

Department of the Navy SBIR/STTR Transition Program

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Topic # A07-094

Framework for Mobile Services

SimVentions, Inc.

WHO

SYSCOM: NAVAIR

Sponsoring Program: Air Combat Electronics Program Office (PMA-209)

Transition Target: Integration and interoperability improvements for systems using the Future Airborne Capability Environment (FACETM)** ecosystem. **Technical Standard for the Future Airborne Capability Environment (FACE™), Edition 2.0, 2.1 © 2013 The Open Group. FACE is a trademark of The Open Group in the United States and other countries.

TPOC:
301-757-6454

Other transition opportunities:

FACE systems integration at the Army Aviation and Missile Research Development and Engineering Center (AMRDEC)

Leverage this capability to develop new modeling tools at Institute for Software Integrated Systems (ISIS) at Vanderbilt University



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WHAT

Operational Need and Improvement: Integration of military applications is an expensive, time consuming, and cumbersome task. The Navy has led the way in fostering the open FACETM Technical Standard as a strategy to improve the acquisition and implementation of new aviation capabilities faster and at lower cost. The Dexter software tool reduces integration time by allowing users to visually specify data mappings between applications, identify and resolve incompatibilities, and automatically generate executable software code. Additional exchange mechanisms and communication paradigms can be supported with plugins.

Specifications Required: This capability utilizes the current FACE Technical Standard 2.1, as well as earlier versions. Rather than thumbing through an Extensible Markup Language (XML) file, the Dexter tool allows a Subject Matter Expert (SME) to visualize the message structures of FACE Units of Portability (UoPs) and utilizes data elements in the Technical Standard to determine their relationships. Based on the SME inputs, the tool automatically produces executable software code in alignment with the FACE Technical Standard. Currently, code can be produced in C, C++, and Ada.

Technology Developed: Dexter enables the integration of new components with legacy software through an innovative, visual data mapping display. These mappings can be saved for future use, and software code automatically generated without human intervention. This tool allows the user to visualize the FACE Technical Standard to make integration of FACE components easier.

Warfighter Value: Integration of new components sometimes requires the rewrite or replacement of the functioning legacy systems. This tool enables platforms to introduce new warfighting capabilities while retaining legacy software components with the use of an innovative middleware approach. With automatic software code generation, new warfighting capabilities can be fielded faster.

WHEN

Contract Number: N68335-14-C-0101 **Ending on:** December 30, 2015

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Capability Release 1	N/A	Proof of concept delivered	TRL 3	July 2014
Capability Release 2	N/A	Components tested in simulated environment	TRL 5	January 2015
Beta Release	N/A	Prototype demonstrated and delivered	TRL 6	September 2015
Capability Release 3	Low	Prototype to be delivered to DoD integration process	TRL 7	December 2015

HOW

Projected Business Model: SimVentions, Inc. intends to license the Dexter tool for use by the government and commercial industry. This tool has clear applicability to any systems engineering or software development activity using the FACETM ecosystem. Dexter has already demonstrated success as a prototype tool supporting the integration of avionics systems at NAVAIR. As new Defense programs consider adopting the FACE Technical Standard, this tool will be indispensable to enable integration of legacy components with new FACE components.

SimVentions specializes in delivering innovative defense solutions centered on the company's key theme of Imagine, Create, Explore, and Discover™. Our goal is to deploy this product in government and prime contractor programs for facilitating FACE system integration

Company Objectives: SimVentions would like to increase the visibility of the Dexter tool to government and prime contractor contacts. Specifically, this Small Business Innovative Research (SBIR) project is eligible for continued SBIR investment to increase the maturity of the product and its commercial readiness. Prime contractors would be interested in this product because it is a completely unique capability that would help discriminate a potential proposal from the competition.

Potential Commercial Applications: This product is currently highly specialized to address the challenges associated with integration and interoperability of DoD avionics systems. Some Government organizations and prime contractors developing FACE capabilities have indicated that this approach could be applicable to the integration challenges of tactical vehicles and other Defense programs. SimVentions has FACE technical expertise and Dexter is a unique capability to help customers integrate new capability while protecting their legacy investments.

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