Vitech

EMPowering
Next-Generation
Systems Engineering

GENESYS™
CORE™

Insight Through Integration
Increasing complexity, shrinking budgets, shorter time to market – three realities driving change in the systems engineering domain. The practice is shifting from traditional document-centric approaches to model-based systems engineering (MBSE). But along the way, many teams fall into the trap of diagram-based systems engineering instead.

Achieving the value of MBSE – and the larger vision of model-based engineering – requires more than simply drawing diagrams or creating disjoint models. It requires building integrated systems models with meaning – models that capture the critical interrelationships within the system and across the system design process. It means developing a cohesive knowledge repository, a single source of truth for your project and your team. And it can be done with less effort than diagram-based systems engineering if you choose the right systems engineering environment.

Stop drawing and start modeling. Stop spending time engineering your tool suite and start engineering your system. GENESYS and CORE from Vitech are the only truly comprehensive MBSE software products available across the industry. Built by systems engineers for systems engineers, the Vitech solution delivers integrated support from initial concept through final design to enable your project success.
COLLABORATE AND INNOVATE

From early-stage brainstorming to final detailed design, viewing the problem and solution space through multiple viewpoints enhances insight and creativity. Managing the “bookkeeping” of systems engineering and delivering guaranteed consistency through a model-centric approach, GENESYS and CORE free your team to focus on inspiration and design exploration. The rich library of representations – formal and informal, graphical and textual – automatically generated from the underlying model enhance communication across team members and stakeholders alike, increasing shared understanding and improving alignment, engagement, and overall project effectiveness.

Good systems design requires innovation, engineering, and rigorous analysis. GENESYS and CORE provide simple viewpoints to construct, communicate, and analyze the system design with a powerful underlying model guaranteeing consistency and integrity from requirements through architecture to verification and validation. Design integrity checks go far beyond simplistic diagram consistency to ensure design completeness and integrity, eliminating entire classes of systems errors. From Day 1 and your first concept to the final detailed design, the underlying system model is directly executable – no coding or advanced development required – delivering a virtual system prototype confirming design validity and performance.

GENESYS™

Built upon insights from over 20 years with CORE, GENESYS is Vitech’s next-generation software delivering connected systems engineering across the enterprise. Reengineered from the ground up, GENESYS implements proven model-centric approaches leveraging modern technologies in a completely open architecture. The result is the power of a full MBSE environment with the usability of modern office tools integrated with your desktop, engineering, and enterprise environments to deliver your data your way.

ENGINEER WITH RIGOR
Whether developing a next-generation aircraft, an unprecedented medical device, or reengineering an enterprise, the systems perspective is essential to developing solutions for problems that have any meaningful degree of complexity. Maintaining the holistic viewpoint and understanding the interaction between requirements, system behavior, and physical architecture is key to effectively navigating the design space. Anything less fundamentally breaks the systems perspective, dramatically limiting the effectiveness of systems engineering and increasing life-cycle cost.

Built on more than 40 years of proven results, Vitech’s GENESYS and CORE software solutions both deliver rich model-centric capabilities to underpin your project success. Regardless of which product you choose, a single integrated model connects the problem (from concept of operations to formal requirements) through solution (both logical behavior and physical architecture) to verification, validation, and even program management. A rich library of diagrams – classic systems engineering representations, modern SysML diagrams, and more – enables easy drag-drop model construction. A diverse toolbox of capabilities empower your team as you engineer your system. Throughout it all, the underlying model guarantees consistency and alignment – across diagrams, across deliverables, across your team, and across your solution.

**RESPOND WITH AGILITY**

Working from a live integrated design repository, GENESYS and CORE maintain a single source of truth for your system design effort and your systems engineering team. Key knowledge is shared across the team and preserved across project life-cycle phases, increasing alignment and reducing errors. With the latest information available on demand, team members operate at “thinkspeed” rather than searching multiple documents or querying multiple disjoint (and inconsistent) tools for the critical data they need. Sharing a common context and a complete picture spanning the systems engineering space enables team members to respond quickly to customer needs, changing requirements, and new design ideas alike with updated diagrams, artifacts, and systems specifications generated automatically at the touch of a button.
Maintaining an integrated model across the systems engineering domains and throughout the life cycle delivers robust traceability from initial need through implementation and test. GENESYS and CORE move beyond this foundation to elicit the design rationale alongside the system design. Yielding insight from integration, this richness enables a project team to act decisively with confidence in their decisions and designs backed by extensive project knowledge. Integrating the thinking, the system design, the key artifacts, and the surrounding rationale, GENESYS and CORE enable your team to define the correct problem and solve the problem correctly.

Representing over 20 years of insight, development, and application on literally thousands of projects worldwide, CORE is Vitech’s original and most feature-rich systems engineering software. With unmatched power and a proven heritage, CORE continues to deliver critical systems engineering support for existing projects as well as new customers seeking a focused, stand-alone systems engineering environment.

COMMIT WITH CONFIDENCE
UNLOCK THE POWER OF MBSE WITH VITECH

SOFTWARE BLENDING PROVEN APPROACHES WITH THE LATEST INNOVATIONS

Developing complex systems requires more than office software, requirements tools, and drawing packages deliver. Satisfying customers under schedule and budget constraints requires an integrated solution—to synchronize requirements, analysis, and architecture; to guarantee consistency and reduce risk; to deliver technical and management insight into complex concerns and uncertainty. Vitech’s software is that solution.

Adopting MBSE requires far more than software features and a rich user interface. It requires an experienced partner ready to assist wherever you are in your journey. Staffed by experts backed by deep product and domain experience, Vitech’s support team continuously expands its library of on-demand resources while remaining accessible to personally address your questions.

EXPERT SERVICES TO ADVANCE YOUR SYSTEMS INITIATIVES

With expertise ranging from the latest MBSE practices to extending Vitech software to maximize your effectiveness, Vitech engineers assess your needs and tailor the right solution for you. Whether delivering advanced education on specialized topics, providing third-party reviews, mentoring your team, or supplementing your systems staff, our expert engineers help enable your organization’s success.

TRAINING TO RAISE YOUR SYSTEMS ENGINEERING PROFICIENCY

Designed to elevate your team’s MBSE command, Vitech’s training reflects far more than product knowledge. Delivered by practicing senior and principal systems engineers, Vitech courses cover key systems concepts, the latest processes and methods, and the software capabilities to support your systems efforts.

Systems engineering continues to evolve to meet the needs of today and tomorrow. Committed to the practice, Vitech’s history of innovation reaches back over 40 years with a rich heritage of contributions to MBSE and a supporting methodology. With impactful pieces ranging from A Primer for Model-Based Systems Engineering to webinars, blogs, and speaking events, Vitech experts are dedicated to changing the landscape of systems engineering for the better.

Vitech

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