



ENGINEERING AND TECHNOLOGY LIFECYCLE SUPPORT

Systems Engineering and Integration and Space Systems Architecture Analysis

Technology advances that rely on space have vastly improved national security, space exploration, weather prediction, communications and navigation. At Engility, our space experts and engineers help customers stay on the cutting edge of space innovation. Our space domain capabilities include a wide range of systems engineering and space systems architecture analysis services, from problem definition and concept exploration through launch integration and operations support.

Engility Capabilities

- Satellite systems architecture
- Geospatial and signals intelligence
- Mission assurance and IV&V
- Communications and ground engineering
- Command and control
- Mission planning and design
- Launch support

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Systems Engineering and Integration (SE&I)

Our systems engineers have the experience and expertise to encompass all facets of space systems, including launch vehicles, satellites, ground control systems and information processing. They blend creativity with technical acumen to support the entire systems lifecycle.

Our SE&I capabilities are backed by an integrated body of knowledge encompassing a wide array of tools and techniques integral to delivering SE&I and decision-support services to customers. Engility's Systems Assurance and Governance Engineering (SAGE™) suite includes processes and best practices that span enterprise governance, SE&I and program protection — and ensures consistency, risk reduction and schedule compliance.

Supporting Our Space-Based Infrared and Weather Systems

Engility provides SE&I support to the U.S. Air Force (USAF) Space and Missile Systems Center (SMC) Remote Sensing Systems Directorate. Our primary responsibility for this directorate, which oversees the space-based infrared and weather systems, is to create and maintain the enterprise integrated technical baseline. In addition to SE&I support, we provide architecture development, verification and validation, and enterprise impact monitoring.

Space Systems Architecture Analysis

Our comprehensive understanding of the entire space domain — together with our science and engineering skills, decision-support expertise, and proven tools and processes — allows us to perform independent mission assessments and quantitative trade analyses to recommend architectures and solutions that balance affordability with customers' mission requirements.

NASA Network Evolution

NASA selected Engility to define its future space communications and navigation architecture framework in an effort to update its broad communications infrastructure. The Goddard Space Flight Center's Exploration and Space Communications Projects Division needed new models of strategic thinking to expand its capabilities and increase efficiencies.

Partnering with national security organizations since the 1960s, Engility is recognized as the trusted, independent systems engineering firm for space across the defense and intelligence communities.

Engility provided thought leadership in space communications and navigation to identify service and capability gaps, formulate future capability concepts, and recommend implementation and transition plans for evolutionary and revolutionary improvements for NASA's communication and navigation networks.

Air Force Research Lab Space Vehicles (AFRL/RV) Directorate

To address the AFRL/RV's need to stay abreast of new technology, Engility uses tools to evaluate technologies, perform system engineering trades, conduct military utility analysis, and support wargaming and distributed interactive simulations.

Our Mission Engineering and Systems Analysis (MESA) methodology for architecture analysis, for example, identifies gaps and shortfalls, and performs trade-space analyses to identify the best combination of solutions to achieve mission success. Validated by the USAF Space

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Command and the SMC, the AFRL/RV reaps the benefit of a comprehensive process that we proved in multiple space technologies and concepts studies. Though initially developed and applied for the USAF space control mission area, we have since adapted MESA to a variety of missions and issues.

We also apply our Integrated Modeling Framework to all phases of military wargaming and business to help the USAF evaluate investment alternatives and make smart decisions that balance efficiency, productivity and mission objectives.