

Nova Systems Digital Engineering

OVERVIEW

Nova Systems has recognised increases in system and project complexity and the resultant challenge to delivering outcomes to meet organisational objectives. Through our ongoing investment in digital engineering we have established the digital tools, techniques, skills and codified know-how to offer clients substantial improvements over traditional document-centric systems engineering. Nova Systems offers our clients the full suite of Model-Based Systems Engineering (MBSE) capabilities from implementation advisory services through to turn-key MBSE services.

OUR FOCUS

Nova Systems focus is on using MBSE tools, techniques, skills and experience to resolve our clients current system realisation delivery challenges, so that we leave the client positioned to seize the benefits of MBSE throughout the system lifecycle and to reap further benefits on future projects.

WHY NOVA SYSTEMS?

Tools

Nova Systems has invested in MBSE and other digital engineering toolsets such that we have implemented best-of-breed tools including Dassault Systemes Cameo Systems Architect, PTC Windchill RV&S, our own Requirements Assurance and Validation Suite (RAVS), PowerBI, MATLAB, NVIDIA Omniverse, IBM DOORS, ANSYS Systems Tool Kit (STK) and numerous other tools.

Codification

In addition to our toolset investment, we have further invested in the codification of knowledge such that we have templates and processes built to satisfy Department of Defence need, in particular the requirements typical of an ASDEFCON contract. Our focus areas in this codification have included best-practice digitally enabled Systems Engineering, Capability Definition, Requirements Management, Hazard Risk Management, Verification and Validation.

Competency

Furthermore, we have invested in the training of our team covering tools, techniques and the Nova Systems codification, such that we can assemble teams of experienced systems engineers and test & evaluation (T&E) practitioners that can work together based on a consistent methodology that they can then tailor for the specific project.

The smarts behind the solution.

SERVICES

Nova Systems has experience delivering the following digitally enabled engineering services, including to major Defence Industry prime contractors, non-defence enterprises and the Department of Defence:

- Model-Based Systems Engineering
- Requirements Management
- Verification (DT&E and AT&E)
- Validation (OT&E)
- Modelling & Simulation (including Synthetic T&E)
- Analytics and data visualisation
- Capability definition
- System Safety Engineering

TOOLS AND TECHNOLOGIES

Nova Systems has implemented a suite of preferred tools to support the adoption of key standards and techniques; however, we can work with client to employ tools according to client need:

- Cameo Systems Architect (for MBSE employing SysML and UAF standards)
 - Capability Definition (generating OCD and FPS directly from the SysML system model)
 - SE for system design and realisation
 - Systems analysis (including simulation and specialist analyses)
- Team Work Cloud (for MBSE Collaboration)
- PTC Windchill RV&S (hosting the Nova Systems RAVS toolset)
 - Requirements Management
 - V&V planning, execution and reporting
- IBM Rational DOORS (for Requirements Management)
- Digital Engineering Virtual Environment (DEVEN)
 - Built on Microsoft Assure and virtual desktop capabilities to provide cloud-based access to our toolset
- NVIDIA Omniverse (for system modelling & simulation, visualisation and synthetic T&E)
- ANSYS STK (for Mission Engineering, platform modelling & simulation, and synthetic mission T&E)
- PowerBI (for data analysis and real-time reporting)
- Bow Tie XP, ASCE, Cameo Systems Modeller and RAVS (for System Safety Engineering and safety analysis)

EXPERIENCE

Nova Systems has a depth of experience that includes:

- Delivering many digitally enabled V&V campaigns to support major defence prime contractors and the Department of Defence.
- Implementing MBSE to support mission engineering such as, Force Integration Division (within DoD) digital mission engineering and joint force integration.
- Delivering digital engineering training in MBSE, SysML and Cameo Systems Modeller to participants from across Defence and Defence Industry.
- Using MBSE to support capability definition on CASG projects, resulting in automated generation of OCD and FPS documents from the system model.
- Using digital engineering tools and techniques to support critical analyses such as BHP Locomotive Brake Failure FMECA.
- Delivering verification, systems assurance and certification support, such as on the Parramatta Light Rail project for Transport for NSW.

Kyle Stockman

Senior Manager Business Development

Level 1, 40 Ross Street, Newstead, Queensland 4006

M +61 279 033 127 | E kyle.stockman@novasystems.com

