

Topic: N162-101

Skayl LLC

Scalable Model-Driven Protocol Mediation and Systems Integration

The integration of disparate technologies in Systems of Systems (SoS) is complex, costly and resource intensive. Skayl's PHENOM + CinC (Configurable infrastructure Capability) provides integration scalability, flexibility, dependability, security and value. PHENOM is a software-based integration ecosystem providing interoperability solutions for mission-critical, real-time data communication including aviation, command & control, medical devices, and smart cities. PHENOM's advanced semantic architecture enables automated data discovery and a unique, fully configurable integration infrastructure. Phase II is complete, and Phase III negotiations are underway. Skayl's principals are subject matter experts heavily involved in the leadership of architectures and standards including the FACE™ Technical Standard, UCS, NATO STANAG (Standardization Agreement) 4586 and other STANAGs. Skayl's goal is to provide the government with tools that enable rapid, cost-effective integration and testing for application in mission-critical, real-time data communications.

Technology Category Alignment:

Information Collection/Management

Networks and Communications

Modular/Open/Reconfigurable Architectures

Modularity

Contact:

Sonya Hand

sonya@skayl.com

(410) 848-4946

<https://www.skayl.com/>

SYSCOM: NAVAIR

Contract: N68335-18-C-0219

Booth: 3079

Room: FST at SeaAirSpace

Presenting: Apr 6th at 10:45 AM

 Corporate Brochure: https://navystp.com/vtm/open_file?type=brochure&id=N68335-18-C-0219

WHO

SYSCOM: NAVAIR

Sponsoring Program: NAVY PMA 209

Transition Target: Our solutions are initially targeted to government and prime customers who design, deliver, and sustain complex Systems of Systems (SoS) in environments such as aviation, UAS, fleet management, and command and control.

TPOC:
(301)757-3804

Other transition opportunities: This technology is applicable in industries that rely on large, complex SoS and mission-critical, real-time data. Other potential transition targets include aerospace, medical devices, and smart city applications such as public safety, traffic management, and power.

Notes: Image depicts Skayl's Configurable Infrastructure Capability (CinC™) (pronounced sync), the first truly scalable, configurable integration infrastructure driven by a formal, model-based approach. CinC leverages data models and, using configurable templates, generates products for systems using a variety of messaging technologies and standards - products that integrate directly into client's runtime code.

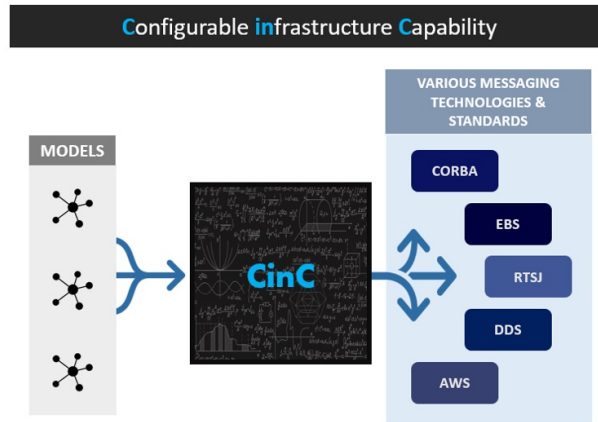


Image Courtesy of Skayl, LLC

WHAT

Operational Need and Improvement: The Navy must design, deliver, and sustain complex SoS in environments such as Battle Groups and Aircraft Carriers while facing rapidly changing environments, tight budgets, and aggressive schedules. Current methods do not meet the demands of exponential technology growth, complexity, and access to information. SoS integration is one of the most significant challenges facing today's systems engineers. With the development of each new system, there is a combinatorial expansion in the integration effort. Unless the current trend is changed, the projected integration cost of these disparate systems could easily exceed the cost of the systems themselves. The Navy is looking for an intelligent, template-based solution that supports "optimal" system-specific infrastructures. CinC was designed to enable the customization and optimization of a point-to-point solutions but the scalability and ease of management characterized by a Enterprise Service Bus (ESB).

Specifications Required: Support of multiple data-centric interfaces and integration patterns with various optimization constraints. Optimized protocol mediation enabling interoperability across technologies and message formats. Products generated from a user-friendly tool that interface directly into client's runtime code. Initial interfaces for Navy application to include FACE™ Technical Standard Editions 2.1 and 3.0. With a FACE compatible template, CinC acts as a Configurable Transport Service (TS). In addition to FACE, CinC can be configured to generate code for use with numerous other messaging technologies and standards including CORBA, DDS, RTSJ, AWS, and ESB.

Technology Developed: The integration of disparate technologies in SoS is complex, costly and resource intensive. Skayl's CinC (Configurable Infrastructure Capability) provides integration scalability, flexibility, dependability, security and value. The technology relies on mathematical algorithms and advanced modeling and documentation approaches that support scalable, configurable infrastructure and automatically generate optimized products that integrate directly into client's runtime code. The technology is accessed through simple, graphical configuration management software.

Warfighter Value: CinC provides a framework upon which capabilities can be developed, enhancing affordability and speed to fleet by reducing integration and testing time, decreasing errors, and eliminating duplication of effort.

WHEN

Contract Number: N68335-18-C-0219

Milestone	Risk Level	Measure of Success	Ending TRL	Date
End of Phase I	Med	Research and plan for a configurable and flexible transport service segment that streamlines integration through mediation and protocol bridging. Early development on beta PHENOM.	TRL 3	January 2018
Army FACE™ TIM Demo of configurable transport service	Low	Successful demo of beta CinC: rapid, live integration of legacy STANAG 4586 vehicle simulator with Army CMS	TRL 4	September 2018
Start of Phase II Extension (Air Force) and Start of Phase III (US Army IME W911W6-20-D-0002)	Med	Application of the beta configurable transport services (CinC)	TRL 5	November 2019
End of Phase II	Med	Commercial application of CinC	TRL 6 or 7	March 2020

HOW

Projected Business Model: Our business model involves selling licenses via subscription to stand-alone CinC or to PHENOM + CinC, bundled with tool training (initial in-person plus ongoing on-line webinars) and a certain number of monthly support hours. PHENOM is Skayl's collaborative advanced data modeling design and maintenance tool. PHENOM + CinC is updated with new features and increased usability every 2-3 weeks. The portal may be accessed as an on-line SaaS or installed at the customer's location with regular update drops. These licenses are sold to the government as well as primes and are expected to transition into commercial industries.

Company Objectives: We anticipate the SBIR/STTR Transition Program (STP) program will facilitate further transition of our technology, providing market research and introductions to government and industry decision-makers in need of dramatically more efficient integration, testing, and maintenance of large, complex, real-time systems. In the short-term, Skayl's goal is to secure a minimum of two Phase III agreements for subscriptions with the DoD. We are currently in a NAVAIR Phase III for work with the Army Integrated Mission Equipment for Vertical Lift Systems (IME) (W911W6-20-D-0002). In the long-term, Skayl plans to roll out a hardware solution and mediation configuration service. This will serve as our entry into the Internet of Things (IoT) space. The hardware solution will be comprised of a pre-packaged installation of our software solution and will allow a customer to integrate a new device or change how they use current devices.

Potential Commercial Applications: This technology is applicable in industries that rely on large, complex SoS and mission-critical, real-time data. Other potential transition targets include aerospace, medical devices, and smart city IoT applications such as public safety, traffic management, and power. Our vision is to "integrate the unintegratable." We believe that we can completely eliminate vendor lock and allow people to focus on innovative work, constantly making progress, and eliminating the need for countless man-hours writing code. Automatic mediation will no longer be an option: our core technology will be commoditized and pushed down into hardware, present in all computers sold. We have already initiated this discussion with major brand CPU hardware manufacturers.

Contact: Sonya Hand, Director of Strategy & Marketing
sonya@skayl.com 410-848-4946