

# Integrating System Models around Decisions

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**Abstract.** Decisions are the primary future-creating human thinking process. Every system or product in existence today is the direct result of a network of interdependent decisions that have been framed, analyzed, made and implemented. As such, a decision model is ideally suited to serve as the integrative framework for Systems Engineering knowledge, processes and practitioners. The U.S. Army Tank Automotive Research Development and Engineering Command (TARDEC) has developed an Advanced Systems Engineering Capability (ASEC) framework that leverages a decision model as the integrative mechanism to provide the context for all other system models. These models, known collectively as the "5-M Model" of integrated systems knowledge, include: SE Process (Vee) model, Math/Physics models, Lifecycle models, Architecture models (e.g. SysML), Roadmap models. This paper will describe the relationships between these models as implemented within the ASEC framework. The role of each model in informing decisions to improve decision confidence, speed, quality, leverage and implementation will be explained. A metrics strategy to confirm these benefits will be proposed.