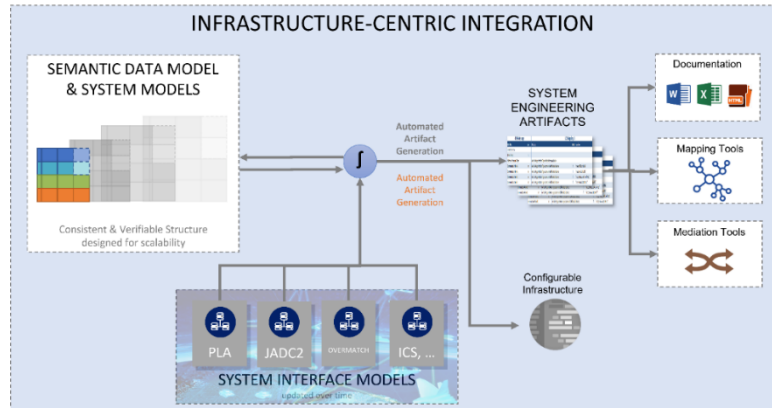# Integration Flexibility with Scalable Infrastructure

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Topic Number: N162-101
SYSCOM: Naval Air Systems
Command (NAVAIR)
www.navair.navy.mil

Program Sponsor: Joint Strike
Fighter
Other Potential Programs:
NAVSEA PEO IWS 1.0, Army CCDEVCOM
Integrated Mission Equipment, Army
PEO Aviation

Current TRL: 7
Projected TRL: 8 / Q4 2022

Keywords:
Integration, Scalability, Interoperability,
Model-Based System Engineering,
Semantics, Data Architecture, System of
Systems, FACE™ Technical Standard
(Future Airborne Capability
Environment), Security

Innovation Center at 2022 Navy Gold Coast

September 6 – 8, 2022

THE CHALLENGE

Current integration efforts are dependent on labor-intensive, error-prone human capital. Integration cannot be executed with the precision and velocity required to provide and maintain offset advantage. The military and industry require a solution that provides cost-effective, performant, verified system integration infrastructure that is separated from application development. Dynamically updatable infrastructure enables system-wide updates to sense, track, and engage without the cost and schedule impact of current integration approaches.

THE INNOVATION

Skayl has developed an automated integration capability that dramatically reduces costs and timelines associated with system of systems integration, testing, and certification. Skayl's Configurable Infrastructure Capability (CinC™) is the industry's first system-centric integration framework. By shifting to infrastructure-centric integration, one can adapt and integrate over a *system's lifecycle* independent of *applications' lifecycles*. There is no need to revisit or modify application and system logic. This solution can be used with existing development, security, and operations (DEVSECOPS) frameworks.

THE NAVY BENEFIT

Skayl's technology reduces integration and testing complexity by adding deployment flexibility, decreasing errors, and eliminating duplication of effort thus enhancing affordability and speed-to-Fleet. The model-derived and highly configurable infrastructure makes highly optimized, independent, and continuous integration a reality – allowing for quick and easy assessment of the impact and cost of integration on a system. Gaps can be identified earlier in the engineering design stages – before development, testing, or costly certification processes. By bridging different communications protocols and standards with advanced modeling techniques, the technology eliminates the need for countless man-hours of writing code that can now be automatically generated. This Modular Open Systems Approach (MOSA)-based technology eliminates vendor lock. The technology addresses the core enablers of Joint All-Domain Command and Control (JADC2) and Project Overmatch.

THE FUTURE

Skayl's technology helps realize the full vision of open, interoperable, modifiable, and scalable systems and redefines how to think about system-of-systems architectures. Skayl is currently working to ensure the software generated by its tools meet DO-178 DAL A, which will vastly reduce the cost and schedule and improve reliability of airworthy code development. Skayl's accredited software will be demonstrated in a flight test in the fall of 2022. Skayl has begun branching out to other industries in mission critical applications such as the medical, public safety, smart city, and power industries.