

DIGITAL ENGINEERING

Leveraging model-based systems engineering to advance the mission



Now more than ever, government agencies are relying on advanced technologies that can respond quickly and agilely to a ceaselessly evolving threat environment. But using the document-intensive systems engineering and integration (SE&I) processes of the past won't be enough to keep up with the complexity and accelerated delivery timelines needed for today's missions. To outpace the ever-evolving tactics of our nation's adversaries, government agencies must transition beyond costly and laborious document-based SE&I methods to a dynamic digital engineering approach to get their engineers engineering again—instead of spending the bulk of their time searching for and reconciling documents.

While the transition may seem complex

and daunting, model-based systems engineering (MBSE) can minimize the challenges faced by government agencies when adopting an all-digital model. And with the right set of skills, data and tools, transitioning to a digital engineering practice will mean improved decision-making, greater accuracy, long-term cost savings and most importantly—accelerated mission success.

THE ARCFIELD ADVANTAGE

A PROPRIETARY APPROACH TO MBSE

Arcfield's digital engineering ecosystem—an integrated infrastructure of curated modeling, simulation and data visualization engineering tools—can generate a high-fidelity digital twin of a system with traceability spanning the entire

BENEFITS OF DIGITAL ENGINEERING

- Reclaimed time to engineer
- Traceability across the acquisition life cycle
- Scales effectively as system complexity and scope increases
- Responds agilely to changing system requirements
- Resilient, future-proof methods
- Speedier development and deployment timelines
- Greater accuracy and precision
- Reduced risk
- Lower life cycle costs
- Improved quality

engineering life cycle. With end-to-end project management from product definition and concept phases through production and disposal, we guarantee a single source of truth that reliably serves as an authoritative description of the system at any instance in the development process. With clearly defined digital threads that connect all model components, we can monitor the health and status of a system in real time, apply predictive maintenance and flexibly respond to changing system requirements.

AN EXPERT TEAM

In addition to a fully integrated digital engineering ecosystem, Arcfield maintains a robust team of highly qualified modelers with OMG-Certified SysML Professional (OCSMP), AGI System Tool Kit (STK) and MathWorks MATLAB certifications and decades of proven SE&I experience. Our dedicated staff are available to work onsite with our government customers to provide hands-on digital engineering expertise and trusted mission support as an extension of their teams.

COMMITTED TO THE FUTURE OF ENGINEERING

Arcfield has invested in innovative solutions to make MBSE-driven digital engineering

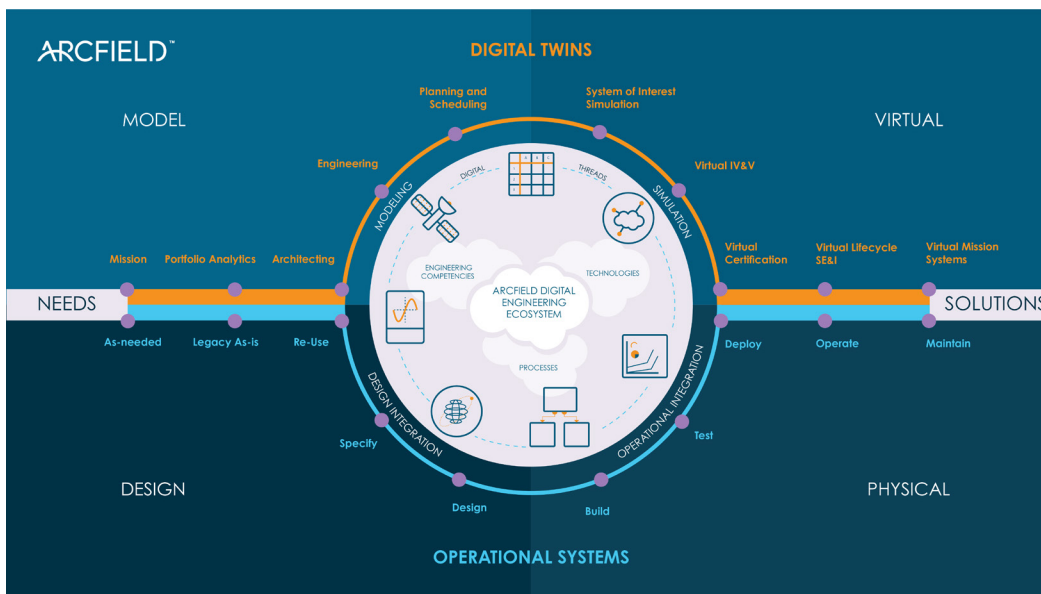
accessible to government stakeholders. With more than 64 years of experience providing SE&I services in support of our nation's most critical space, defense and intelligence missions, we have instantiated a complete digital engineering ecosystem of integrated processes, technologies and data that can adapt to current and future system requirements. Committed to the continual education and advancement of our engineers, we have partnered with George Mason University to provide ongoing MBSE/SysML training and support our people in achieving their OCSMP, STK and MATLAB certifications.

We are also making significant internal research and development investments in advancing our MBSE solutions within a hybrid cloud digital engineering environment to include MBSE-based:

- Engineering Review Board conduct
- Portfolio management
- High-fidelity simulation tools
- Program management dashboard visualizations
- Independent verification and validation integrated across entire life cycle

NEXT STEPS

Whether you are well established in digital engineering methods or are just getting started, we are uniquely positioned to support your transition to an all-digital systems engineering approach. To learn more about Arcfield and our MBSE-driven digital engineering solutions, visit arcfield.com.



DIGITAL ENGINEERING ECOSYSTEM

Arcfield's multi-dimensional, iterative MBSE process spans both operational and digital applications. Integrated operational and digital development is represented in this graphic from left to right beginning with needs through the development of an end-user solution with the blue path representing operational systems and the orange path representing digital systems. The interior of the circle represents Arcfield's digital engineering ecosystem—which provides an integrated suite of modeling and simulation software that supports system requirements, design, analysis, verification, validation and data visualization across the entire system development life cycle—as well as the digital threads linking the model and simulations to the operational systems' design. These operational and digital paths are concurrent and inform each other across the life cycle.