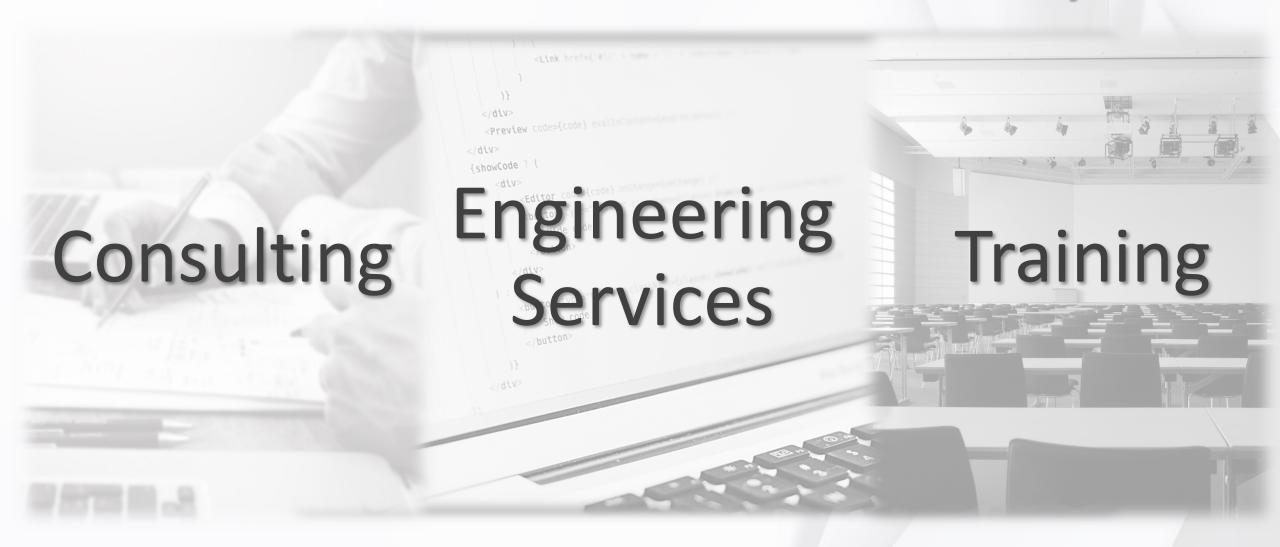# Company Profile

The Jovian Advantage

- Women Owned Small Business founded in 2017

- Our team has over 30+ years of experience in the Aerospace and Automotive industries
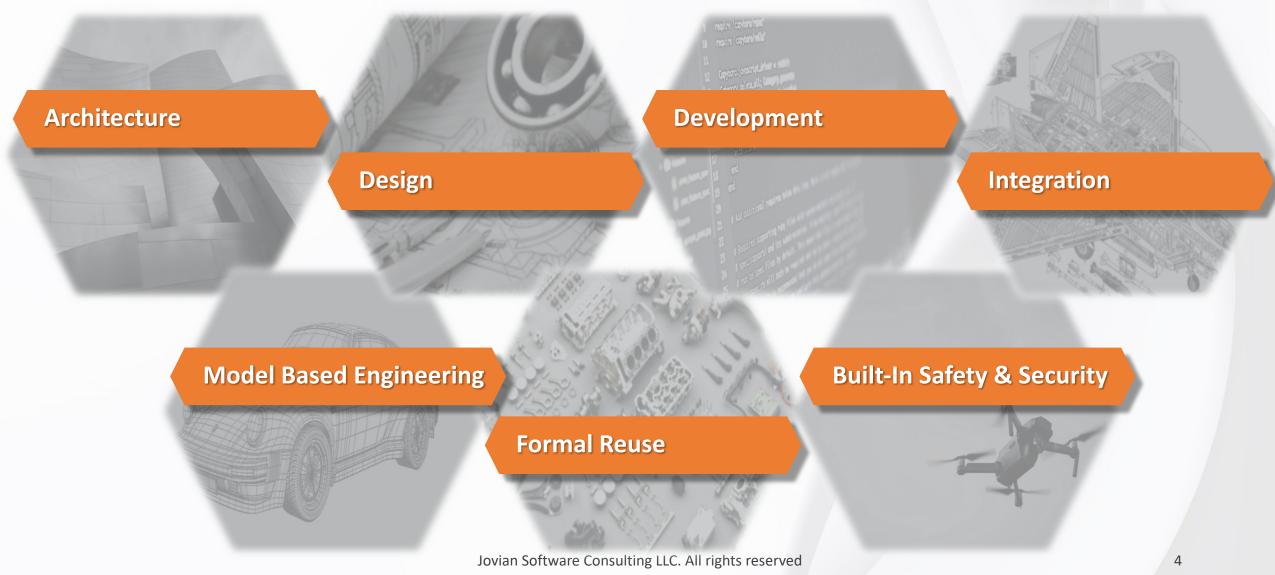
- Find us at www.joviansc.com

What can Jovian do for you?

Consulting

Engineering Services

Training

Key Objectives for Jovian

Safety

Affordability

Innovation

Security

Fast Fielding

Flexibility

Jovian Knowledge Areas

Architecture

Design

Development

Integration

Model Based Engineering

Formal Reuse

Built-In Safety & Security

4

Architecture

Consulting

- Support development of next generation architectures
- Create solutions to resolve architecture interoperability issues
- Create migration plans to latest architecture standards
- Development of architecture driven reuse strategies
- Perform trade studies

Engineering Services

- Develop next generation architectures
- Resolve architecture interoperability issues
- Migrate current/legacy systems and software to latest architecture standards
- Implement architecture driven reuse strategies

Training

- Future Airborne Capability Environment (FACE™)
- Joint Common Architecture (JCA)
- Department of Defense Architecture Framework (DoDAF)
- ARINC 653 safety critical architectures
- AUTomotive Open System Architecture (AUTOSAR)
- Modular Open System Architectures
- Architecture types… Component-Based, Layered, Service-Oriented
- Architecture methodologies

Design

Consulting

- Analyze software design solutions
- Review software designs and provide recommendations
- Support design level decision making in terms of design patterns, make/buy analysis, refactoring and maintenance

Engineering Services

- Develop next generation architectures
- Implement software design solutions
- Perform validation of design solutions
- Perform traceability to architecture and code
- Create required design artifacts

Training

- Design patterns
- Design for reuse
- Design methodologies
- Design trades
- Designing applications
- Designing core platform features
- Designing safety critical system

Development

Consulting

- **Support the software development process**
- **Create configuration management plans**
- **Create change management plans**
- **Create continuous integration plans and infrastructure design**
- **Create development environment and tools plans**
- **Create development plans specific to safety critical software**

Engineering Services

- **Develop application software for features**
- **Develop platform software components**
- **Perform verification and validation of software components**
- **Provide development artifacts based on the development process**
- **Provide maintenance and support**

Training

- **Basics of embedded software development**
- **Best practices**
- **Design driven development**
- **Development environment and tools**
- **Software development processes**
- **Code verification and validation**
- **Programming languages**
- **Safety critical software development**

Integration

Consulting

- **Develop software integration plans**

- **Review software integration plans and provide recommendations**

- **Identify software integration issues and provide solutions**

- **Support implementation of integration plans**

Training

- **Understanding interfaces**

- **Software-software integration**

- **System-software integration**

- **Hardware-software integration**

- **Virtual integration**

- **3rd party component integration**

- **Data driven interoperability**

- **Best practices**

Model Based Engineering

Consulting

- Provide guidance in modeling methodologies
- Develop tool infrastructure plans for model based engineering
- Review modeling methodologies and model artifacts
- Identify and resolve model issues and provide recommendations
- Provide solutions to model interoperability

Engineering Services

- Develop modeling methodologies
- Develop models and required artifacts
- Implement tool infrastructure plans for model based engineering
- Perform model validation and analysis
- Implement solutions to support model interoperability

Training

- Full lifecycle models for system and software development
- Model based procurement process
- Modeling methodologies
- Systems Modeling Language (SysML), Unified Modeling Language (UML), and Architecture Analysis & Design Language (AADL)
- Executable specifications and auto-code
- Model based development of safety critical systems

Formal Reuse

Consulting

- **Develop software reuse strategies**

- **Review software reuse strategies and provide recommendations**

- **Support development of product line engineering plans**

- **Support implementation and deployment of reuse plans**

Training

- **Understanding practical concepts in reuse**

- **Reuse 101 for managers**

- **Designing for reuse**

- **Product line engineering**

- **Reuse infrastructure and processes**

- **Architecture and design based reuse**

- **Reuse in safety critical systems**

Built-In Safety & Security

Consulting

- Create plans to meet certification based on DO-178 safety standards
- Create plans for safety analysis
- Explore safety requirements based on analysis with System-Theoretic Process Analysis (STPA)
- Recommend architecture and design guidance specific to safety critical system and software
- Support attack tree analysis for complex systems and software

Training

- Basics of safety critical systems and software
- Safety standards … DO-178, ISO-26262, etc.
- Safety analysis and methods … STPA, Design Time Assurance (DTA), Real-time Assurance (RTA)
- System-software interactions and safety implications
- Architecture and design based built-in safety
- Attack trees and analysis based on architecture and design

Jovian Research Areas

Architecture & Design

- Open system architectures
- Architectural trades
- Reusable architectures and designs
- Product line engineering with component based architectures
- System safety
- System security

Model Based Engineering

- Full lifecycle system-software model
- Analytical models
- Single source of truth model
- Data modeling
- Model trade space
- Model driven acquisition

Machine Learning & Artificial Intelligence

- Mission planning
- Route planning
- Resource management
- Vehicle health management
- Decision aiding
- Dynamic configurations
- Situational Awareness

Thank You

For more information, visit www.joviansc.com
or call +1 (616) 920 0458