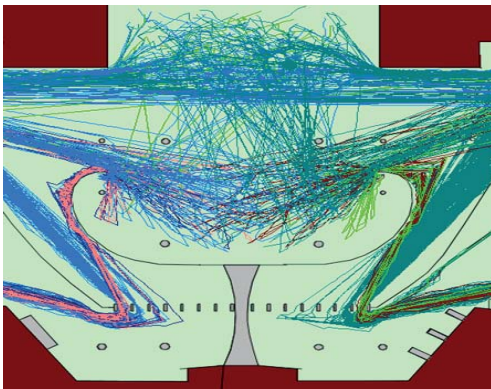


# Improving the Dynamics of a Congested Airport Arrival Area with a New Design

To cope with the increasing capacity demands in airports, the optimization of functional spaces is one of the central measures to improve the efficiency of passenger operations. A simulation study with Simwalk Airport compared the efficiency of an existing, inefficient design of an arrival area with a new, planned design. The study revealed that the planned layout excelled on many efficiency parameters as for example density avoidance, higher flow rates, reduction of speed loss and travel time.

A core decision for this typical airport passenger simulation study consisted in the selection of the appropriate analysis parameters. Which parameters are best suited to provide a comprehensive picture of the efficiency of a certain airport area regarding passenger operations? Together with managers and planners of the airport, passenger density, speed loss, path shapes and travel time were selected as the suitable analysis parameters.

In addition, passenger numbers and passenger types for the simulation were selected based on flight schedules and other evaluations as well as counting efforts at the location. This provided a solid foundation of data to conduct an accurate simulation study. The time frame from 6am to 9am was chosen as the most problematic peak hours for the area. In addition, to evaluate the resilience of the proposed design, a future increase of passenger numbers of 20% was assumed for one scenario.



The results of the simulation study revealed the supremacy of the planned design which will introduce a smoother geometry, compared to the rectangular one given by the old layout, and the separation of flow and waiting areas. In addition, passenger stopping, potentially causing bottlenecks and den-

## Summary

A passenger simulation study at Paris Charles De Gaulle in France compared the efficiency of an existing arrival area with a planned design. The study revealed the superiority of the planned layout compared to the old layout based on many efficiency parameters delivered by the simulation.



sities, were reduced, the flow rates increased, and travel times could be shortened. Smooth trail shapes visualized clearly the undisturbed path of passengers (picture on the left) provided by the new layout.

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