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The Next Wave of Airline Security Systems

Britain's Smiths and France's Safran are among the leaders in new airport security systems, which range from explosives detectors to biometrics



By [Carol Matlack](#)

The attempted bombing of a Detroit-bound Northwest Airlines ([DAL](#)) flight on Christmas Day has touched off a push to improve airport security screening. But while most of the attention has [focused on body scanners](#) that could have detected explosives the would-be bomber concealed in his underwear, they are only part of a growing arsenal of high-tech equipment being deployed at airports worldwide. And unlike body scanners, which add to passenger screening time, some other new technologies could actually speed things up.



Ultra-sensitive detectors that can sniff explosive residue on passengers' skin or clothing as they walk past. Scanners derived from medical-imaging technology that can instantly analyze the contents of baggage. Facial-recognition devices and contactless fingerprint readers that can streamline passport-control procedures. All these, and more, are either on the market or close to it—and suppliers are jockeying for an expected boom in lucrative contracts.

Safran ([SAFRE](#)), a Paris-based aerospace and technology group, estimates that the global market for biometric equipment, which identifies people from their fingerprints, eyes, or facial structure, will grow 15% annually over the next three years. The market for explosives detection equipment is expected to grow 12% annually. Safran is active in both markets. "We want to be able to offer a seamless system to airports and security agencies," says Olivier Andriès, who heads the company's defense security division.

MOLECULES OF RESIDUE

On Jan. 7, Safran announced it had won a \$16 million contract from the U.S. Transportation Security Administration to furnish several hundred of its MorphoDetection Itemiser DX explosives scanners to American airports. The scanners, capable of detecting even a few molecules of explosive residue on passengers or in baggage, were developed by General Electric's ([GE](#)) Homeland Protection unit, which Safran acquired last September for \$580 million.

Safran bought the GE unit in a bid to challenge the global No. 1 player in explosives detection, Britain's Smiths Group ([SMGKF](#)). Smiths also sells body scanners and is bidding for business from U.S. and European airports in the aftermath of the Christmas bombing attempt. But [Stephen Phipson](#), president of the company's Smiths Detection unit, predicts that improved explosives detection will be an even greater priority. "In the short term we are likely to see an increase in explosive trace detection, with a greater use of whole body imaging in the medium term," he says.

Smiths is hustling to upgrade its explosives detection offering, which until now has been based on X-ray technology. Rivals such as Safran and U.S. company L3 ([LLL](#)) sell more-sophisticated scanners, similar to those used in medical imaging, that yield a 3-dimensional view of baggage contents, making it easier to spot, say, explosive material that has been pressed into paper-thin sheets.

A FUTURE FOR 3D

Although most U.S. airports switched to 3D screening of checked bags after the Sept. 11, 2001, attacks, Europe has continued to use X-ray screening, with Smiths as the leading supplier. But European airports are set to phase in 3D scanners from 2012 to 2018. That helps explain why Smiths in December signed an agreement to develop 3D imaging jointly with ([ALOG](#)), a Peabody (Mass.) company specializing in such technology.

Existing 3D scanners are generally too large and expensive to be used for screening hand baggage. That's why suppliers are offering smaller, less costly explosives detection devices, such as Safran's MorphoDetection Itemiser DX, for use at passenger checkpoints. The company won't specify the device's price but says it is in the "tens of thousands" of dollars, while 3D scanners for checked bags can run into the hundreds of thousands.

Won't additional screening for explosives add to waiting times at checkpoints? No, Safran says, because the detector is simply placed next to the X-ray machine where it can sniff out minuscule amounts of explosive material either in hand luggage or on passengers walking by.

BIODATA IN YOUR PASSPORT

Other new technology could help reduce the time passengers spend in passport-control lines. London's Heathrow and Paris's Charles de Gaulle airports are testing programs that allow passengers to bypass traditional passport controls—by signing up in advance to provide authorities with fingerprints and other biometric data stored on smart chips in their passports. At the airport, an eye or fingerprint scan instantly confirms their identity. Passport-control authorities at international airports in Australia now use facial-recognition devices so sophisticated they can identify even passengers who have undergone plastic surgery. Contactless scanners, able to read fingerprints or identify the faces of passengers as they walk by, also are in the works.

The industry's goal, says Peter Harris, an airport security consultant in Dover, Mass., should be "an integrated checkpoint that combines all these technologies and is user friendly and nonintrusive." Much of the screening that now takes place in airports is "invasive, uncomfortable, and unnecessary," he says.

Safran's Andriès says his company is hard at work developing just such equipment. "The fundamental technology already exists," he says. "What's needed most of all now is a way to limit the number of false alarms" that slow things down when passengers and their bags have to be manually searched.

Time-consuming security checks are more than just a nuisance for travelers. They can also wreak havoc with airline schedules, which in turn can add to operating costs. And they can eat into airports' profits. "If passengers are standing in line," Andriès says, "they aren't shopping in duty-free."

Check out our slide shows of the latest [airport security technology](#) and how new screening systems will [affect air travelers](#).

[Matlack](#) is BusinessWeek's Paris bureau chief.

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