

# Science & Engineering Services, Inc. - Low-Cost Biological Standoff Detection System



## GENERAL DESCRIPTION:

The Low-Cost Biological Standoff Detection System (LC-BSDS) is a lower-costing, modified commercial product that provides JBSDS-like standoff detection capabilities without the military-rugged package at a smaller SWAP footprint. This open architecture, commercial approach results in a lower baseline price starting below 1/4th that of JBSDS, with scalable capabilities via insertion of custom modules. 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 Low-Cost Biological Standoff Detection System (LC-BSDS) is a commercial lidar that uses an integrated transmitter-receiver with a 1067nm low-energy/high pulse-rate laser as a baseline capability. In support of customer needs, the scalable open architecture system can accept other laser wavelengths and/or software capabilities for added performance.

## CONTACT INFORMATION

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## COST

- \$250,000/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
<b>FIELD USE System</b>	○	N/A	N/A
<b>MOBILE Laboratory</b>	◐	N/A	N/A
<b>DIAGNOSTIC Laboratory</b>	●	N/A	N/A
<b>ANALYTICAL Laboratory</b>	●	N/A	N/A

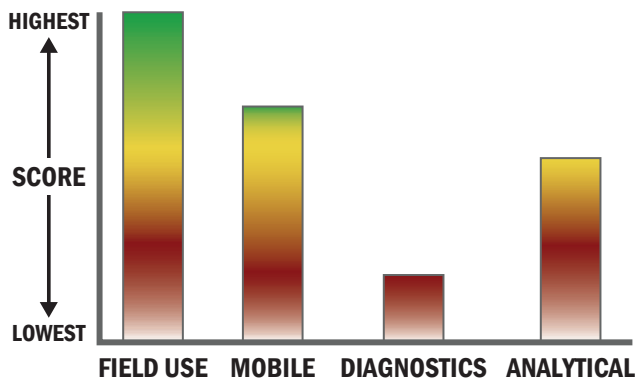
## Survey Source

Vendor Supplied Information



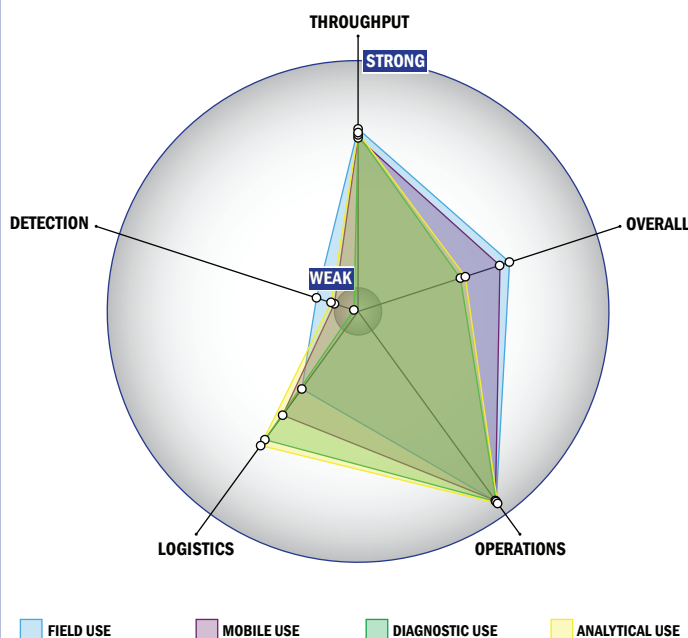
## Scoring Analysis

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.



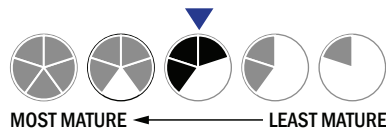
## Evaluation Criteria

### 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
- Approximately the size of 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 could easily be adapted into a fully autonomous system
- 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
- Superior specificity. System has a false alarm rate approaching zero (~0%)
- Spore lysis not necessary for detection by system