Process Assessments
- Identify Critical Metrics
- Preparing for Continuous ATO (c-ATO)

### CYBERSECURITY

- Cyber Threat Assessments/ Modeling
- Risk Management Framework (RMF)
- Establishing Cybersecurity Strategy
- Software Assurance Tool Selection
- Policy and Procedure Development

### MODEL-BASED SYSTEMS ENGINEERING (MBSE)

- Integrating MBSE and Agile
- Requirements Engineering
- DoDAF & UAF

### DESIGN AND INTERACTION

- Product Analysis and Design
- Existing System Evaluation
- Process Documentation
- Heuristics
- Qualitative and Ethnographic Evaluation
- User Experience and Design
- Establish Usability Metrics

## Execution

### SOFTWARE ENGINEERING

- Prototyping/Proofs of Concept
- Application Containerization
- Cloud Migration
- Agile/SAFe Coaching
- Configuration/Customization of Agile Tooling

### DEVSECOPS

- Capture Critical Metrics
- Continuous Delivery/Continuous Deployment (CI/CD) Pipelines
- Implementing Container Orchestration (Kubernetes)
- Software Assurance Tool Implementation and Integration

### CYBERSECURITY

- Establish Processes and Procedures
- Establish/Maintain Cybersecurity Compliance
- Introduce Process Automation

### MODEL-BASED SYSTEMS ENGINEERING (MBSE)

- Architecture Modeling
- Integration of MBSE and SwE Tooling

### DESIGN AND INTERACTION

- Wireframing
- Interaction Design
- High Fidelity Visual Design
- Asset Production

## Evaluation

### SOFTWARE ENGINEERING

- Test Plans
- Test Automation
- Contractor/Vendor Vetting and Assessments

### DEVSECOPS

- Report Critical Metrics
- Identify Residual Gaps
- Identify Processes to Automate

### CYBERSECURITY

- Continuous Risk Assessment for c-ATO

### MODEL-BASED SYSTEMS ENGINEERING (MBSE)

- Model Simulation
- Evaluation of Model to Delivered System

### DESIGN AND INTERACTION

- User Testing
- Training
- Educational Material Production
- Usability Assessment

This is not comprehensive. Please reach out to discuss how we can assist you by emailing [info@sei.cmu.edu](mailto:info@sei.cmu.edu) and direct your question to the "CERT Systems Team"

## Strategy, Solution Evaluation and Implementation

The CERT Systems Team provides expertise across a wide range of skills throughout the development lifecycle in order to integrate various competency areas to solve hard problems in when a single discipline is insufficient. The CERT Systems Team works with program offices to complement organic capabilities while filling the needed deficiencies, with the goal of transitioning the solution and missing skill sets.

**AGILE Transformation**

**Cloud Migration/- Cloud-Native Architectures**

**Software Assurance**

**Adopting DevSecOps**