



Jeffries Technology Solutions
Corporate Services
Model Based System Engineering (MBSE)

JeTSI provides diverse services in systems engineering, systems architecture and modeling, enterprise architecture, program management, and cost estimation and analysis.

JeTSI has been on the forefront of applying Model Based Systems Engineering (MBSE) services and products utilizing the Department of Defense Architectural Framework (DoDAF) on large aerospace projects. With the advent of the Unified Profile for MoDAF and DoDAF (UPDM) in DoDAF 2.0, the long anticipated potential to reduce costs and enhance the technical management of large Systems-of-Systems using MBSE techniques is beginning to be realized.

JeTSI has been working with NASA and NOAA on the Joint Polar Satellite System (JPSS) Ground Project (GP) since 2010 on the forefront of this new technical management paradigm. The JPSS GP spans the globe, with two Ground Terminal sites on each pole, plus communications provided by NASA's Space Network geosynchronous communications satellites. The JPSS GP has numerous interfaces to other weather programs, NASA support organizations, other NOAA entities, other civil agencies and elements of the Department of Defense. As such, it represents a large and complex model which previously would have been too broad in scope to afford significant technical depth in architecture-based technical management.

Leveraging UPDM and SysML, JeTSI worked with NASA to develop a very complete and detailed model of the JPSS GP. This architecture allowed NASA to execute its technical management activities with minimal resources, and to communicate the systems concepts and nuances throughout the life cycle. The full benefit of this work will be realized when the JPSS-2, JPSS-3, and JPSS-4 satellites are deployed over the next decade without having to re-develop the technical baseline for each new deployment.

JeTSI leveraged the JPSS GP architecture to assist NOAA's Office of Satellite Ground Services (OSGS) in charting the overall NESDSIS ground system architecture into the next decade. For both NASA and NOAA, JeTSI has been in a unique position to support major system trades (capability, cost, and schedule) as NOAA maps its new course into the future of weather satellites.

JeTSI can help your project too. We can assess your current system and architectural tools, and help develop a plan for fully utilizing modern modeling frameworks and techniques integrating requirements management, configuration management, and even cost estimation/management tools. JeTSI will augment your current systems engineer and architectural team with modern tools to efficiently perform complex architectural assessments against some of the largest Systems of Systems challenges.

For more information or to discuss any of the above services, please contact Leslie Jeffries. She may be reached at (703) 471-7588 or at Leslie@jetsi.com.