

# Thinking Outside the Box for Increased Security



German high-tech solutions to boost airport security and detection capabilities

**defpro.com | With the failed attempt to blow up a Northwest Airlines' flight on Christmas day and the false alarm that partially shut down the Twin Cities airport on Tuesday last week, airport security once again returned as a hot topic. As usual, after such frightening events, there is an international outcry for tighter security measures at airports. In the same breath, as security agencies around the globe are searching for the most advanced technology to increase the safety of passengers, civil-rights activists fear that the tighter security will lead to a further loss of individual freedoms.**

However, the question of whether we are willing to trade privacy for greater airport security is misdirected. The right question is "Which systems can master the security lapses that have occurred with a minimum of disturbance to innocent passengers?" This is not only because some passengers might be disturbed by the level of anatomical details that can be seen through full body scanners, but also because additional security measures, such as the scans, will automatically delay the entire checking procedure, causing economic damages. And one major aspect has often been forgotten: The best intelligence is often the covert one, where criminals and terrorists are not aware of security measures around them.

## The full-body scanner

In today's frantic search for better security, some new and some old ideas are being given serious consideration, such as mind readers and lie detectors. Many of these raise questions about civil liberties and all are costly. The most discussed security technique, however, is the full-body scanner, which will soon be installed in airports across Canada and which are also under consideration in many European countries as well as at all airports in the United States.

Following the incident on the Northwest Airlines' flight coming from Amsterdam, the Netherlands announced that

it would use more full-body scanners for flights heading to the United States. Dutch Foreign Minister Guusje Ter Horst said during a press conference in late December that the Netherlands previously did not want these scanners to be used because of privacy concerns. However, as a result of the incident, both countries' authorities have agreed that "all possible measures will be used on flights to the US."

Although some experts say that a full-body scanner might have stopped Umar Farouk Abdulmutallab from boarding the aircraft, many doubt that it would have detected the devices in this particular case. Indeed, another checkpoint would increase the security at a specific level, but it will need to be proven if this will do the trick.

## The Israeli model

When it comes to security, everybody looks to the Israelis, who are said to have the greatest experience in fighting terror. The Israeli airports are widely considered the most secure in the world, applying the so-called "onion" principle of security, which increase passengers' safety through a multiple-layer security procedure, including not only the screening of baggage with X-ray machines and metal detectors but also the screening of people. At Ben-Gurion Airport in Tel Aviv, travellers pass through different security checks before even entering the building. Most of these checks are done covertly, which allows separating suspect peoples from the rest before they even understand that they have been identified. This is a principle which should be considered by all airports wanting to implement sustainable steps to improve their security.

## Human contact

In Israeli airports, security personnel move around with the focus on screening people, not baggage. Most of the passengers do not even realise that they are going through a series of screens. The effectiveness of the screening is based on human contact. If a passenger is identified as suspicious, usually the next step involves security

personnel interviewing him, looking him in the eyes and seeing how he reacts to questions. When there is reasonable ground for suspicion, the person will be checked intensively. Thanks to this system, Ben-Gurion airport has been free from terrorist attacks since the 1970s.

Due to a variety of political and social considerations, the type of procedures applied at Israeli airports through human intelligence would most probably not be acceptable at European or US airports, being unavoidably regarded as synonymous to so-called "profiling". The question is whether technological solutions could be identified that would guarantee the same level of overall security without raising burdensome political issues.

As the Israeli "onion" principle shows, intersecting technologies are needed in order to keep terrorists from boarding airplanes with hazardous devices or materials. Of course, full-body scanners give a more detailed view of what people are carrying under their clothes than current systems. However, it is debatable whether even such a scanner would have detected the explosive material hidden in the underwear of Abdulmutallab who tried to bomb Northwest Flight 253.

In any case, it is wise to expand the use of expensive full-body scanners, but only as part of a broader strategy to make flying safer. Additional systems should be included in the entire safety architecture.



unival's HEDD1 hand-held explosive detection device

### New detection systems on the market

As such a complementary security system, German company unival group GmbH offers a handheld explosive detection device which would allow receiving real-time intelligence information in a covert mode. The HEDD1 (Hand-held Explosive Detection Device) could be the solution for which many security operators have been looking for. It works instantly, without the need of a fixed installation and can be used by any operator after a short training. The mobile system, which just entered the market in October 2009, works on a patented Magneto-Electrostatic Detection (MED) method. Creating its own

magnetic field, the HEDD1 is able to detect all kinds of commercial and military explosives, including TNT, dynamite, gun powder and liquid explosives. As soon as an explosive is detected, the handheld system moves the integrated antenna in the direction of the source.


Allowing long range detection up to 100 meters, the operator would receive important information without a direct contact with the travellers. "HEDD1 would find explosive material behind any barrier such as steel or other substances, outdoing a body scanner," David Vollmar, managing Director of unival group told defpro.com. HEDD1 would even detect so-called body-borne improvised explosive device (BBIEDs), explosives that suicide bombers might ingest or insert into their body cavities.

The cost-effective system could be easily added into any existing security system as it works complementary and maintenance-free without the need of a warm-up-time and with very short training intervals.

The integration of HEDD1 into current airport security structures would increase the security level immediately without creating any additional disturbance or delay to travellers. By using the detector from a wider distance or behind barriers, covert detection would be possible, providing the identification of a terrorist without unmasking the system being used to do so.

### Further developments

The system is arousing interest all around the globe and is currently being tested for base protection in Afghanistan and Iraq as well as for access, building and protection of personnel. It can also be applied for de-mining activities and for detection of weapons and ammunitions in military and police operations. A new working prototype of the handheld system has just been presented to defpro.com which can detect radioactive materials.

Hazard Detection Group, a company within unival group, is also developing and currently testing first prototypes with the focus on the detection of CBRN materials. Future developments will also consider stand-alone solutions allowing the implementation of the system on, for instance, unmanned ground vehicles (UGVs). 

By Luca Bonsignore, Publisher

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