

Topic: N101-047

## Rite-Solutions

### Integrated Communications System-Next

The Automated Protocol Translator (APT) is a system/software integration support tool for warfare systems that addresses interoperability challenges by auto-generating software to translate communication protocols. APT supports the rapid integration of new protocols and interface definition updates. Its ability to auto-generate CORBA and AMQP protocol translation code has been verified. The initial targeted application is the AN/BYG-1 Submarine Combat Control System. Rite-Solutions™ designs, develops, and deploys mission-critical software and systems that convert complex data into an information advantage. Our goal is to provide APT as a product-based service to government and defense contractors in which we will generate and integrate protocol translation code to resolve system interoperability challenges in an affordable and time effective manner thereby facilitating rapid integration of new system capabilities.

### Technology Category Alignment:

Advanced Computing/Software Development

#### Contact:

Thomas Santos

[tsantos@rite-solutions.com](mailto:tsantos@rite-solutions.com)

(401) 847-3399129

<http://www.rite-solutions.com>

**SYSCOM:** NAVSEA

**Contract:** N00024-15-C-4048

 Corporate Brochure: [https://navystp.com/vtm/open\\_file?type=brochure&id=N00024-15-C-4048](https://navystp.com/vtm/open_file?type=brochure&id=N00024-15-C-4048)

WHO

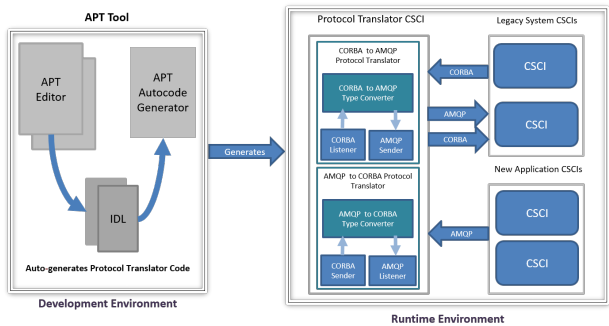
**SYSCOM:** NAVSEA

**Sponsoring Program:** NAVSEA  
PMS-425

**Transition Target:** Incorporate the Automated Protocol Translator (APT) framework/tool set into current PMS 425 interface management practices to support Technical Insertion/Advanced Processor Build (TI/APB) development, integration, testing, and certification activities.

**TPOC:**  
(202)781-1558

**Other transition opportunities:**  
Other candidates for transitioning APT are those programs, either directly with the government or in support of system prime contractors, where cost effective and timely modernization of legacy warfare systems to accept new technology insertions and open business model innovations is an imperative. Additionally, in further support to these warfare systems, APT can also address interoperability and testing challenges associated with integrating new and/or updated simulation/stimulation capabilities.



Automated Protocol Translator Functional Overview -  
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WHAT

**Operational Need and Improvement:** PMS 425 has identified a need for this technology in support of AN/BYG-1 Submarine Combat System development and maintenance, where the TI/APB capability upgrade cycle introduces new technology communication protocols that are often incompatible with legacy systems, requiring costly and time consuming software development, integration and test in order to introduce the desired new capabilities. APT will significantly reduce the time and cost associated with new technology upgrades by auto-generating interface software that facilitates the improvement of system interoperability by quickly adapting to changes in protocols, and sources of new or better data.

**Specifications Required:** Automatically generated protocol translation code translates CORBA and AMQP protocols, and run-time performance supports TI/APB system throughput transaction rates.

**Technology Developed:** APT is a system/software integration support tool that addresses interoperability challenges by translating communication protocols using auto-generated application interface software (referred to as the Protocol Translator Computer Software Configuration Item (CSCI)). Using software that is automatically generated by the APT tool, existing and new software systems can communicate with each other without modification. In the run-time environment, Legacy CSIs continue to communicate using their existing protocols while interfacing with the Protocol Translator CSCI, which performs a protocol-to-protocol translation of the data exchanged between sending and receiving applications to facilitate communication between Legacy and New Application CSIs.

**Warfighter Value:** This technology will enable the introduction of Fleet platform enhancements with reduced risk, improved capability and increased reliability that can be delivered in significantly less time and at a more affordable cost.

WHEN

**Contract Number:** N00024-15-C-4048 **Ending on:** June 8, 2017

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Develop Automated Protocol Translator Tool	Low	Software Integration and Test	3	July 2016
Evaluate Automated Protocol Translator Performance	Med	Software Integration and Test	4	December 2016
Evaluate APT Performance in AN/BYG-1 TI/APB Environment	Med	System Test & Final Phase II Report	6	July 2017

HOW

**Projected Business Model:** Rite-Solutions™ will offer APT as a product-based service to government and defense contractors in which the APT tool will be used to generate and integrate protocol translation code to resolve system interoperability challenges in an affordable and time effective manner that facilitates rapid integration of new system capabilities.

**Company Objectives:** Rite-Solutions™ designs, develops, and deploys mission-critical software and systems that convert complex data into an information advantage. With small business efficiencies and CMMI Level 3 discipline, we deliver innovative, reliable and affordable solutions in decision support, command and control and information management. We seek to inform government and defense contractors in the undersea, surface and airborne domains concerning the competitive advantage that APT can bring to their programs.

**Potential Commercial Applications:** APT is intended to support "Internet of Things" machine-to-machine communications associated with the continuous introduction and integration of new devices/sensors, communication protocols, proprietary interfaces, and industry standards. By providing a common development framework and operating environment that integrates multiple devices and communications in a consistent manner, APT will provide vendors a strategic advantage and a simplified approach to integrating their devices into existing systems. The automatic generation of protocol gateways which will support the translation and sharing of information among disparate hardware and software applications will provide a shorter time to market for commercial vendors with lower costs.