



SBIR TRANSITION SUCCESS STORY

DARPA SBIR INVESTMENT:
\$1.5M

SBIR TOPIC NUMBER:
HR001121S0007-03

PHASE III FUNDING:
\$14M

The Challenge

The U.S. military increasingly relies on high-tech solutions for its operations, and the fast-paced nature of those activities demands swift decision-making. The Department of War (DoW) often uses modeling and simulation (M&S) to determine what actions are effective against threats, but previous efforts to catalog M&S assets have been prone to manual error and interoperability issues. DARPA issued a challenge to build a new M&S repository that would reduce time spent searching for solutions and increase cooperative use among DoW agencies and Military Services.



Technology | Transition

With help from a DARPA SBIR award of \$1.5M, SimVentions developed SmartKM, a secure web application designed to improve decision-making by revolutionizing the storage, curation, and discovery of knowledge. The product initially allowed users to store items related to M&S, such as datasets, scenarios, and reports that focus on modeling real-world problems. As SimVentions continued to develop the technology, it became clear that it had potential for wider use in the public and private sectors.

In December 2024, SimVentions was awarded a Phase III, three-year \$14M contract by DARPA's Adaptive Capabilities Office to continue development of SmartKM. The company had already built the basic database of information, but advancements in artificial intelligence (AI) and machine learning (ML) added new opportunities to advance the technology. Consequently, part of the DARPA contract calls for SimVentions to take SmartKM from a knowledge repository to a "smart" knowledge repository that incorporates AI and ML to increase speed in decision-making. SmartKM is designed to provide the most efficient usage of M&S and the widest database of solutions for users.

SmartKM also includes a multi-level security element; the technology properly tags and stores the data for classification credentials to ensure that users have the proper security clearance to view the information. DARPA uses SmartKM for running experiments, and the repository is now being shared with other Military Services and DoW agencies for a variety of functions. For example, a Military Service may use the system to discover existing solutions (such as previous scenario simulation results) that improve decision-making for scenarios involving current threats or situations. If previous results do not align well, SmartKM can help the analyst find the most applicable M&S assets (models, scenarios, datasets, etc.) for constructing and executing a new simulation. In turn, those results can be stored in SmartKM for future research and discovery.

Benefits to National Security

- Streamlines the decision-making process and enables collaborations among DoW and Military Services.
- Implements users' credentials and evaluates them against items in the repository to provide greater security.
- Reduces time spent searching for and evaluating M&S assets and ensures options that otherwise would have been overlooked are brought to the user's attention.

About SimVentions

SimVentions began operations in 2000 and has since grown to more than 450 employees. The company provides system engineering, software development, and M&S services to a variety of federal government clients.

In 2020, SimVentions converted to an employee-owned company. Its other contracts include cybersecurity services for Naval Surface Warfare Center Dahlgren Division's Tomahawk missile program and electronic warfare work for the U.S. Navy.

"We've spent the last five years working with DARPA on SmartKM, and it's quickly growing as a real feather in our cap. It's been a win-win for DARPA and us."

- Tram Chase, Vice President, Technology Solutions Group, SimVentions

Future

As SmartKM's development continues, SimVentions officials are aiming for a formal transition of the technology to the Office of the Under Secretary of War for Research and Engineering (OUSW(R&E)) in 2026. The company is in productive conversations about SmartKM with the U.S. Indo-Pacific Command and Department of Homeland Security. SimVentions officials are also targeting numerous applications beyond the U.S. military. The company plans to pursue private sector deals with the aviation, automotive, logistical, medical, and mechanical industries, all of which use M&S extensively during product development.