ITT Corporation - UGV-Based Mountable and Dismountable Standoff Chemical Sensor

GENERAL DESCRIPTION:

This is an ITT LISA Manportable sensor mounted on a Qinetiq Talon robot. It provides rapid scanning and short range standoff (0.5 m to 3 m) detection and identification of chemicals, agents, advanced threats and explosive materials. The user remotely controls the robot, views the interrogated spot and is provided detection and ID results in real time.

TECHNICAL DESCRIPTION:

The sensor is based upon 10 years of UV Raman standoff spectroscopic sensor development by ITT. It is a robot compatible version of the ITT LISA Manportable sensor.

CONTACT INFORMATION

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COST

N/A

Tier Selection

Final tier assignment is based on overall product score.

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

RANKINGS

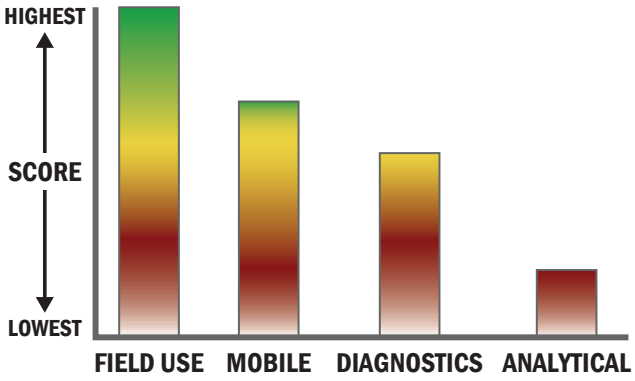
	Biological	Chemical	Radiological
FIELD USE System	N/A	Bottom Tier	N/A
MOBILE Laboratory	N/A	Bottom Tier	N/A
DIAGNOSTIC Laboratory	N/A	Bottom Tier	N/A
ANALYTICAL Laboratory	N/A	Bottom Tier	N/A

Survey Source

Vendor and Internet Supplied Information

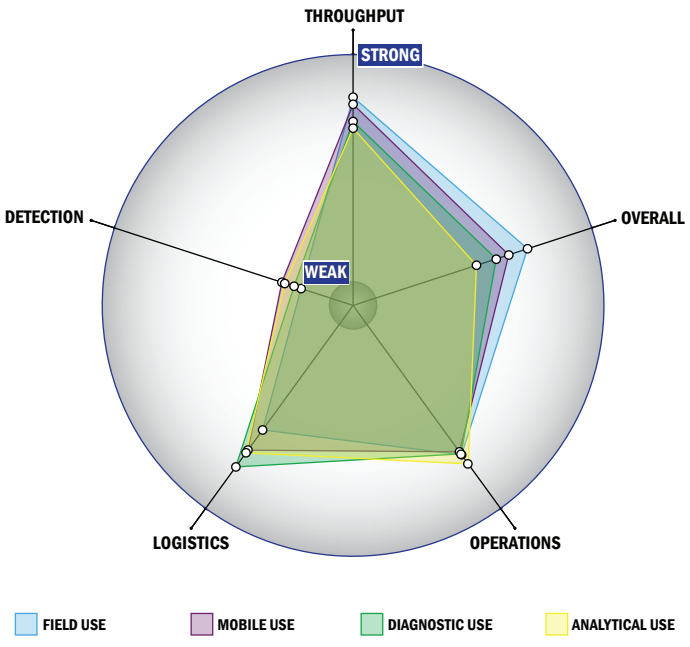
Scoring Analysis

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.



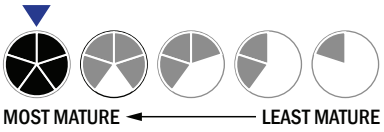
Evaluation Criteria

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 semi-automated
- Device or system is intended for multiple detection assays
- 0-1 solutions, buffer, eluents, and/or reagents
- 1 component
- 5-10 minutes is required for set-up
- 1-2 steps are required for detection

Logistics:

- A day of training and technical skills are required
- Approximately the size of a home dishwasher
- More than 50 kg
- Wireless and wired connections are available
- System or device uses batteries
- 2-4 hours battery life



Operations:

- Can be used from 4 °C to 41 °C
- Components must be stored at room temperature (27 °C)
- Performance is not influenced by relative humidity
- Greater than 3 years shelf life
- 5-10 years expected life
- Results can be viewed in real-time
- The system could be adapted to a fully autonomous system with significant effort
- The system software is closed and not available for modification
- The system hardware is closed and not available for modification

Detection:

- Less than 10 µL
- >1 ppt
- System currently can identify liquid chemical agent