

# CHANGE MANAGEMENT

Simulations enable passenger terminals to be virtually adapted to changing market conditions while saving on the costly overheads of live trials

■ Governments around the world are continuously looking for ways to strengthen aviation security. Cabin baggage screening is often considered to be the last line of potential threat detection and must therefore be constantly improved to mitigate the ever-evolving security risks and threats.

Like many other governing bodies regulating the area of transportation, the UK's Department for Transportation (DfT) has introduced a directive forcing all major airports to add computed tomography (CT) C-3 scanners to their facilities, and process 100% of departing passengers through body scanners.

With the introduction of these new screening standards, passengers will no longer need to remove electronic devices and liquids from their luggage, making it quicker to prepare bags for screening and requiring the use of fewer trays. However, x-ray images will become more complex, increasing the total processing time of passengers' trays.

Taking that into consideration, most security checkpoints will require redevelopment and optimization to maintain or even improve their current capacities.

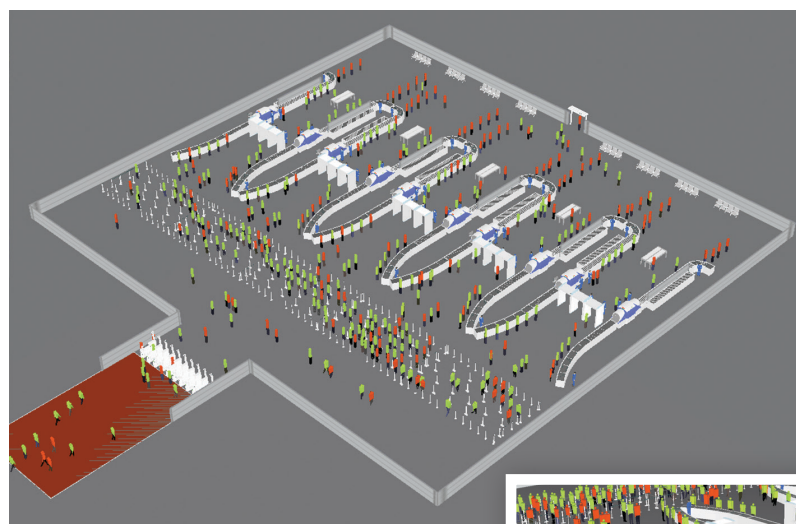
## Transoft AirTOP

In response to this, many airport operators have turned to fast-time simulation tools, such as Transoft's AirTOP software, to get the answers and certainty they seek when undertaking significant capital investment programs.

EBEA Consulting conducted such a study at a UK airport that served more than 12 million passengers annually pre-Covid. The simulation provided the opportunity to test the performance of the future checkpoint processes and assess the interaction between the new CT C3 scanners and full-body scanning. This provided insight into the expected individual lane capacities, as well as a prediction of the expected queue lengths and waiting times. The study then compared these against the airport's own targets, KPIs and service level agreements.

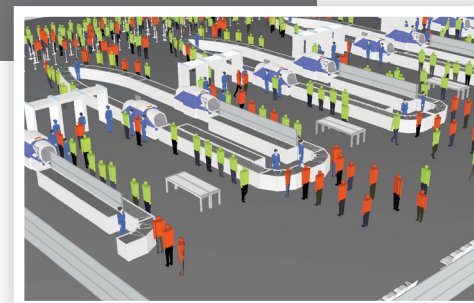
For each case, and with the aim of providing a wide range of meaningful conclusions, these controlled simulation environments allowed for the testing of different infrastructure provision levels, passenger behaviors by season, and even staffing availability levels. At the same time, an assessment of potential system bottlenecks was conducted to alleviate pinch points before they occurred in real-life operations.

Another benefit of using fast-time simulation was the ability to test a range of security checkpoint design and redevelopment strategies. This



LEFT  
Fast-time simulation software is used to simulate a 3D representation of the security process with new CT-X machines

BELOW  
3D representation of passengers collecting carry-on bags and the secondary screening area for suspect bags



The simulation helped avoid **real-life trials** that are usually associated with significant **capital and operational expenditure**

was vital to provide guidance on the amount of infrastructure that could simultaneously undergo modernization while maintaining enough capacity to offer an undisturbed and smooth passenger proposition. It also provided information about the resilience of the security checkpoint infrastructure and identified future trigger points for further expansion of the area.

Evidence in the form of simulation results enabled the airport operator to make a data-driven decision on the type and amount of infrastructure it selected to use in its security checkpoint and the pace at which it was deployed into live operation.

## Financial sense

The simulation helped avoid real-life trials that are usually associated with significant capital and operational expenditure due to the need to install

and operate new infrastructure and dedicate staff to the testing activities.

"The optimization process is vital for all airports around the globe," says Tomasz Migacz, managing director at EBEA Consulting. "Through changes and revisions, they must adjust to technological advancements, ever-changing market conditions and other challenges imposed by external factors, such as global pandemics or new regulations."

Fast-time simulation offers unique opportunities to test new designs and trial innovative solutions, technologies and concepts of operations (CONOPS). It can help identify system bottlenecks, assess different mitigation measures to alleviate them, inform minimum operational requirements to achieve business targets and find the right balance between capex/opex and passenger experience.

It is also an invaluable tool in assessing airport design and expansion projects, thanks to the ability to identify the most impeding stages of the proposed development phasing programs. All this can be achieved with no need to spend significant amounts of capital and without the risks and disruption associated with testing new solutions in live environments. ■