PASSENGER FLOW SIMULATION

Brisbane Airport

INDUSTRY
Crowd Simulation & Infrastructures

APPLICATION AREA
Airport

COUNTRY
Australia

CHALLENGE
Improve and support the decision making process, in order to maintain the desired service level while capacity is increasing.

SOLUTION
INCONTROL modeled a current and future situation for the terminals and analyzed pedestrian flows.

KEY TO SUCCESS
With simulation software you can analyze bottlenecks, identify potential improvements and perform what–if analysis.

For the sixth year Brisbane Airport was ranked as the best Australian Airport. They chose INCONTROL's simulation software to keep this position!

BRISBANE AIRPORT
Brisbane Airport, situated in South East Queensland is the third largest in Australia (on passenger numbers) and ranked 61 in the World. For the sixth year in a row Brisbane Airport was ranked by the ACCC as the best Australian Airport for overall quality of service, standard and availability of facilities. The airport consists of two terminals, domestic and international, two runways and is operational 24 hours a day 7 days a week. In the year 2009 the international terminal served approximately 4 million international passengers and 14.5 million domestic passengers. By 2015 the international terminal is predicted to host more than six million passengers.

EXPANSION TERMINALS
Major project works were planned for both the domestic and international terminal to be able to host the growing number of passengers. Recently the international terminal has been extended with more capacity at all levels. Capacity increased in the check–in areas as well as in security, customs and reclaim areas. Also at the domestic terminal plans are ready for big renovation works and extension of the terminal and car park facilities.

ANALYZE BOTTLENECKS, IDENTIFY IMPROVEMENTS AND PERFORM WHAT–IF ANALYSIS

In order to improve and support the decision making process, Brisbane Airport decided to buy INCONTROL's solution for simulation of airport processes. Brisbane Airport was looking for a terminal modeling tool and models for both terminals. INCONTROL developed several models for Brisbane Airport. For both terminal buildings the current and a future situation have been modeled. The models give valuable insights in the passenger flows throughout the terminal buildings. They enable the user to analyze bottlenecks, identify potential improvements and to perform what–if analysis and thus support the decision making process on operational, tactical or strategic level.

USER TRAINING

Once the models were finished, operation managers at Brisbane Airport have been trained to use the simulation models for further analysis and experiments. The user can edit operational parameters like process times and capacity planning to represent actual or future airport operations. An input module is provided where the flight schedule can be loaded. The input module generates passenger numbers based on aircraft utilization and transfer rates.

OUTPUT

Besides visual insights when running the models, the solution includes an output module which exports the results to Excel. The output module shows results of resource utilization, throughput times and queue lengths per process and per area. It also shows the dwelling time of passengers in the commercial areas.