

PSI Offers Future-proof Airport Software

SUCCESS FACTORS FOR A SUSTAINABLE DIGITAL TRANSFORMATION

PSI Logistics presents, among other things, the video monitoring module PSIAirport/CCTV with new functionalities. With an advanced assistance system for dynamic dispatching, the software developers have also expanded the application spectrum of PSIAirport Solutions with a module for further digitalization steps and more sustainability through AI-based, automated resource efficiency.



The analysis, provision, processing and visualization of data has become a decisive success factor for companies. This also applies to the operating companies of the multifunctional service center airport and the operational processes in the airport environment. A huge volume of data in a wide variety of formats is being generated from an increasing number of sources, and this data needs to be filtered and used efficiently in order to create added value for those involved. At the same time, according to the European Union's climate targets, the CO₂-emission-free airport should be reality by 2050. Airports are making huge investments to achieve this goal. Stuttgart Airport will invest around 2.4 billion euros by 2040 in the areas of energy efficiency and generation, smart grids, as well as mobility and transport. Munich, Nuremberg, Berlin, Dortmund and Friedrichshafen airports are using LED lighting connected to the intranet, among other things. The lights each have their own IP address-

ses and can be controlled individually. Thanks to its high energy efficiency, Munich Airport already saves around 12,000 tons of CO₂ annually. The above-mentioned requirements demonstrate the high importance attached to the extensive IT landscape as an important component of environmental management for airports.

Closed Circuit Television (CCTV) functionally enhanced

Back in 2018, a study commissioned by Amadeus IT Group from Arthur D. Little's business consultants highlighted how new technologies can increase airport efficiency and reduce costs, and how digital transformation can help airports meet the rising expectations of passengers, airlines and stakeholders. In this technological mix, PSI Logistics has set standards with its PSIAirport Solutions for automated baggage handling (PSIAirport/BHS) and baggage reconciliation (PSIAirport/BRS). With the current releases, the systems offer users further

savings and optimization potential in the digital transformation and resource-efficient process management.

For example, Closed Circuit Television (CCTV), an innovative system for AutoID, tracking and documentation in automated baggage handling, has been put into operation at Hamburg Airport, and also at Cologne/Bonn and Rostock airports by using artificial intelligence (AI) methods and processes, neural networks and deep learning. The video monitoring module PSIAirport/CCTV can individually identify the baggage items without additional scanners by image capture alone and document their path on the conveyor systems by using neural networks. The module detects any damage to the baggage items, automatically reports corresponding changes and supports the determination of the cause. Investment into additional scanner technology is no longer required, the error rate is reduced, resources for rework are eliminated, which in conventional processes at airports can account for up to ten percent of the baggage volume, and the service level is increased. In the current release, the software automatically recognizes and processes baggage, differentiates the size and color of between hard suitcases



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and soft travel bags, and records equipment features such as handle design and number of rollers. "This optimizes documentation and supports quick access if a piece of luggage needs to be removed

again before take-off," says André Beck, Senior Project Manager for PSI Logistics.

Big data management for dynamic dispatching

The enormous computing speeds achieved via AI and neural networks also enable efficient Big Data management against the backdrop of resource efficiency and sustainability. "With their AI-supported functionalities, PSIAirport Solutions open up a multitude of levers where targeted analyses lead to significant savings and process optimizations within the framework of Big Data concepts," says Beck.

For example, reliable forecasts of passenger and baggage volumes can be created by evaluating existing archival and actual data. On the basis of these forecasts, baggage handling operations can, for example, plan baggage volumes in advance and operate and control sorters in line with demand, or shut them down in a planned manner if there are gaps in capacity utilization. The same applies to the route-optimized apron allocation and distribution of gates and sorter drop-off points for fast ground handling or the X-ray screening equipment. "Such intelligent processes and system planning with temporary shutdown and optimal use of resources already opens up significant savings potential without having to invest in the replacement of hardware components," says Beck. "Further adjusting screws for the green airport can be named according to the analysis results, for example, with the optimization of temperature losses through uncontrolled hall door opening in the sorting halls."



- 1 Display system at Hamburg Airport
- 2 Capturing a piece of luggage with PSIAirport

For such an equalization of traffic peaks and an even utilization of work areas and resources, PSI Logistics has now launched an AI-based assistance system with the "dynamic dispatching" for PSIAirport Solutions. Based on the available data and analysis of the entire database, the system determines in real-time the maximum value of a resource-optimized system and process control and initiates it, or suggests appropriate options to the dispatchers. The functional spectrum ranges from the analysis of performance data and archival data to energy-efficient and route-optimized deployment and utilization planning for

plants and personnel. "Time and energy savings are both success factors for sustainable digital transformation," explains Beck regarding the benefits for airport companies.

"In future development stages, the system will also be available as a web component from the cloud, which will provide access to the entire data material for numerous authorized users. This reduces energy consumption in the control center and at the same time shows the development direction of future-proof airport software."

PHOTOS: PSI LOGISTICS, HAMBURG AIRPORT



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