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The futuristic scanners that could soon be delving deeper into your luggage

Dubai is bringing in state-of-the-art machines, allowing 'intelligent profiling' of bags' contents, slashing security times by 50 per cent



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The new scanners are significantly more powerful than the 2D X-ray imaging machines



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Artificial intelligence can write a passable sonnet in the blink of an eye and generate short movies in a matter of minutes. But could it be about to liberate us from one of the [most irritating aspects of catching a flight](#)?

That's the intention over in the United Arab Emirates, where bosses at [Dubai](#) airport want to harness AI's power to help overhaul the luggage screening process and save millions of hours in time for passengers each year.

According to airport boss Paul Griffiths, who cut his teeth at Gatwick airport before moving to the Middle East, the first step is to install state-of-the-art CT scanners – specifically the HI-SCAN 6040 CTiX – which are significantly more powerful than the 2D X-ray imaging machines (the ones that create those [orange, blue and green pictures](#)) still used in many airports.

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Not only are these scanners capable of producing hundreds of 3D images of your bag in a second, they are also able to use these to look for evidence of prohibited items, greatly reducing the need for human oversight.

Indeed, the scanners can even assess the density and composition of the liquids in your bag at a molecular level and identify whether they might warrant a second look from a security officer. In theory, that should mean that anyone carrying a typical bag of toiletries can sail through in seconds.



High powered scanners are capable of producing hundreds of 3D images of your bag in a second

The technology isn't that different from what is happening at other airports, says Richard Dempers, from airport security consultants Rheinberry, but that doesn't mean it isn't a big step forward. "These kinds of more modern scanners come with pre-programmed algorithms which can identify electronics and liquids with a high degree of accuracy," he says.

According to bosses at Dubai International, though, this is just the beginning of the process. The next step will be to use artificial intelligence to enable a process known as "intelligent profiling", by which AI will identify which passengers need to have their bags checked by a security officer.

The incorporation of AI will be made easier through the adoption of what security experts call "open architecture" – or the ability to share data and imagery with algorithms in real-time in order to take account of specific threats, says Dempers.

Rather than just picking up a bundle of phone chargers and USB leads like X-ray machines do, this allows airports to conduct more targeted surveillance, instructing the machines to look for particular items. In 2021, [Heathrow](#) ran a trial, working with Microsoft, looking to use AI-powered scanners to find items linked to illegal wildlife trafficking.

This kind of intelligent approach is useful when the nature of the threat is constantly changing, says Dempers. He points to 3D printing, which is changing the way that people can make and manufacture firearms, with the designs changing on a regular basis.

Global shift

Dubai International isn't the first airport to use AI to [improve the security process](#). Singapore's plush Changi Airport says it is trialling a similar AI-driven system, which has slashed security times by up to 50 per cent, while Amsterdam's Schiphol is working with a US-based security firm to do the same thing.

Dubai will also have competition from nearby Abu Dhabi, whose state-of-the-art Zayed International has become a byword for futuristic technologies, including facial recognition. The luggage screening process at Zayed International is now largely unmanned, with high-tech CT scanners sending images to a security team where necessary. As a result, most passengers pass through in a matter of minutes.

This kind of automation will increasingly be the trend over the next ten years, says Richard Dempers. "You are likely to see less of a human presence when you go through security lanes. That doesn't mean humans won't be involved – they almost certainly will be – but they will be working alongside these kinds of automated systems."

Challenges ahead

How long before Britain catches up with Dubai? Potentially not that long, given the new CT scanners are now operational at nine of our airports, including Gatwick, Luton, Edinburgh and Birmingham. The process has been much slower at others, in particular Heathrow. "That's partly because they have so many machines to upgrade," says one insider. Once the roll-out is complete, UK airports can [finally consign the 100ml liquid rule to history](#).

Another challenge for Western airports might be balancing some of the privacy and data protection concerns that come with AI-enabled systems, given that Europe has much stricter laws on privacy than the Middle East. That could make it more difficult for the AI to retain images of your bags in order to train its algorithms, for example, without violating data protection law.

Still, if AI is going to help us breeze through security quicker – and without having to root around your suitcase to find your toiletries – we may well find that travellers are willing to overlook those other problems. Particularly once they've seen how well it works in places like Dubai and elsewhere.

Five other ways AI may affect your holiday

Car rental

US car rental firm Hertz is trialling new AI-powered scanners which compare images of your rental car before and after your journey in order to find examples of damage that might otherwise escape the human eye.

Airline efficiency

British Airways is using AI to model its operations in order to identify potential efficiencies across its route map. Creating a “digital twin” of the entire process might sound technical, but passengers will be thankful if it eliminates those pesky delays.

Damage disputes

Airbnb is currently embroiled in a row with a disgruntled user who claims that their host used AI to digitally alter images in order to make an exaggerated claim for damages. The platform says it is investigating further.

Virtual assistants

MSC Cruises has its own Alexa-like voice-enabled assistant to answer queries from guests and help them book restaurants and other activities from the comfort of their berth.

Theme park policing

Theme park giant Universal has patented new technologies to monitor for signs of potentially disruptive behaviour – such as queue-jumping – and take action accordingly.

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