

# Building Protection Systems, Inc. (BPSI) - BUILDING SENTRY ONE



## GENERAL DESCRIPTION:

The Building Sentry One (BSO) is U.S. Department of Homeland Security SAFETY Act Designated technology installed to monitor a Commercial Office Building, Campus Complex or Stadium Environment. The BSO monitors both directly and remotely, airborne toxins in the fresh and return air supplies, lobbies and loading dock environments. If a toxin is detected, the BSO enacts a sequence of predetermined alerts and mechanical protocols to isolate toxins and to provide an early warning system for first responders. The BSO is installed as an all-in-one full backbone system and can integrate directly into an existing Building Management System. The BSO detects a defined spectrum of chemical contaminants, a wide library of radiological isotopes and select biological agents with sensitivity levels customized for each specific toxin. The BSO has been designed in modular fashion to support continued advances in chemical, radiological and biological sensory technology, with a “Plug and Play” overlay into the Sentry One network. The BSO is a fully functioning “Next Generation” detection backbone system that integrates sensory technology into just about any market ready project. With embedded controls, logic, software, mechanical protocols and remote monitoring coupled with multiple security means, this system is designed to operate 24/7/365 in the absence of false positive readings.



## TECHNICAL DESCRIPTION:

BSO is a COTS based system that detects a defined spectrum of toxic compounds, a 120+ library of radiological isotopes and select biological agents in a building’s HVAC system on a continuous 24/7/365 basis with virtually zero false positive alarms. Through the integration of programmable logic controllers and sensor arrays, linked to a PC infrastructure with multi-layer communications protocols, the BSO solution offers a dynamic set of customized security measures. The BSO’s backbone architecture mesh simply and easily with existing systems, in a seamless process that gives the end user virtually unlimited options for protection.

## 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>	<span style="color: green;">◐</span>	<span style="color: green;">◐</span>	<span style="color: gray;">○</span>
<b>MOBILE Laboratory</b>	<span style="color: gray;">○</span>	<span style="color: green;">◐</span>	<span style="color: green;">●</span>
<b>DIAGNOSTIC Laboratory</b>	<span style="color: red;">◑</span>	<span style="color: gray;">○</span>	<span style="color: green;">◐</span>
<b>ANALYTICAL Laboratory</b>	<span style="color: gray;">○</span>	<span style="color: green;">◐</span>	<span style="color: green;">●</span>

## CONTACT INFORMATION

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## COST

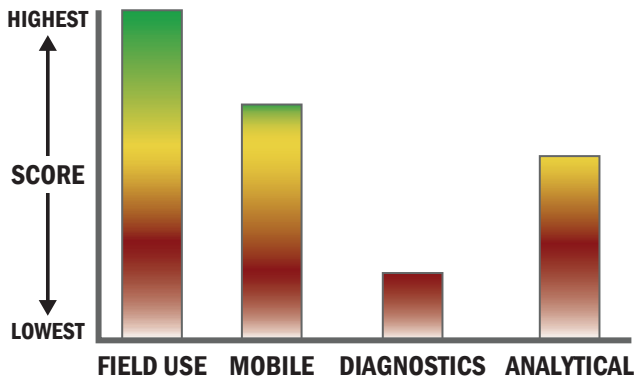
- N/A/system
- \$0/analysis

## Survey Source

Vendor Supplied Information

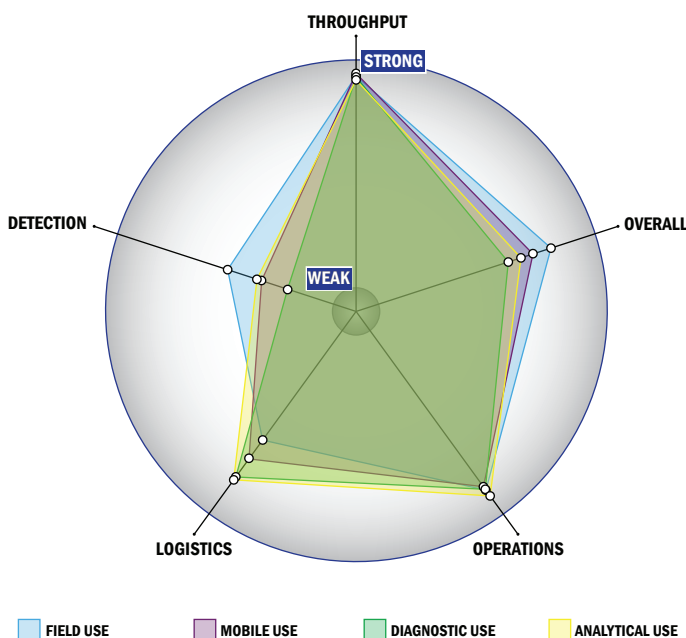
## Scoring Analysis

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.



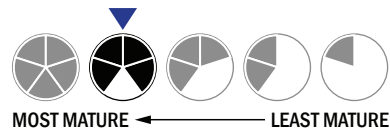
## Evaluation Criteria

### Throughput:

- 2 minutes or less for detection
- Multiple samples, multiple tests/sample per run
- System is continuous and provides real time analysis with no defined tests/samples
- 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
- No set-up of the system is required
- 1-2 steps are required for detection

### Logistics:

- Very brief (minutes-hours) training and minimal technical skills
- Approximately the size of a toaster
- Between 1 and 5 kg
- Wired connections are available
- System or device has 110V electrical requirement



### Operations:

- Can be used from 4 °C to 41 °C
- Performance is not influenced by relative humidity
- Greater than 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:

- Not possible for the system to achieve 510K clearance
- Not possible for the system to achieve FDA approval
- This system does not test liquids
- Superior specificity. System has a false alarm rate approaching zero (~0%)
- Manual kit not integrated with the system handles spore lysis
- $1 \times 10^{-6}$  -  $3 \times 10^{-5}$  mg/m<sup>3</sup>
- System can currently identify aerosolized chemical agent
- Total dose, dose rate and count rate with simultaneous display readout
- Down to background level radiation for dose rate
- Down to background level radiation for count rate
- System is used for area air sampling

