Project: V4 Institute Framework, Assets, Support

INTRODUCTION
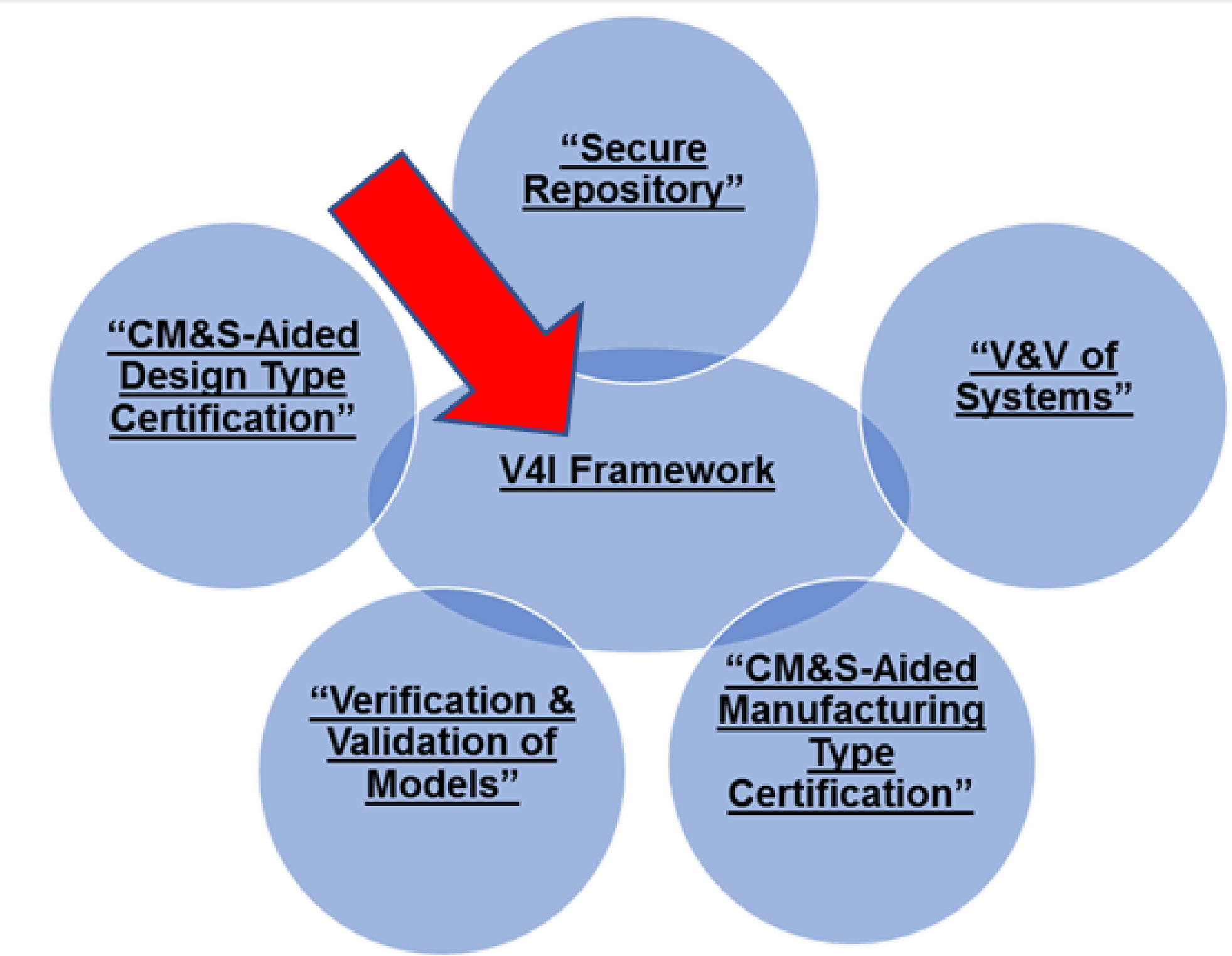
Project Description   Identify and illustrate (through the other five V4I Launch Projects) the principles, processes, and methods for improving the cradle-to-grave life cycle management of systems based on virtual models, using the assets of the V4I Framework.

System of Interest   SOI Pattern System 2: Life Cycle Management System

Question being Answered   What are the elements of the V4I Framework, and how are they applied to improve the virtual model-based life cycle management of systems?
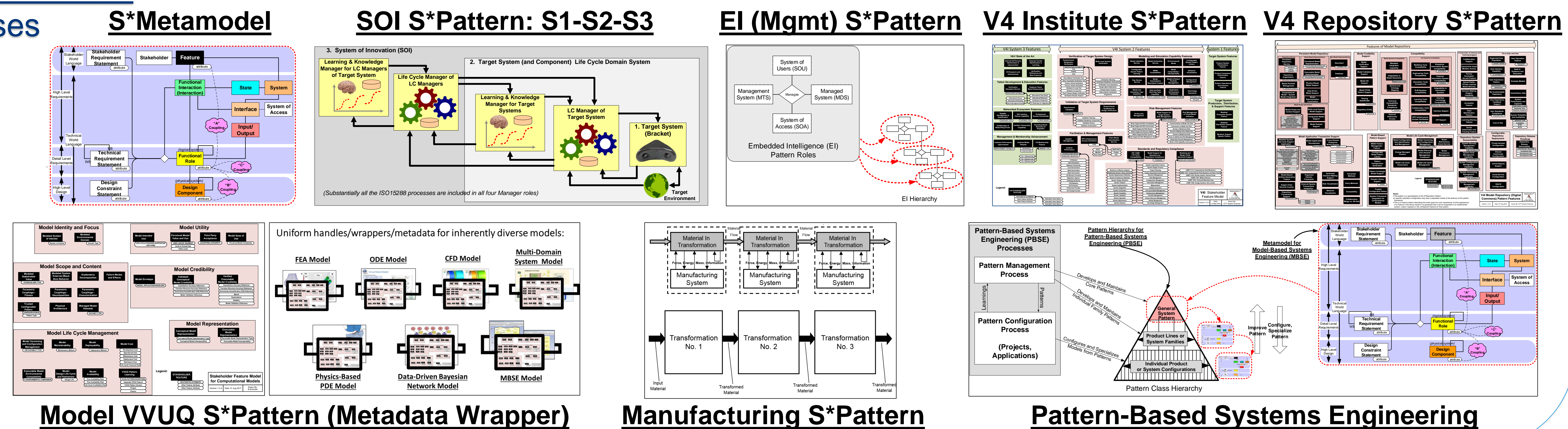

PROJECT APPROACH SUMMARY: The V4 Institute Framework

Configurable Information-Process-Automation reference framework:

- S*Metamodel, mapped to COTS tools, artifacts, processes
- System of Innovation Pattern (S1-S2-S3)
- Embedded Intelligence (EI) Pattern
- V4I Repository Pattern
- V4I Enterprise Pattern
- Model VVUQ Pattern
- General Manufacturing Pattern
- S*MBSE/PBSE Methodology

Estimated Project Duration:

- Aligned to Projects 1-5 Schedules

S*Metamodel   SOI S*Pattern: S1-S2-S3   EI (Mgmt) S*Pattern   V4 Institute S*Pattern   V4 Repository S*Pattern

Model VVUQ S*Pattern (Metadata Wrapper)   Manufacturing S*Pattern   Pattern-Based Systems Engineering

EXPECTED BENEFITS

- Provide uniform metadata "wrapper" description of diverse models, across technologies, domains, modeling methods, originators, tools.
- Improve compatibility of models for enhanced machine exchange and integration along with enhanced cross-team understanding.
- Increase ability to re-use trusted models in the form of configured patterns.
- Enable the use of model VVUQ techniques for diverse models at multiple component and system levels.
- Coordinate and integrate product application, production, and distribution models.
- Improve understanding to plan, integrate, manage COTS computational model toolchains, life cycle management tools, infosystems.
- Provide robust, credible means to manage provenance of trusted models carrying investment in credibility, enhance model supply chains.
- Means of planning models and model based methods, and justifying investment in same.
- Exploit evolving capabilities of new modeling tools and technologies while preserving investment in historical model IP.

PROJECT TEAM

- ICTT System Sciences
- V4I Project Teams 1-5

FUTURE WORK

- Support additional V4I Projects, Targeted Domains, Members