



Providing Reliable Results.
Portable Detection
and Analysis Tools



Alert – ADSA12

One Resonance Sensors
Pablo Prado, Ph.D. - CEO

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Checkpoint Technology Enabling Effective Screening of Bottles and Portable Electronics

TECHNOLOGY SUMMARY

New benchtop and bench-integrated scanners

- Quadrupole Resonance-based portable electronics screening: detects explosives concealed in phones, tablets and other electronics
- NMR-based screening of bottled liquids: improves efficiencies to ban to travel with liquids

Supports TSA mission: Improves safety and help ease current restrictions.



One Resonance Sensors, LLC

Clients around the Globe

Headquartered in San Diego, CA

ORS offers innovative detection and analysis instrumentation for security, mining and food industries.

ORS clients include DHS S&T, NASA's JPL, Texas A&M, USDA, Rio Tinto, FMC, and Rockwood.



Facilities:

San Diego, California, USA
London, UK





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MobiLab[®] ES



Portable Electronic Device Scanner

THREAT: EXPLOSIVE IN PORTABLE ELECTRONIC



- Threats were identified: using Improvised Explosive Devices concealed in smartphones or tablets (NYT, 7.7.2014)
- Current screening technologies have difficulties detecting explosives hidden in electronic devices
- It is not viable to ban all portable electronics

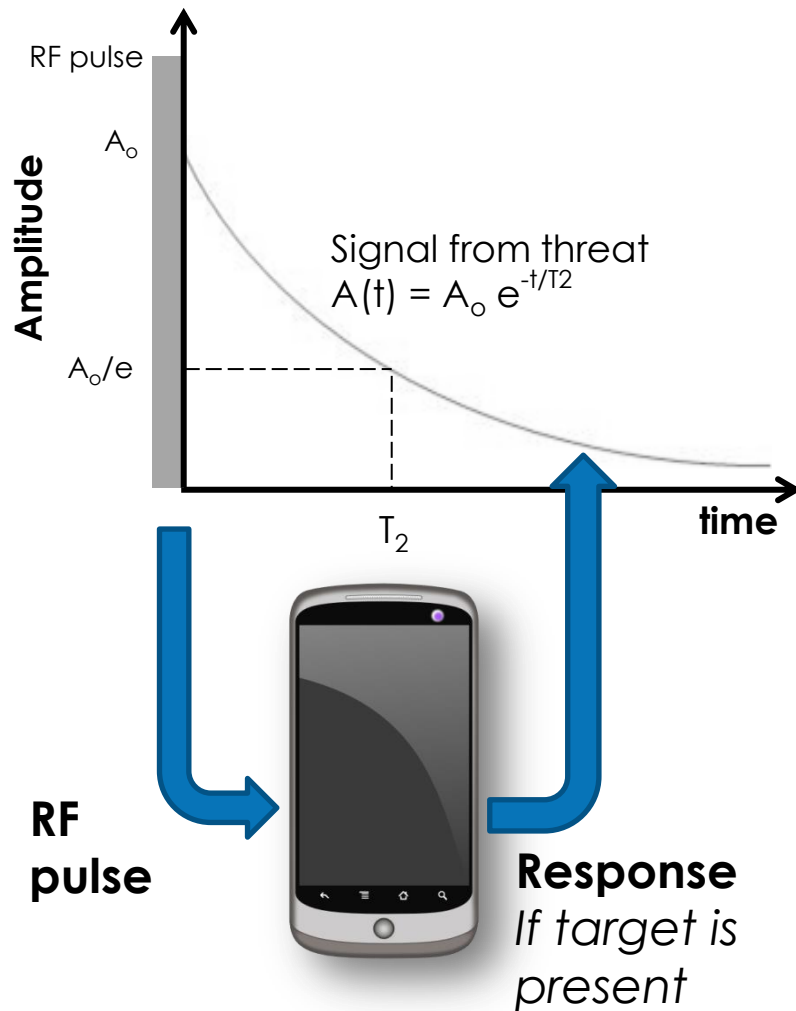
TECHNOLOGY SUMMARY

- High probability of detection, low false alarm rate and fast detection is needed for airport checkpoints
- Current technologies are not capable of address threat:
Optical, trace detection and X-ray based scanners have critical shortcomings: performance and/or scanning time

Solution

- RF fields inspect the device with chemical specificity. Find explosives in any physical configuration
- ORS capabilities to screen smartphones have been shown to US DHS, FBI, TSA – Evaluated at TSL
- DHS awarded contract to ORS in February 2015 to test the MobiLab[®] ES at TSL, TSIF, Quantico and UK facilities:
<http://www.reuters.com/article/2015/05/04/one-resonance-sensors-idUSnPn8rfrcw+80+PRN20150504>

ORS' SOLUTION – HOW IT WORKS



1. Portable Electronic Device is placed in the detection drawer
2. Scanner sends a sequence of RF pulses at the specific resonance frequencies of explosive materials
3. if target is present, a response is induced and threat is detected



MOBILAB[®] ES

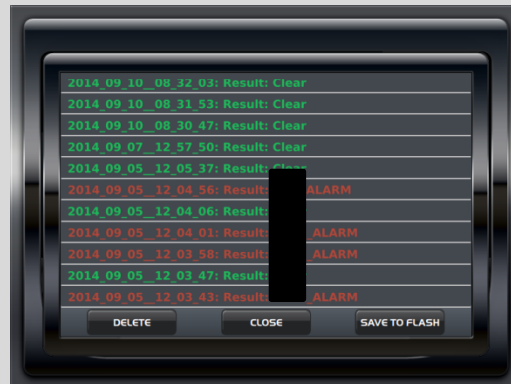


Parameter

Specification

Size	15" width, 14" height, 19" depth
Weight	26 lbs. (12 kg)
Consumables	None
Inspected Device	Max. 8" x 1 1/2" x 11"
User Interface	GUI, intuitive operation
Touch Panel	8" TFT Full VGA LCD
Sample Holder	Drawer - Tray configuration optional
Connectivity	USB, Ethernet and HDMI
Temperature Range	5 to 40 °C (40 to 104F)
Power: DC Input AC Input	24V DC, external transformer 110-240V AC, transformer included

USER INTERFACE



Scanner operation and Results Log are Password Protected

SCANNER EVALUATION

- **November 2014.** Prototype performance – TSL and TSIF
- **February 2015.** \$3,000,000 DHS S&T contract for evaluation at various government facilities in the US and UK
- **March 2015.** EU Demonstrations: DSTL, London, UK; German Police, Lübeck, Germany, Counterterrorism Department of Surveillance, The Hague, Netherlands
- **On going and Planned Evaluations**
 1. TSL – Under contract, On going
 2. TSIF in Washington DC - Under contract, On going
 3. UK DSTL – Under contract, June 2015
 4. Additional US government facilities – Under contract, June-July 2015
 5. German Police. Agreement in place, June 2015

CONCEPT: BENCH-INTEGRATED MOBILAB[®] ES

Integrated with Checkpoint Search Bench



MobiLab[®] BLS

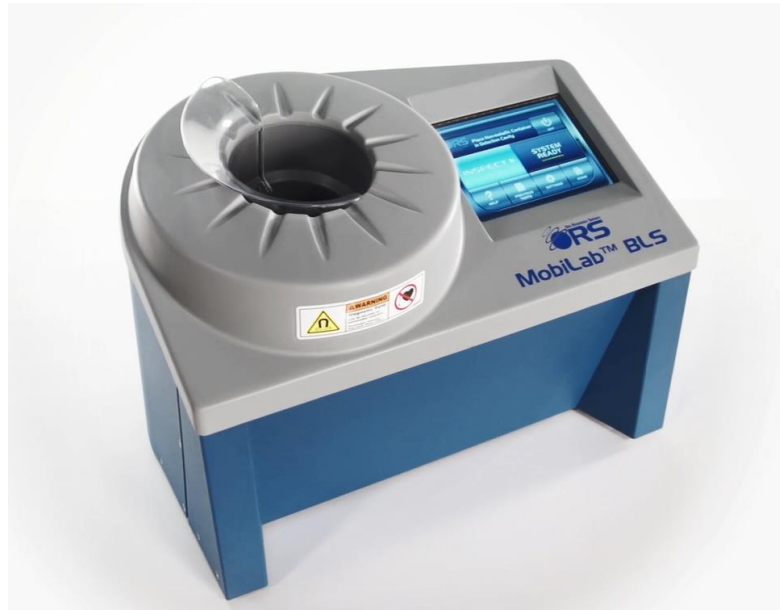
Bottled liquid security scanner for checkpoints

Features

- ✓ Simple and easy to use.
- ✓ Finds and sorts hazardous liquids presenting a simple CLEAR or ALARM message in seconds.
- ✓ Safe MRI technology. Does not use ionizing radiation or lasers.
- ✓ No moving parts, resulting in long product lifetime.



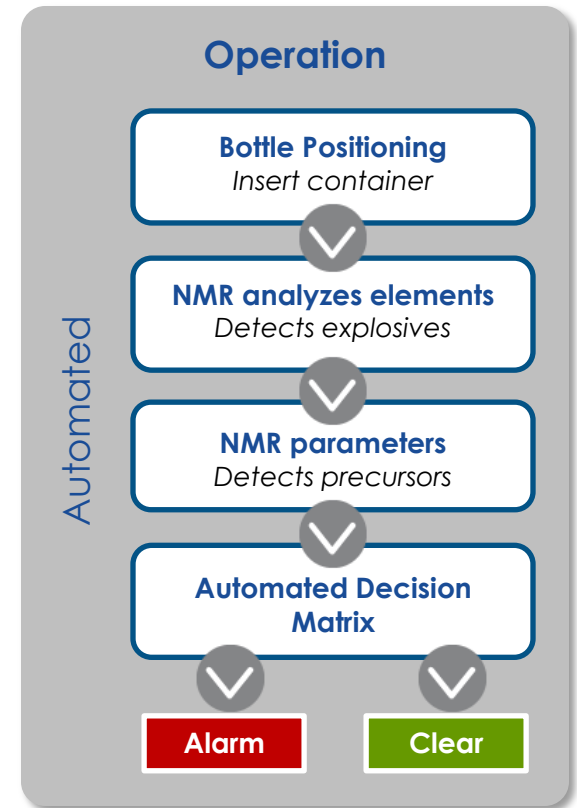
BOTTLED LIQUID SCANNER, MOBILAB[®] BLS



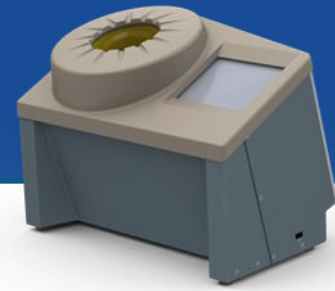
Endorsed by the European Civil Aviation Conference
ECAC, Type B, Standard 2



BOTTLE INSPECTION



MOBILAB[®] BLS PRODUCT ATTRIBUTES



- ECAC Endorsed Type B BLS
- Automated inspection in seconds
- Works with bottles of any shape and opacity - Plastic, glass, ceramic
- Scans bottles in package
- Easy to maintain and safe (MRI). No X-ray or laser

BENCH-INTEGRATED MOBILAB BLSi

- The MobiLab BLSi is integrated into a search bench, thus avoiding additional space requirements within the checkpoint footprint
- Screening of LAGs at the search bench is conducted via the lane's touch monitor
- Tests are tracked with Data Management System

