V4I Launch Project
Trusted Model Repository

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Project Team Members

Phase 1 Team:
- Indiana University
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Project Description

• The **Trusted Model Repository (TMR) Reference Pattern** will provide actionable guidance and assets for life cycle management of Trusted Model Repositories and components:
  • For each virtual model: **Model Characterization Pattern** (Model Wrapper/Metadata);
  • For each TMR Platform’s capabilities planning and assessment: **TMR Pattern**;
  • For overall Innovation Ecosystem capabilities planning and assessment: **Innovation Pattern**.
• The **Science & Engineering Gateway (SEG) Information Technology** will provide simplified access to High Performance Computing (HPC) resources for virtual verification of products and processes, based on use of standardized IT component sets, APIs, metadata.

• These two project components will improve ability to plan, implement, use, and manage Trusted Model Repositories, leveraging existing third party commercial off the shelf industry platforms and generic frameworks managing the federated supply chain ecosystems.

System of Interest

• Phase 1: Application of TMR Ref Pattern to four targeted launch project ecosystems;
• Phase 2: Application of SEG IT, additional COTS platforms, to further ecosystems.

Outcome

• Can we improve the description and packaging of virtual models and their application ecosystems for easier, frequent, confident use of model-based V&V by a larger supply chain workforce?
V4I Framework Assets Applied in Project

- **Portability**: Mapping Uniform S*Metamodel to Models, Artifacts, Tools, Languages
- **Ecosystem Understanding**: Configurable Innovation Ecosystem Pattern
- **System-Discipline Integration**: Bridged by System Context Model
- **Management Framework**: Configurable EI Pattern
- **Uniform Model Wrappers**: Configurable Model Metadata Pattern
- **V4I Roadmap**: V4 Institute Goals Configured for Project
- **Standardized Tools and Information**: Configurable for Methodology Items
- **Information Ecosystem**: Configurable TMR Pattern
Project Deliverables (TMR Project Applications)

Other Launch Projects
- Targeting: Identify V4I launch projects and other projects for application of TMR assets.

Trusted Model Repository Features Emphasized
- Identify priority TMR Features for each launch project.
- Identify TMR Phase 2 priority features.

Overall Ecosystem
- Configure ASELCM Innovation Ecosystem Pattern, for each project.

Tool Specific Aspects & Demo
- Ph1: Demonstrate both advanced SysML and simple desktop spreadsheet cases;
- Ph 1: Invite third party COTS partners to project;
- Ph 2: Demo in multiple third party COTS and SEG HPC environments

System Context Model
- For each project’s computational model, . . .
- Generate System Context Model

Uniform Model Wrapper
- For each project’s computational model, . . .
- Configure the Model Wrapper (MCP)
Thank You