

SUCCESS STORY

A Shared Reasoning Environment for the Acquisition Life Cycle

MODEL BASED SYSTEMS ENGINEERING BIG DATA ANALYTICS

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SBIR COMPANY NAME: INOVEX
INFORMATION SYSTEMS

TECHNICAL PROJECT OFFICE: AFRL/
RXMS, WRIGHT-PATTERSON AFB, OH

SPONSORING ORGANIZATION: AFRL/
RXMS

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THE BASICS

- Open-source data collaboration platform to pull together and analyze data for the weapon system design acquisition life cycle.
- Users can make better use of pre-existing data, accelerate the process, reduce errors, and increase access to more comprehensive and consistent information.
- Reduces the time it takes to get advanced weapon technology into the hands of the warfighter.



Photo by Staff Sgt. Joshua Garcia

WITH THE SUPPORT OF SBIR/STTR, MARYLAND-BASED INOVEX INFORMATION SYSTEMS HAS DEVELOPED AN OPEN-SOURCE DATA COLLABORATION PLATFORM, KNOWN AS THE MOBI-SRE (SHARED REASONING ENVIRONMENT), TO PULL TOGETHER AND ANALYZE DATA FOR THE WEAPON SYSTEM DESIGN ACQUISITION LIFE CYCLE.

With this development, users can make better use of pre-existing data, accelerate the process, reduce errors, and increase access to more comprehensive and consistent information. This reduces the time it takes to get advanced weapon technology into the hands of the warfighter.

The commercial opportunities created by the success of this project have allowed iNovex to hire more full time employees, and have opened doors with the NSA, AFRL and other government entities for future contracts.

The company intends to expand the Mobi-SRE technology in the pursuit of such contracts, and to apply their platform to advanced manufacturing, with an additional eye on both commercial and non-profit organizations in the future.

BEHIND THE TECHNOLOGY

Before the Mobi-SRE, the process of collecting and processing data for the weapon design workflow was manual and very time consuming. It involved getting multiple people to manually gather data from different sources and formats, determine a common data format, and translate the data.

This process was risky and lengthy, and resulted in a lot of errors and time lost because of the human factor involved. If the original sources were altered for faster gathering of data, it risked impacting other processes involving that data.

With the Mobi-SRE, iNovex created a platform that allowed easy gathering of multiple forms of data and processes, and the linking of information that would not corrupt the original source. This platform allows users to access and analyze data quickly and easily, both saving time and cutting down significantly on data translation errors.

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With this technology, the weapon acquisition lifecycle can become much faster and more efficient because of the accelerated timeline of data gathering and analysis, as well as a standardized method of comparison across the acquisition lifecycle.

The system was created by researching AFRL's information needs and constraints, to create a language-based data collaboration platform based on models of complex systems. When data is added, the platform updates in real-time, in order to give the user the most up-to-date analysis.

Mobi-SRE was tested for its ability to link different data types across multiple systems and engineering artifacts, in order to give the user information on cost, performance, schedule, design, and quantity trade-offs and tailor the system for the most utility in AFRL's data needs.

The Mobi-SRE system is currently being used at the AFRL Materials and Manufacturing Directorate, as well as in commercial organizations, such as Raytheon Technologies.

SBIR FUNDING AND AFRL'S EXPERTISE WERE CRITICAL

The contribution of Air Force SBIR funding and AFRL subject matter expertise were essential in the development of the project.

Scientists at iNovex Information Systems used the investment to research the specific Air Force needs and limitations, and used that information to build and expand their data platform to specifically address those problems. Air Force SBIR funding was also used for practical use testing.

Air Force SBIR invested \$899,154 into the project, and the company has received about \$1.5 million in Phase III contracts and is positioned to save the Air Force and estimated \$5 million. 

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