The Biosurveillance Ecosystem (BSVE)

DTRA Defense Threat Reduction Agency

What is the Biosurveillance Ecosystem (BSVE)?

The BSVE is a rapidly emerging capability being developed by the DTRA Chemical and Biological Technologies Department to enable real-time biosurveillance for early warning and course of action analysis.

What can/will the BSVE do?

The system already has a virtual, customizable, Analyst Workbench that can:

- Provide applications ("Apps") capable of analyzing and visualizing near real-time global epidemic and outbreak information from unique data sources, including point of need diagnostics data;
- Allow for User-to-User collaboration (report sharing, chat, and "circles of trust");
- Provide advanced machine learning algorithms that draw from novel health and non-health resources.

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The BSVE will provide a user-friendly, customizable system designed by Users. This includes:

✓ ***Interoperability:*** *Amazon web services (AWS) cloud-based, open source, unclassified environment fusing disparate data sources in real time with advanced visualization analytics*

✓ ***Configurability:*** *Users can customize their BSVE Analyst Workbench to support their activities regardless of location, skill level, resources*

✓ ***Sustainability:*** *Downloadable Software Developers Kit (SDK) will allow for externally developed analytics (disease spread models, baseline deviation algorithms, new data sources/visualizations) to be integrated rapidly into the BSVE for use. SDK allows users, researchers, students, and citizens to participate.*

✓ ***User-derived, User-Tested:*** *Users (DoD/Interagency/Local/State Public Health) provided a unique set of requirements that drives BSVE development. Users test functionality at every milestone against those requirements. Feedback is incorporated into the BSVE development cycle.*

Making the World Safer

The BSVE provides capabilities for potential correlations allowing for disease prediction and forecasting, similar to the functionality of weather forecasting.

An Integrated JSTO Program: BSVE is the integration framework for capabilities in development at JSTO including 'Buddy Care' and Role 1 BSV-mission specific diagnostic devices whose results are sent wirelessly or via text message to BSVE cloud and displayed in the BSVE Analyst Workbench in real-time using ONC standards.

DTRA is currently working with collaborators throughout the 'Whole of Government', Industry, and Academia on the BSVE to ensure a compatible, broad-sourced, cutting edge technology system.