

DHS Science and Technology Directorate

System of Systems Operational Analytics

Strengthening Analytics For Quality Decision Making

DHS Components have data – they need insight

DHS missions are complex, combining systems, data, organizations and activities. Analysis supporting these investments and operational decisions, however, tends to focus on individual systems, without addressing their role in the larger mission architecture. Combining cross-organization, operational data and analytic tools in a “system of systems” approach provides decision makers, from program managers to senior leadership, insight to make smarter operational and investment decisions across the diverse homeland security domain.

SoSOA enhances analytic efficiency

In October 2017, the Department of Homeland Security (DHS) Science and Technology Directorate’s (S&T) Capability Development Support Operational Requirements and Analysis Division launched System of Systems Operational Analytics (SoSOA), an S&T program proposed for five years.

SoSOA is being designed to be a virtual desktop environment for collaborative operational analyses that enables complex, timely, mission-focused decisions across DHS and the Homeland Security Enterprise (HSE). SoSOA combines the right data, tools and training to enhance analytics for decision makers across DHS.

With Component clients-partners, SoSOA builds enterprise environments to efficiently meet analysis and decision-making needs. SoSOA maximizes DHS data sources and uses Agile modeling and analytics to reduce analysis cycle time, resources and personnel needs. SoSOA modeling, analytic tools and methodologies, used with organization-specific data and problem sets, trim costs.

Meeting critical Component needs, now

SoSOA uses an Agile approach to elicit analytic and system requirements through Component demonstrations that deliver useable analytic tools, build to longer-term, enterprise analytic needs, and solve pressing Component clients to find and mitigate key analytics gaps according to client needs:

- U.S. Border Patrol is understanding capability gaps and communicating them to acquisition executives to guide organizational investment.
- U.S. Secret Service Chief Information Officer will use the SoSOA toolkit to create analytic products that boost IT investments and readiness.
- The National Protection and Programs Directorate is answering key infrastructure posture questions, starting with fuel availability during disasters.
- Customs and Border Protection (CBP) is enhancing their Congressional and leadership reporting capability through automation and improved visualization.
- CBP Office of Trade is more quickly identifying non-compliance actors costing the U.S. \$3 billion each year.
- CBP Office of Field Operations is applying predictive analytics to budgeting decisions for Officer/Specialists required at Preclearance locations.

Data and analytics-driven decision making

In line with the DHS Strategy and the DHS Analytic Agenda, SoSOA, and its growing user community, will strengthen HSE’s analytic capability for better, data-driven investment and operational decisions.

Program Partners

- Applied Research Associates, Inc., Albuquerque, NM
- KaDSci, LLC, Springfield, VA
- KSA Integration, Alexandria, VA
- Apogee Research, LLC, Arlington, VA
- ATA, LLC, Vienna, VA
- Innovative Decisions, Inc., Vienna, VA
- Systems Planning and Analysis, Inc., Alexandria, VA
- Old Dominion University Virginia Modeling, Analysis and Simulation Center, Suffolk, VA
- Whitney, Bradley and Brown, Inc., Hampton, VA
- GaN Corp., Huntsville, AL

