

READY FOR CHANGE

Changing dynamics of the passenger terminal can be confidently managed with fast-time simulation

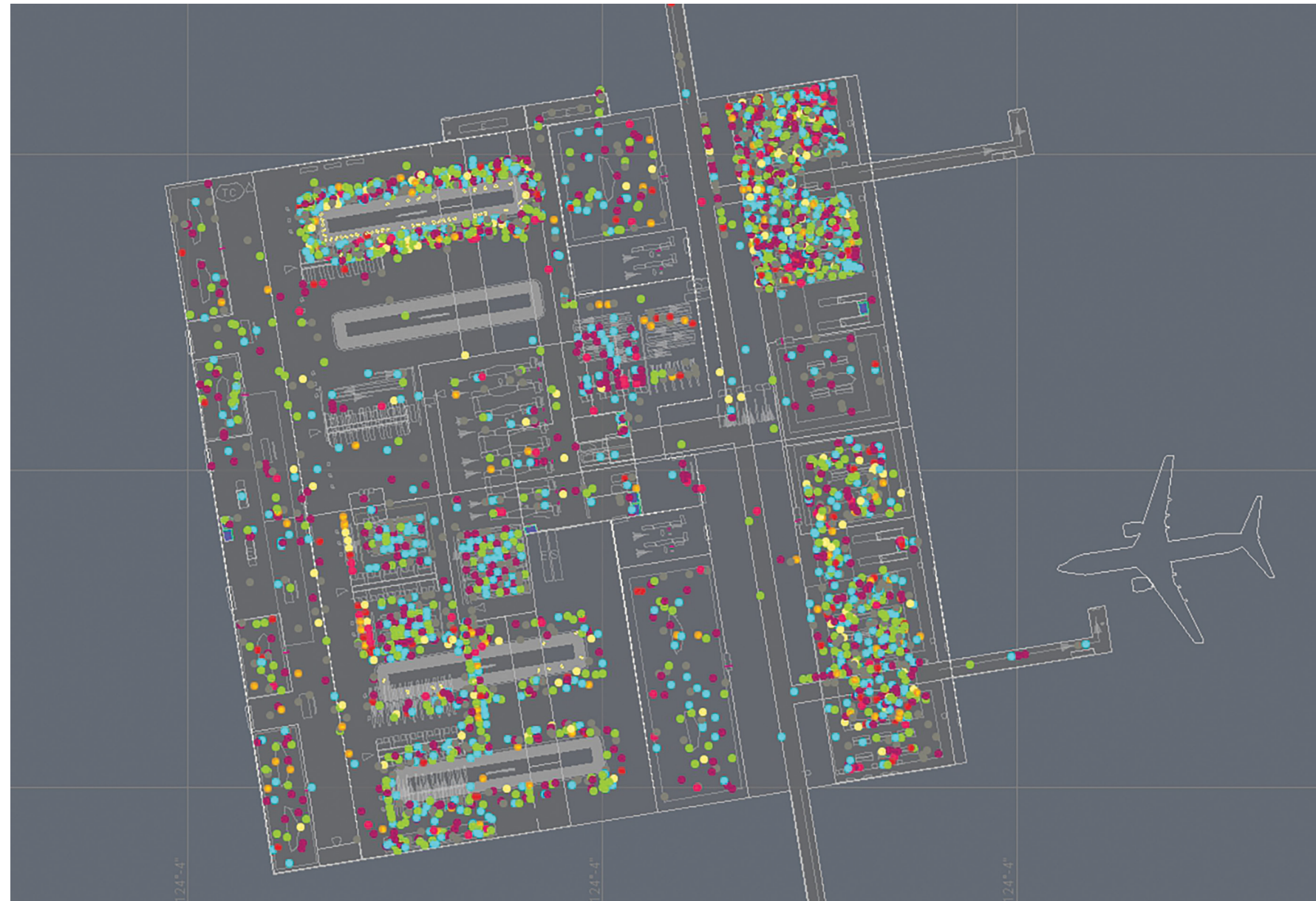
■ With passenger terminal facilities experiencing countless changes as a result of the pandemic, the ongoing recovery and related new or modified procedures such as virtual queuing, fast-time simulation has become a more valuable analysis method than ever before.

In these challenging and dynamic times, it is evident that the future will not just be an extrapolation of the past, and that historical data may not be suitable for creating predictions for future passenger flows. Simulation provides an insight not only into the correlations but also the causality between future flight schedules and future passenger flows. At the same time, it offers unparalleled

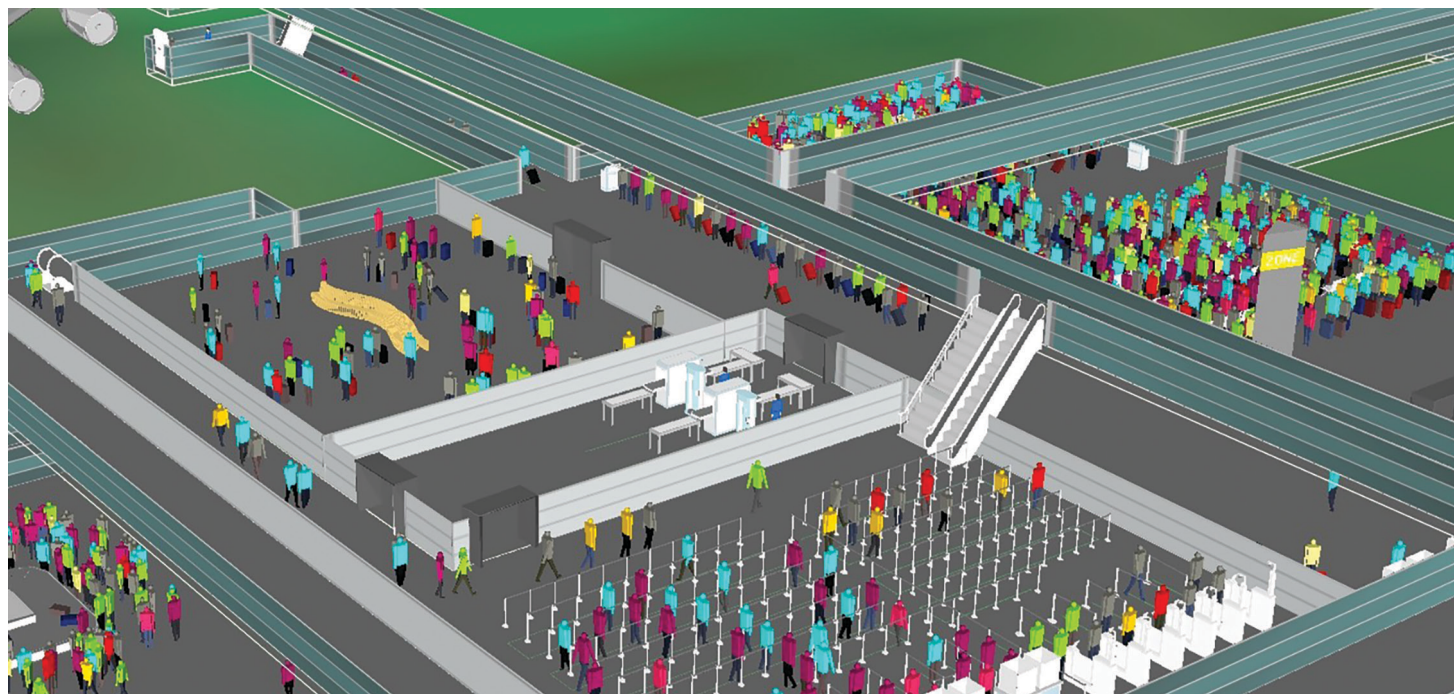
analysis of what-if scenarios and the opportunity to visualize these to better understand what the figures really mean.

A multi-use solution

To support airport stakeholders in tackling these challenges, Transoft Solutions will soon expand its AirTOP software for airport and airspace fast-time simulation with a terminal module. With the inclusion of this new module, which uses established AirTOP technology and algorithms refined over the course of some 15 years, the software will offer a unique, integrated platform to simulate the entire passenger journey from terminal to terminal.



“ The module provides not only **excellent realistic data for strategic planning**, but results can also be used tactically for operations on the day ”



ABOVE
Overview with various type of (color-coded) passengers at check-in, security, boarding, immigration, reclaim and in other parts of the terminal, clearly indicating areas of congestion

LEFT
3D representation of the terminal in a virtual environment that easily can be enhanced with additional materials, furniture and other interior aspects

Additionally, the terminal module can also be used as a standalone for focused studies and optimizations within the passenger terminal only, which is already a world on its own. It enables users to define the various facilities in the terminal and dynamically measure key performance indicators, with the IATA Level of Service one of the most well known. Extensive reporting and visualization/animation tools provide answers to questions on the layout and operations of all processes from check-in to reclaim.

One of the most common complaints at airports concerns the limited interaction between planning and analysis staff on one side and daily operations on the other. The planning and analysis activities are usually performed in a different department, quite often supported by external consultants. Translating the theoretical results to practical measures that can be applied by the operations team has at times been challenging. The AirTOP terminal has taken on this challenge, integrating optimization techniques in the simulation environment to bridge the gap between theory and practice.

A good example of this is the dynamic resource allocation for the check-in counters in the departure

hall. The module provides not only excellent realistic data for strategic planning, but results can also be used tactically for operations on the day. As such, one software serves multiple purposes, where currently at least two tools are required.

Post-operational analysis

An often-forgotten aspect of fast-time simulation is the ability to perform post-operational analysis. Particularly for those days where bottlenecks occurred in the passenger flow, causing long queues and waiting times, analysis with fast-time simulation can provide useful insights into how to avoid or at least mitigate these in the future. Today, more data about the passenger journey is available than ever before, such as through boarding card scanning at the security check, making it easier to supply the simulation software with the correct information.

This larger volume of available data opens new opportunities and can contribute to increased accuracy of simulation results. This enables stakeholders to make even more informed decisions, whether they concern a drastic modification of the entire passenger terminal or just a reconfiguration of security screening. ■