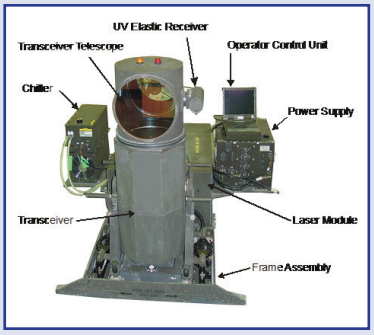
Science & Engineering Services, Inc. - Joint Biological Standoff Detection System, Increment 1

GENERAL DESCRIPTION:



The Joint Biological Standoff Detection System (JBSDS) is considered by JPEO-CBD to be a major technology revolution and capability that responds to a validated DOD requirement. JBSDS is an eye-safe militarized Lidar that provides standoff detection of airborne Agents of Biological Origin to 3+ miles away and fits within a HMMWV. JBSDS is network-capable and has some ability for detecting chemical aerosols. In terms of logistics, the only daily-use consumable is electricity and train-up for non-technical users is within 2-3 days.

TECHNICAL DESCRIPTION:

The Joint Biological Standoff Detection System (JBSDS) started as a DARPA SBIR using a COTS-based Fluorescence Portable Digital Lidar open architecture via integrated transmitter-receiver with 355nm and 1067nm low-energy/high pulse-rate lasers. The output is eye-safe and all data processing is digital, with the discrimination algorithm based on pioneering work by MIT-LL using two orthogonal parameters: backscatter and fluorescence. The validated DOD requirement for operation is low-light conditions only, though JBSDS can be readily upgraded to 24/7 operations thru its open architecture.

CONTACT INFORMATION

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COST

- $700,000/system
- <$1/analysis

Tier Selection

Final tier assignment is based on overall product score.

Top Tier | Second Tier | Third Tier | Fourth Tier | Bottom Tier

RANKINGS

	Biological	Chemical	Radiological
FIELD USE System	Top Tier	N/A	N/A
MOBILE Laboratory	Bottom Tier	N/A	N/A
DIAGNOSTIC Laboratory	Bottom Tier	N/A	N/A
ANALYTICAL Laboratory	Bottom Tier	N/A	N/A

Notes

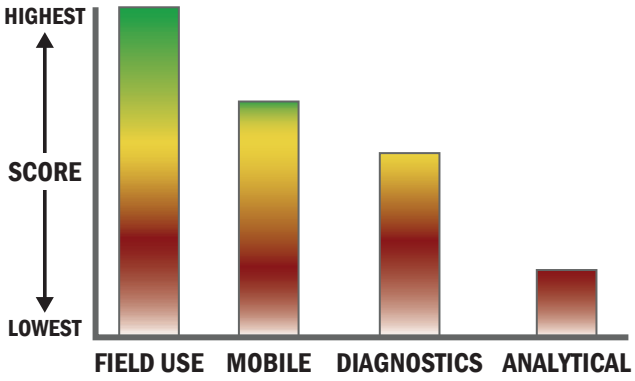
This standoff sensor is being tested in South Korea as part of a multi-year JPEO-CBD advanced technology demonstration through 2015.

Survey Source

Vendor Supplied Information

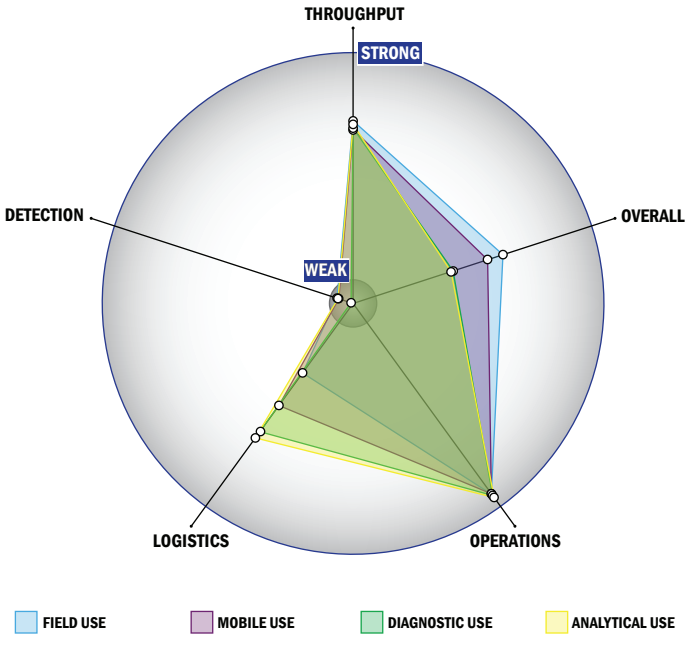
Scoring Analysis

System scores are compared across the four scenarios and ranked from highest to lowest.



Impact Chart

The Impact Chart is a spider graph representing specific categories and designed to give the reader a visual depiction of how a particular system is expected to operate across the four different scenarios. The score for each of the seven categories is presented as the percentage of the total possible score. Higher category scores extend the spokes of a graphic toward the outer edge of the chart. The area graphed for each of the four scenarios relates to how well the system performed in that scenario. Graphics for each of the four scenarios are super-imposed for ease of comparison.



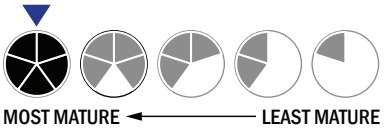
Evaluation Criteria

Throughput:

- 2 minutes or less for detection
- Multiple samples, multiple tests/sample per run
- 95-32 samples every 2 hours
- The system or device is currently fully automated
- Device or system is intended for multiple detection assays
- 0-1 solutions, buffer, eluents, and/or reagents
- 1 component
- 10-20 minutes is required for set-up
- 1-2 steps are required for detection

Logistics:

- An afternoon of training and some technical skills required
- Larger than a home dishwasher
- More than 50 kg
- Wireless and wired connections are available
- System or device has 110V electrical requirement



Operations:

- Can be used from -21°C to 41°C
- Device or system has peak performance at normal relative humidity conditions
- Between 1 to 3 years shelf life
- Greater than 10 years expected life
- Results can be viewed in real-time
- The system or device is currently fully autonomous
- The system software is open and available for modification
- The system hardware is open and available for modification

Detection:

- This system does not test liquids
- Poor specificity. System has a consistently high level of false alarms (>10%)
- Spore lysis not necessary for detection by system