

WHITEPAPER

Human vs. AI Process



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EXECUTIVE SUMMARY

The INCOSE International Symposium (IS25) in 2025 focused on the integration of artificial intelligence (AI) within systems engineering, featuring a keynote by Dr. Langdon Morris. In collaboration with SPEC Innovations, a study was conducted to explore how AI can enhance systems engineering workflows while adhering to real-world constraints like cost and schedule. The research modeled three approaches: a traditional Human-Only Process, a truncated version lacking verification and validation (V&V) and risk management, and a Human-AI Teaming Process where AI assists in tasks such as requirements generation and risk analysis. Each model was simulated using Innoslate, a cloud-based Model-Based Systems Engineering platform, to assess their efficiency in terms of time and cost.

The findings revealed that the Human-AI Teaming model significantly outperformed both the traditional and truncated models. Results demonstrated a -71.20% and -71.70% cost & time reduction compared to the full Human-Only model without sacrificing essential lifecycle rigor. This study underscores the potential of AI to enhance efficiency and maintain quality in systems engineering, suggesting that responsible integration of AI can lead to substantial improvements in project outcomes.

INTRODUCTION

The INCOSE International Symposium (IS25) is one of the premier international gatherings for systems engineering professionals, thought leaders, and innovators representing major companies in the industry. Hosted annually by the International Council on Systems Engineering (INCOSE), the symposium serves as a forum where emerging trends, tools, and methodologies are explored in depth. The 2025 event (IS25) continued this by spotlighting the intersection of systems engineering, artificial intelligence (AI), and SysML v2 as its main themes, with a keynote delivered by renowned innovator, futurist, author, consultant, and Althinker, Dr. Langdon Morris.¹

As part of our support for this keynote, our team at SPEC Innovations was approached to conduct a study on the implications of integrating AI into systems engineering workflows. The core motivation was to examine whether and how AI can improve the efficiency and rigor of systems engineering while operating within real-world constraints, specifically cost, schedule, and performance. To investigate this, we modeled and compared three distinct approaches to executing full-lifecycle systems engineering that we see commonly in the industry:

- **Human-Only Process (Full):** Representing the traditional, SE lifecycle that is adopted and practiced in contracts and projects industry wide.
- **Human-Only Process (w/o V&V and Risk Management):** A deficient yet commonly adopted approach where Risk management, V&V, and Testing are deprioritized to reduce costs or meet tight schedules.
- **Human-AI Teaming Process:** A modern, assisted approach where AI tools accelerate requirements generation, risk analysis, and test case generation, while humans remain in the loop for validation and oversight.

These models were developed using structured action diagrams to illustrate the sequential flow of tasks, decision points, and interactions unique to each process approach. To enable realistic simulation, key entities and activities were assigned time and cost parameters based on triangular distributions, allowing variability to be introduced for each parameter using defined minimum, most likely, and maximum values. This approach reflected the inherent uncertainty and variability commonly encountered in real-world systems engineering projects. Each process model was then executed through simulation to generate quantitative data across cost and time.

The objective of this paper is to present the model structure and rationale behind each process, describe the simulation approach used to evaluate them, and discuss the results in the context of the evolving role of AI in systems engineering. Ultimately, we aim to demonstrate that Human-AI teaming is not only viable but highly effective in enabling efficient and high-quality systems engineering that you can do on Innoslate today. Through this work, we hope to contribute to a broader understanding of how AI can be responsibly and strategically integrated into SE practice across industry sectors.

BACKGROUND

Langdon Morris has been a leading voice at the intersection of artificial intelligence, innovation strategy, and systems thinking. His recent publications, including *The AI Nation* (2024)², highlight how organizations can achieve strategic advantage by embedding AI into their core systems and decision-making processes. In *The AI Future* (2023)³, he presents a forward-looking view on the convergence of disruptive technologies, advocating for AI-integrated systems thinking to navigate complexity and enhance adaptability. At INCOSE IS25, Morris introduced the AI Impact & Strategy Workbook (2025) during a private workshop, an amazing self-assessment tool that enables organizations to evaluate their readiness to integrate AI into their operational workflows. His extensive portfolio of publications and research continues to serve as a critical resource for innovators and practitioners across the systems engineering community.

The concept of Human-AI teaming is gaining popularity within systems engineering as AI technologies mature and their use in critical domains is becoming more accessible and accepted. Rather than replacing human engineers, AI is being viewed as a force multiplier, capable of handling repetitive,

data-intensive tasks such as requirements generation, risk analysis, test generation, and more. In this collaborative model, humans retain responsibility for final critical thinking, oversight, and contextual judgment, while AI contributes processing power and scalability at levels that far exceed human capability.

Despite advancements in tools and methodologies, traditional systems engineering still struggles with persistent challenges related to cost, schedule, and performance. These difficulties are often exacerbated by reliance on legacy systems, limited interoperability, and the inherent complexity of modern engineered systems. In practice, some projects compromise the integrity of the full lifecycle by deprioritizing critical activities such as risk management, verification, validation, and testing, in an attempt to meet deadlines or budget constraints. However, these decisions frequently lead to eventual delays, operational failures, or degraded system performance, undermining the very cost or time savings they were intended to achieve. This tendency to “cut corners” in SE worsens stakeholder trust and impacts short/long-term value delivery.

METHODOLOGY

The modeling and simulation for this study were conducted using Innoslate, a cloud native web-based Model-Based Systems Engineering (MBSE) platform developed by SPEC Innovations. Innoslate supports the full systems engineering lifecycle and includes native capabilities for creating, analyzing, and simulating activity-based models through its Action Diagram.

Action Diagrams in Innoslate enable users to model structured workflows by defining actions, decision logic, branching, concurrency, and resource interactions. These diagrams serve as executable process models that can be enhanced with cost and time parameters, which are then used in simulations to estimate performance outcomes and resource utilization. Simulations were run using Innoslate's Discrete Event and Monte Carlo simulation engine, which processes each model based on assigned probabilistic cost and time distributions and execution logic.

HUMAN ONLY PROCESS (FULL)

The first process model represents a traditional, full-lifecycle systems engineering approach conducted exclusively by human engineers. This model adheres strictly to best practices by incorporating all critical phases, including context analysis, requirements generation, traceability, risk management, and knowledge base updates. It serves as the benchmark against which the other two models were compared.

The model was constructed using Innoslate's Action Diagram capability and is broken down into hierarchical decompositions to reflect the nested nature of systems engineering workflows. The top-level flow begins with Context Analysis (H.1), which itself decomposes into activities such as Understanding the Problem (H.1.1) and Decomposing the Statement (H.1.2).

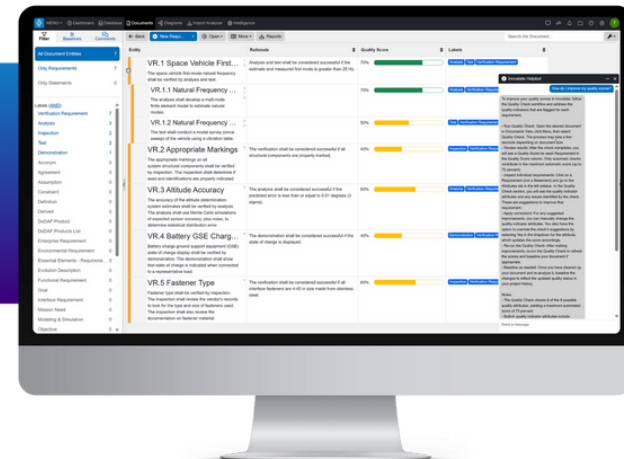
See Innoslate's AI capabilities firsthand.

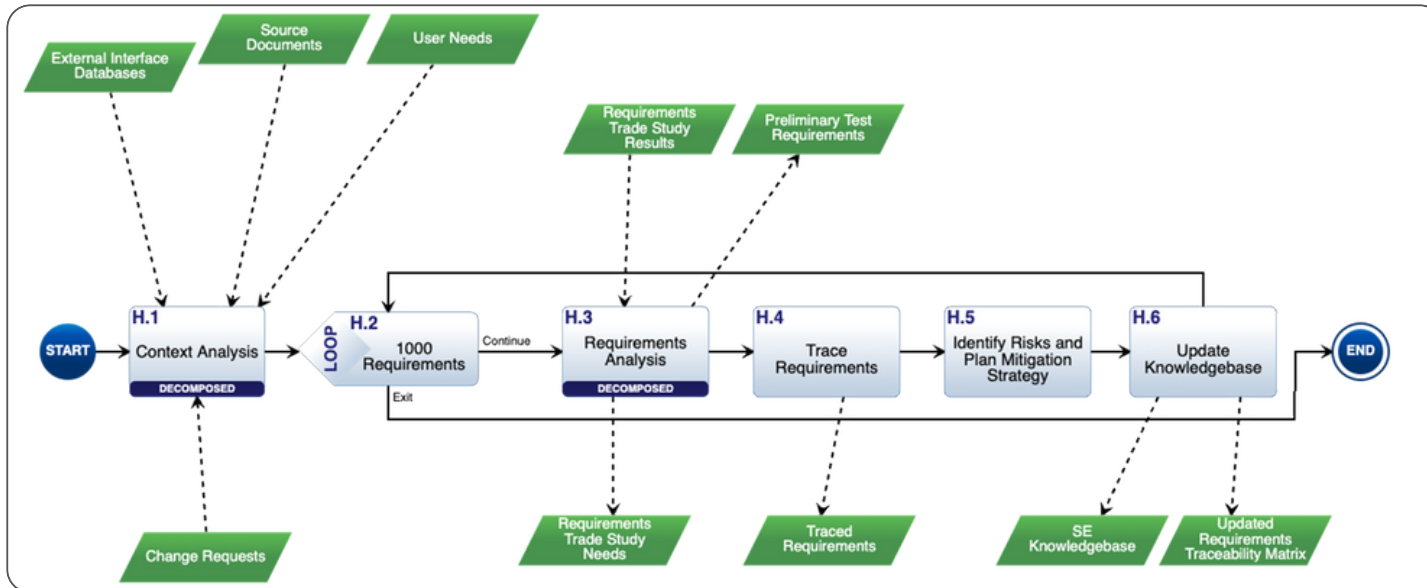


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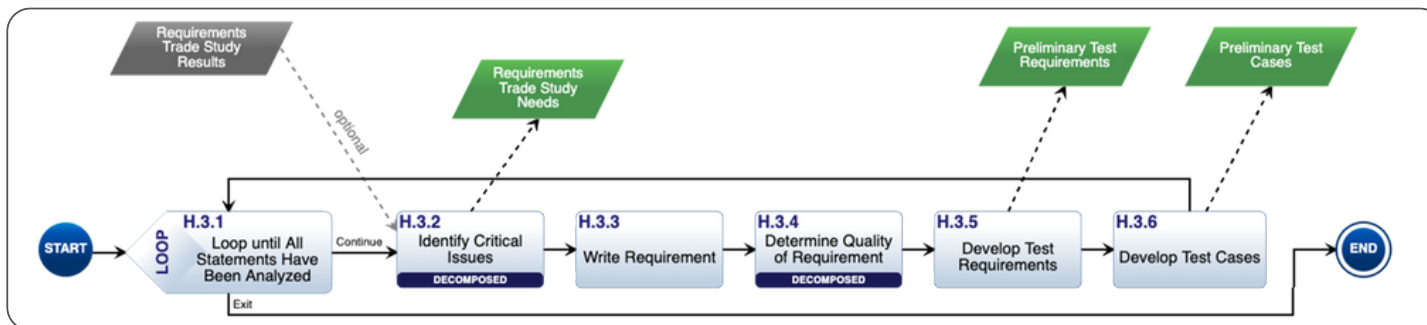


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H. Engineering Process (Human Only)



H.3 Requirements Analysis

The process proceeds to Requirements Generation (H.2), which extrapolates 1000 requirements through a loop. Within Requirements Analysis (H.3), the model iteratively processes all requirement statements through steps including Identifying Critical Issues (H.3.2), Writing Requirements (H.3.3), and Determining Requirement Quality (H.3.4); the latter of which checks for verifiability before progressing. Trade studies are triggered when critical issues are detected, supporting informed and traceable decision-making.

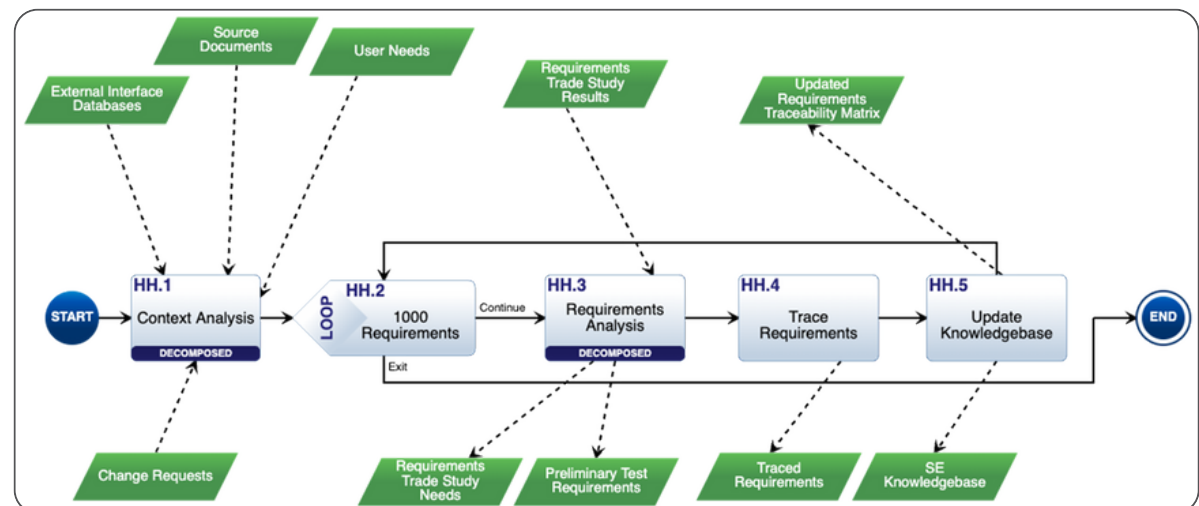
Next, the process proceeds to Trace Requirements (H.4), Identify Risks and Plan Mitigation Strategy (H.5), and Update Knowledgebase (H.6). These stages ensure that requirements are fully traceable to their sources and that associated risks are documented and addressed prior to finalizing outputs such as the Requirements Traceability Matrix (RTM).

To enable simulation, each action within the process was assigned both time and cost parameters. Duration estimates were modeled using triangular distributions, capturing uncertainty by defining minimum, most likely, and maximum values. Costs were assigned based on labor categories (e.g., Junior Engineer, Risk Engineer) with corresponding hourly rates or fixed rates. Table 1 in the Appendix details the durations and costs allocated per entity in the diagram.

Overall, this Human-Only process represents the “gold standard” systems engineering process without any AI integration. While it requires significant human labor and upfront investment, it minimizes the likelihood of costly downstream failures and provides the foundation for evaluating the efficiency gains of alternative models, along with their associated cost and duration consequences.

HUMAN ONLY PROCESS (FULL)

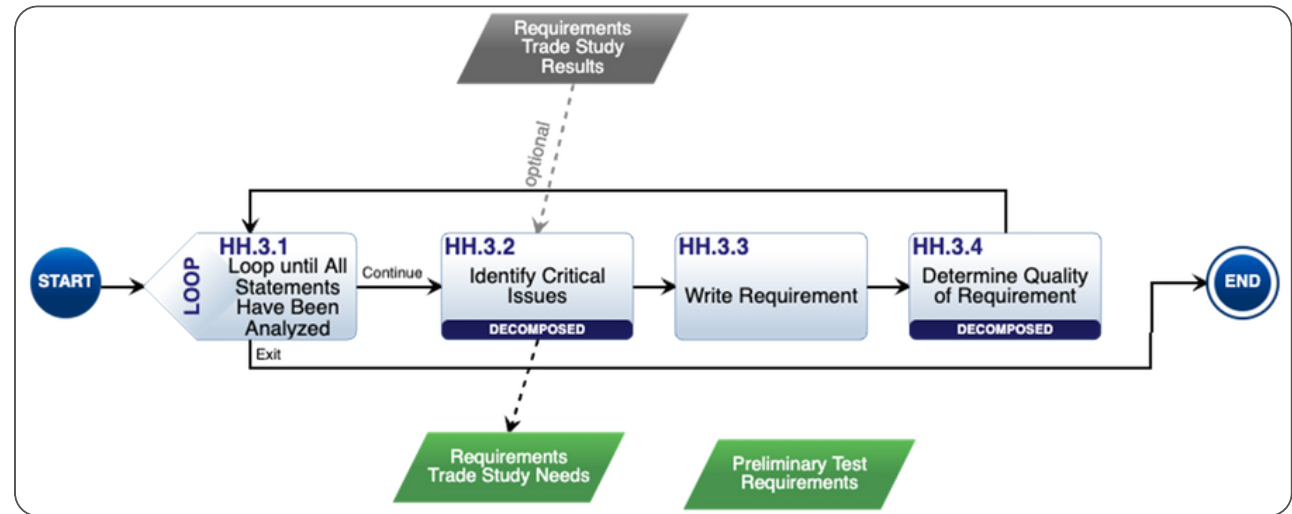
This second process model represents a reduced-scope systems engineering approach in which key lifecycle activities (V&V and Risk Management) are intentionally omitted. While the model still follows a structured workflow for context analysis, requirements generation, and traceability, it reflects a limited execution pattern often adopted in projects constrained by cost or schedule pressures.



HH. Engineering Process without Risk and V&V (Human Only)

This model begins with Context Analysis (HH.1), which includes decomposed steps for Understanding the Problem (HH.1.1) and Decomposing the Statement (HH.1.2). It continues through Requirements Generation (HH.2) and a loops Requirements Analysis (HH.3) phase similar to the full process, involving activities such as identifying critical issues, writing requirements, and determining quality

However, this model omits both the development of test requirements and test cases, as well as any activity related to risk identification or mitigation. These activities, which are essential for ensuring that requirements are testable and that project risks are proactively managed, are skipped entirely. The flow concludes with Trace Requirements (HH.4) and Update Knowledgebase (HH.5).



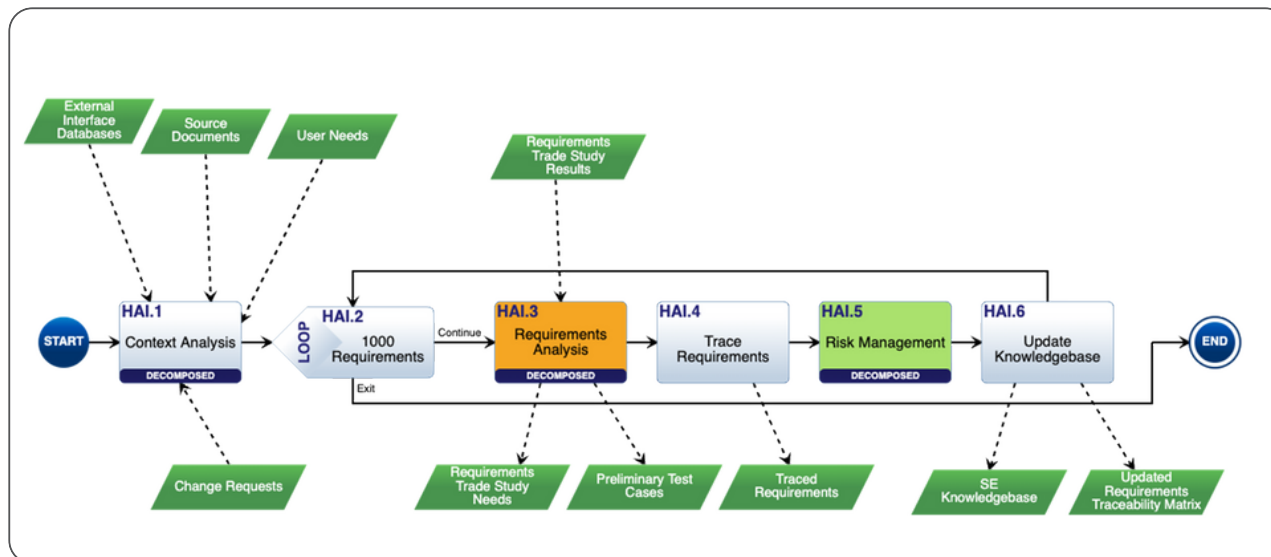
HH.3 Requirements Analysis

To support simulation, each step was assigned both time and cost parameters. Durations were modeled using triangular distributions to account for uncertainty and variability. Labor costs were applied based on predefined engineering roles and hourly rates. Table 2 in the Appendix details a subset of these values used in the simulation.

This model reflects a common industry shortcut, where time or cost constraints lead teams to sacrifice validation and risk activities. While it can produce short-term gains in speed or budget, it can undermine project success in the long term. This model's performance in simulation will be used to quantify those tradeoffs against the baseline and Human AI models.

HUMAN & AI TEAMING

The third process model represents a Human-AI Teaming approach, where AI agents are embedded into the systems engineering workflow to assist with key activities, specifically requirements generation, risk analysis, and test case development. Rather than replacing the human engineer, these AI agents enhance workflows by accelerating high-effort, repeatable tasks, while human engineers hold the significant responsibility for validation, oversight, and "final" decision-making.

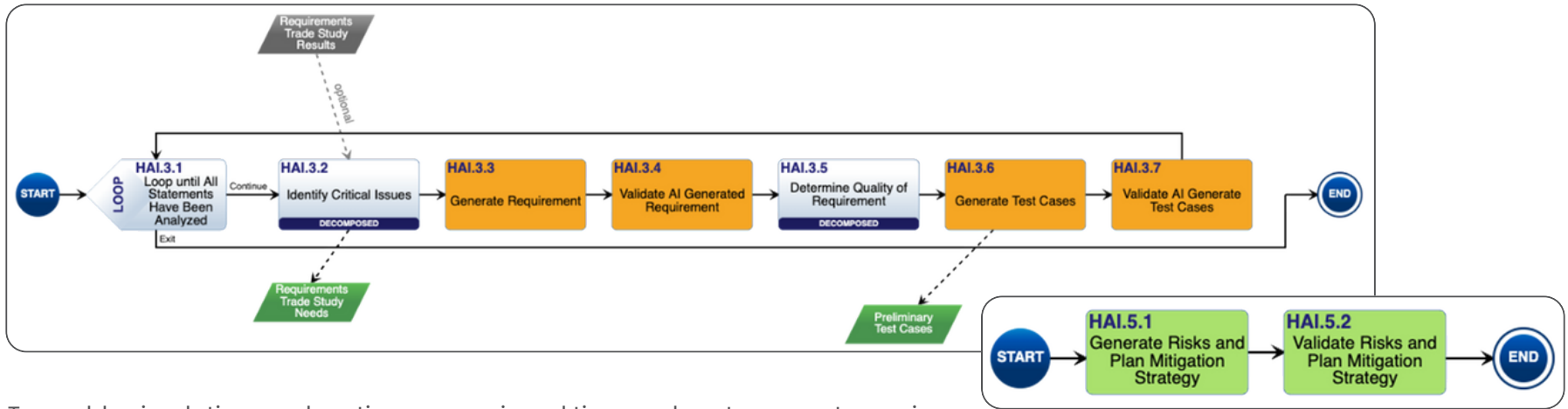


The model begins with Context Analysis (HAI.1) and proceeds to the Requirements Generation loop (HAI.2), which includes Requirements Analysis (HAI.3). Within this phase, Human-AI collaboration is most apparent:

- AI performs automated Requirement Generation (HAI.3.3), which is immediately followed by human validation (HAI.3.4).
- AI Generates Test Cases (HAI.3.6), with corresponding human validation steps (HAI.3.7).

Note: Humans remain in the loop through checkpoints, decision gates, and quality assessments.

In the Risk Management phase (HAI.5), AI is used to identify potential system-level risks and propose mitigation strategies (HAI.5.1), which are then reviewed and validated by human Risk Engineers (HAI.5.2).



To enable simulation, each action was assigned time and cost parameters using triangular distributions, consistent with the other models. AI steps were given lower durations to reflect their speed advantage, and the cost structure reflects a blended use of engineering labor and automated tooling. AI content generation and model operation costs (ChatGPT 4o-mini) were explicitly included to ensure realistic cost modeling. The assigned parameters are shown in Table 3 in the Appendix.

This model was designed to illustrate how AI-augmented engineering can deliver cost- and time-efficient systems engineering without sacrificing validation or risk management. In the analysis, its performance will be compared to the Human-Only and Truncated Human-Only models to highlight the practical benefits of responsible Human-AI teaming.

FINDINGS

SIMULATION RESULTS

The simulation results for the three process models: Human-Only (Full), Human-Only without Risk Management and V&V, and Human-AI Teaming are presented below. Each subsection describes the quantitative outcomes and charts that show notable trends in the time and cost distributions.

HUMAN-ONLY (FULL PROCESS)

The Human-Only (Full Process) model represents the "gold standard" baseline, complete engineering workflow, including context analysis, requirements generation, validation and verification (V&V), and risk management.

- **Mean Duration:** 1.57 months (~47 days) with a standard deviation of 3.51 hours.
- **Mean Cost:** \$70,172 with a standard deviation of \$208.

The time treemap reveals a broad distribution of effort, with significant portions allocated to requirements generation, verification and validation (V&V), and risk management. The cost bar chart reflects this same pattern, highlighting the labor- and cost-intensive nature of the human-only approach. While comprehensive, this model is both time-consuming and expensive, modeling the budget overruns and schedule delays often encountered in real-world projects that use this process model.



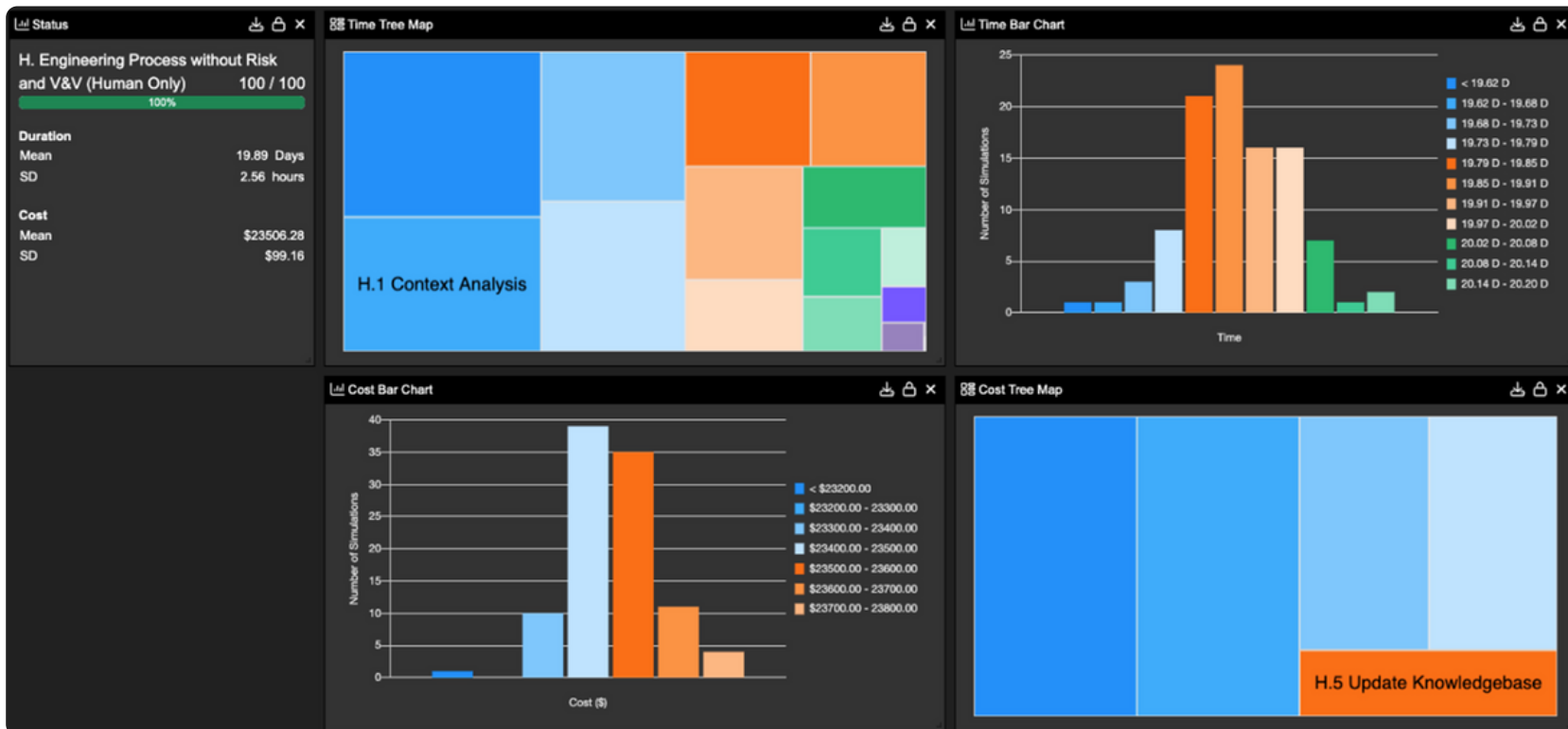
H. Engineering Process (Human Only) Simulation Results

HUMAN-ONLY WITHOUT RISK MANAGEMENT AND V&V

The Truncated Human-Only model omits the formal risk management and V&V steps, allowing the process to focus solely on requirement generation and related core activities.

- **Mean Duration:** 19.89 days with a standard deviation of 2.56 hours.
- **Mean Cost:** \$23,506 with a standard deviation of \$99.

The time treemap shows that most of the schedule is concentrated in requirement analysis and supporting steps, with no blocks allocated for quality assurance activities. Cost distribution is correspondingly shortened. This model demonstrates significant time (-57.8%) and cost (-66.5%) reductions compared to the full human-only model, achieved by skipping critical lifecycle stages.



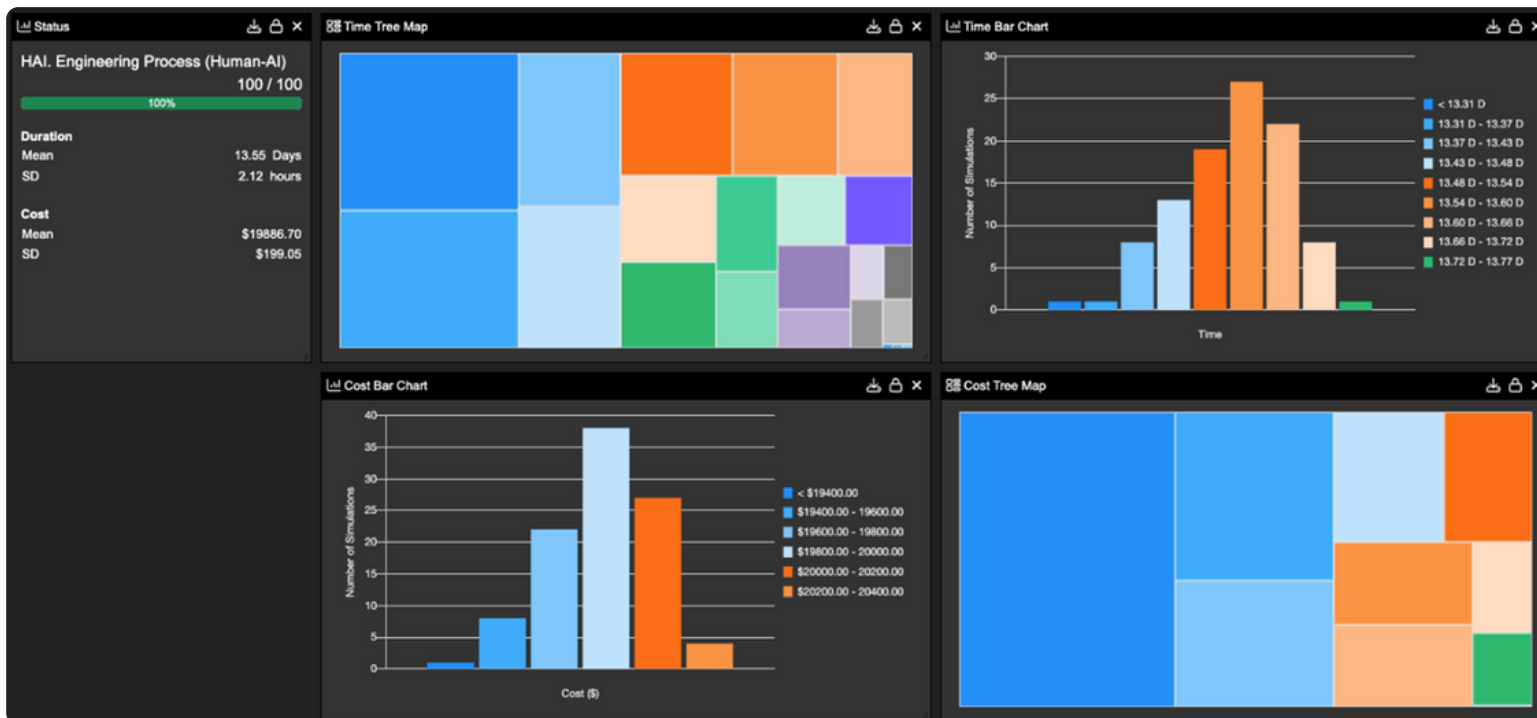
HH. Engineering Process Without Risk and V&V (Human Only)

HUMAN-AI TEAMING

The Human-AI Teaming model integrates AI agents in Innoslate into the engineering workflow to perform tasks such as requirements generation, risk identification, and test case creation, while human engineers focus on validation and complex decision-making.

- **Mean Duration:** 13.55 days with a standard deviation of 2.12 hours.
- **Mean Cost:** \$19,887 with a standard deviation of \$199.

The time treemap shows reduced blocks for generation activities, replaced by shorter AI-executed steps and targeted human validation phases. Cost savings are even more pronounced (-71.7% compared to full human-only), achieved without skipping key lifecycle phases. This points to AI's ability to deliver both efficiency and completeness without causing direct harm to your project cost and schedule.



HAI. Engineering Process (Human-AI)

ANALYSIS

See Table 4 in the Appendix for a full breakdown analysis of the Human-AI Model.

Note: Across all 3 simulations, the variation in results was very small. In statistical terms, the coefficient of variation (CV) for time was $< \sim 0.7\%$ and for cost was $\leq \sim 1.0\%$, meaning results stayed tightly clustered around the average values. In practical terms, each simulation run produced nearly identical outcomes for both time and cost defined by the triangular distributions.

The Human-AI model clearly beats “cutting corners.” Even when compared to the truncated human-only approach, it was both faster and cheaper, while still preserving the full lifecycle rigor of requirements generation, V&V, and risk management. The efficiency gains come from shifting much of the generation workload to AI, freeing human engineers to focus on validating AI outputs and performing targeted risk analysis.

The baseline Human-only model remains professionally thorough, but also the slowest and most expensive. At roughly 47 days and \$70k, it sets a strong reference point for

completeness, but also highlights where process acceleration is possible and frankly needed. The truncated human-only model, by comparison, appears more efficient at first glance and in the real world tends to keep stakeholders “happy,” but the reduction in time and cost comes from skipping significant V&V

and risk activities, a decision that tends to cause more harm than good once the full project lifecycle plays out. Taken together, these results show that AI assistance can deliver real and meaningful gains in cost, schedule, and performance without sacrificing process integrity.

These models are intended as best educated technical guess simulations, not precise predictions. Actual results will vary depending on organizational factors such as team size, skill mix, tool maturity, governance processes, and product complexity. Our simulations used triangular distributions with defined spreads to approximate realistic variability, but the outputs should be viewed as directional indicators rather than absolute forecasts.

CONCLUSIONS AND FUTURE WORK

This study set out to examine three systems engineering process models: Human-Only (Full), Human-Only without V&V and Risk Management, and Human-AI Teaming, using Innoslate's modeling & simulation capabilities to evaluate time and cost performance. The results provide a clear picture: the Human-AI Teaming model consistently outperformed both human-only models in efficiency. Compared to the full Human-Only process, the Human-AI model achieved a 71.2% reduction in time and a 71.7% reduction in cost, without sacrificing critical assurance activities. Even against the truncated human-only model, which skipped key lifecycle steps, Human-AI Teaming delivered additional gains in both schedule and cost. These findings reinforce the potential of AI to serve as a force multiplier in systems engineering.

Future work should explore:

- Sensitivity analyses to understand how changes in requirement volume, AI throughput, and validation depth affect results.
- Integration metrics that capture not only time and cost, but also quality, defect rates, modeling, and stakeholder satisfaction over the project lifecycle.
- Scaling studies to evaluate performance across small, medium, and large organizations.
- Expanded AI applications, as we develop more agentic capabilities on Innoslate.

In summary, the evidence from this study makes one point clear: "Integrating AI into your systems engineering workflow is no longer a speculative advantage; it is a practical and proven method to enhance project cost, schedule, and performance."



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APPENDIX

Entity	Duration	Cost Entity	Cost Amount	Cost Unit	Cost Rate
H. Engineering Process (Human Only)					
H.1 Context Analysis	12.0 Minutes				
H.1.1 Understand the Problem	triang.dist (2.0, 10.0, 6.0) Minutes	C.1 Junior Engineer	60	\$	Per Hour
H.1.2 Decompose Statement	triang.dist (2.0, 10.0, 6.0) Minutes	C.1 Junior Engineer	60	\$	Per Hour
H.2 1000 Requirements	1.0 Seconds				
H.3 Requirements Analysis	32.427 Minutes				
H.3.1 Loop until All Statements Have Been Analyzed	1.0 Seconds				
H.3.2 Identify Critical Issues	5.25 Minutes	C.1 Junior Engineer	60	\$	Per Hour
H.3.2.1 Critical Issue?	triang.dist (0.5, 1.0, 0.75) Minutes				
H.3.2.2 Determine Options and Perform Trade Studies	triang.dist (2.0, 3.0, 2.5) Minutes				
H.3.2.3 Resolve Issues with Customer	triang.dist (1.0, 3.0, 2.0) Minutes				
H.3.3 Write Requirement	triang.dist (5.0, 15.0, 10.0) Minutes	C.1 Junior Engineer	60	\$	Per Hour
H.3.4 Determine Quality of Requirement	8.0 Minutes	C.2 Senior Engineer	100	\$	Per Hour
H.3.4.1 Statement Verifiable?	triang.dist (0.2, 1.0, 0.5) Minutes				
H.3.4.2 Coordinate Changes to Make Statement Verifiable	triang.dist (3.33, 10.0, 6.66) Minutes				
H.3.5 Develop Test Requirements	triang.dist (5.0, 15.0, 10.0) Minutes	C.1 Junior Engineer	60	\$	Per Hour
H.3.6 Develop Test Cases	triang.dist (5.0, 15.0, 10.0) Minutes	C.1 Junior Engineer	60	\$	Per Hour
H.4 Trace Requirements	triang.dist (5.0, 15.0, 10.0) Minutes	C.1 Junior Engineer	60	\$	Per Hour
H.5 Identify Risks and Plan Mitigation Strategy	triang.dist (10.0, 30.0, 20.0) Minutes	C.3 Risk Engineer	80	\$	Per Hour
H.6 Update Knowledgebase	triang.dist (2.0, 5.0, 3.5) Minutes	C.1 Junior Engineer	60	\$	Per Hour

Table 1

Entity	Duration	Cost Entity	Cost Amount	Cost Unit	Cost Rate
HH. Engineering Process Without Risk and V&V (Human Only)					
HH.1 Context Analysis	12.0 Minutes				
HH.1.1 Understand the Problem	triang.dist (2.0, 10.0, 6.0) Minutes	C.1 Junior Engineer	60	\$	Per Hour
HH.1.2 Decompose Statement	triang.dist (2.0, 10.0, 6.0) Minutes	C.1 Junior Engineer	60	\$	Per Hour
HH.2 1000 Requirements	1.0 Seconds				
HH.3 Requirements Analysis	32.427 Minutes				
HH.3.1 Loop until All Statements Have Been Analyzed	1.0 Seconds				
HH.3.2 Identify Critical Issues	5.25 Minutes	C.1 Junior Engineer	60	\$	Per Hour
HH.3.2.1 Critical Issue?	triang.dist (0.5, 1.0, 0.75) Minutes				
HH.3.2.2 Determine Options and Perform Trade Studies	triang.dist (2.0, 3.0, 2.5) Minutes				
HH.3.2.3 Resolve Issues with Customer	triang.dist (1.0, 3.0, 2.0) Minutes				
HH.3.3 Write Requirement	triang.dist (5.0, 15.0, 10.0) Minutes	C.1 Junior Engineer	60	\$	Per Hour
HH.3.4 Determine Quality of Requirement	8.0 Minutes	C.2 Senior Engineer	100	\$	Per Hour
HH.3.4.1 Statement Verifiable?	triang.dist (0.2, 1.0, 0.5) Minutes				
HH.3.4.2 Coordinate Changes to Make Statement Verifiable	triang.dist (3.33, 10.0, 6.66) Minutes				
HH.4 Trace Requirements	triang.dist (5.0, 15.0, 10.0) Minutes	C.1 Junior Engineer	60	\$	Per Hour
HH.6 Update Knowledgebase	triang.dist (2.0, 5.0, 3.5) Minutes	C.1 Junior Engineer	60	\$	Per Hour

Table 2

Entity	Duration	Cost Entity	Cost Amount	Cost Unit	Cost Rate
HAI. Engineering Process (Human-AI)					
HAI.1 Context Analysis	12.0 Minutes				
HAI.1.1 Understand the Problem	triang.dist (2.0, 10.0, 6.0) Minutes				
HAI.1.2 Decompose Statement	triang.dist (2.0, 10.0, 6.0) Minutes				
HAI.2 1000 Requirements	1.0 Seconds				
HAI.3 Requirements Analysis	32.427 Minutes				
HAI.3.1 Loop until All Statements Have Been Analyzed	1.0 Seconds				
HAI.3.2 Identify Critical Issues	5.25 Minutes	C.1 Junior Engineer	60	\$	Per Hour
HAI.3.2.1 Critical Issue?	triang.dist (0.5, 1.0, 0.75) Minutes	C.1 Junior Engineer	60	\$	Per Hour
HAI.3.2.2 Determine Options and Perform Trade Studies	triang.dist (2.0, 3.0, 2.5) Minutes	C.1 Junior Engineer	60	\$	Per Hour
HAI.3.2.3 Resolve Issues with Customer	triang.dist (1.0, 3.0, 2.0) Minutes	C.1 Junior Engineer	60	\$	Per Hour
HAI.3.3 Generate Requirement	triang.dist (0.33, 1.0, 0.66) Minutes	C.4 AI Model	triang.dist (4.4E-4, 8.8E-4, 6.6E-4)	\$	Fixed
HAI.3.4 Validate AI-Generated Requirement	triang.dist (1.0, 3.0, 2.0) Minutes	C.1 Junior Engineer	60	\$	Per Hour
HAI.3.5 Determine Quality of Requirement	8.0 Minutes				
HAI.3.5.1 Statement Verifiable?	triang.dist (0.2, 1.0, 0.5) Minutes	C.2 Senior Engineer	100	\$	Per Hour
HAI.3.5.2 Coordinate Changes to Make Statement Verifiable	triang.dist (3.33, 10.0, 6.66) Minutes	C.2 Senior Engineer	100	\$	Per Hour
HAI.3.6 Generate Test Cases	triang.dist (0.33, 1.0, 0.66) Minutes	C.4 AI Model	triang.dist (4.4E-4, 8.8E-4, 6.6E-4)	\$	Fixed

Table 3 (1/2)

Entity	Duration	Cost Entity	Cost Amount	Cost Unit	Cost Rate
HAI. Engineering Process (Human-AI)					
HAI.3.7 Validate AI-Generated Test Cases	triang.dist (1.0, 3.0, 2.0) Minutes	C.1 Junior Engineer	60	\$	Per Hour
HAI.4 Trace Requirements	1.0 Seconds	C.1 Junior Engineer	60	\$	Per Hour
HAI.5 Risk Management	1.0 Hours				
HAI.5.1 Generate Risks and Plan Mitigation Strategy	triang.dist (1.0, 3.0, 2.0) Minutes	C.4 AI Model	triang.dist (4.4E-4, 8.8E-4, 6.6E-4)	\$	Fixed
HAI.5.2 Validate Risks and Plan Mitigation Strategy	triang.dist (2.0, 5.0, 3.5) Minutes	C.3 Risk Engineer	80	\$	Per Hour
HAI.6 Update Knowledgebase	triang.dist (2.0, 5.0, 3.5) Minutes	C.1 Junior Engineer	60	\$	Per Hour

Table 3 (2/2)

Model	Duration (mean)	Stdev (time)	Cost (mean)	Stdev (cost)	vs. Human-Only (time)	vs. Human-Only (cost)
Human-Only (Full)	47.1 days	3.51 hrs	\$70,172	\$208		
Human-Only (Truncated)	19.89 days	2.56 hrs	\$23,506	\$99	-57.80%	-66.50%
Human-AI Teaming	13.55 days	2.12 hrs	\$19,887	\$199	-71.20%	-71.70%
Human-AI vs. Truncated: -31.9% time and -15.4% cost						

Table 4

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