



Copenhagen Airport Optimizes Baggage Sorting with iFIX from GE Digital



The fully-automated baggage-handling systems at Copenhagen Airport (CPH) play a central role for most of the personnel and companies either working in or using the airport.

The system, which currently handles between 20,000 to 25,000 items of baggage each day, is owned and maintained by Københavns Lufthavne A/S, CPH.

iFIX from GE Digital, which has monitored baggage sorting in the Copenhagen Airport for many years, has joined forces with Plant Applications from GE Digital. Together, these solutions can help reduce wait time and improve efficiency for CPH's business-critical baggage sorting systems.

Currently, CPH is in the process of upgrading iFIX and installing new solutions to ensure even more efficient baggage handling.



Solid and flexible

The fully-automated baggage sorting system and its numerous conveyor belts have been controlled, regulated, and monitored by iFIX since it was built. iFIX is a flexible, integrated solution that provides superior process visualization, data acquisition, analytics, and supervisory control of operations.

“iFIX has done an excellent job over the years, and continues to be one of the most solid and flexible SCADA platforms on the market.”

Lars Peter Larsen, System Specialist, Copenhagen Airport

Henning Pind, a System Specialist at CPH's baggage terminal, enjoys the flexibility and scalability of iFIX to meet the airport's ever-changing needs. "iFIX is particularly strong because it is so configurable and can talk with so many different PLCs. The specialists here in the airport have always been able to maintain the solution and set up new screen graphics, databases, and alarms when necessary," says Pind.

And over the years, there have certainly been plenty of new screen graphics. The solution has grown from two to four SCADA servers, and from around 8,000 to over 25,000 I/O points. 23 general PLCs run the main lines, along with 500 minor PLCs.

Many of the I/Os are pure digital signals, with a lesser degree of regulation. But the solution is large, and with 18 flat screens and associated keyboards on a single desk. The control room could easily be featured in a modern Hollywood production.

“We are now switching to a new iFIX version in a continuous process, in the course of which we will undoubtedly introduce new features and functionality. We are not fully utilizing the potential in iFIX to the utmost at this time, and there are sure to be lots of things we can do better,” concludes Pind.

Double-click for maintenance

Usability has been much improved as iFIX has been given more functionality. For example, it currently supplies data to SAP's maintenance module which administers the various maintenance intervals of the system.

A single double-click on an iFIX alarm sends it to SAP, which then automatically sets up a work order. That's how simple it is.

The maintenance intervals are defined by the various system vendors, but the maintenance department also uses historical data from iFIX if an error reoccurs and the maintenance interval needs to be adjusted.



OEE picture completed

Pind describes investment in the Efficiency Module of Plant Applications solution as a natural part of ongoing optimization of the baggage system. This software monitors and controls performance with a comprehensive view of factors such as OEE and equipment downtime.

CPH is very familiar with benchmarking uptime criteria, with only the conveyers behind the check-in desks not being measured.

"We could have chosen to implement our OEE needs in SAP—but we have a good relationship with our SCADA vendor Novotek, and that's why we decided to go with GE Digital's Plant Applications and Change Management for configuration management of our PLC software," said Pind.

Optimization and documentation

"Our responsibility starts when the baggage rolls onto our conveyor belt, which runs behind the check-in desks, and ends when a handling company employee loads the baggage from the box and onto a cart to take it to the plane. The handling companies, such as SAS Ground Service and Novia, depend on the efficiency of our systems, which is why it's vital that we can improve uptime." shared Pind.

No more queues

Once the solution is fully configured on all belt lines, it will be measured specifically on queue times. Queues have many causes, and can occur almost anywhere. During peak periods, up to 40,000 pieces of baggage per day can be handled, which means queues can form even when everything is working smoothly—just like on a motorway.

"We are now finalizing our uptime solutions, which will give a much more detailed picture of the problems and options we have. We are developing a KPI bus, on which we can collate all OEE figures in a dedicated database. And when it is ready, the solution will give a general picture of the entire system, and have the ability to be able to define a very detailed picture of a line, an error, a stop cause, and more. The Plant Applications web server included in the bundle from Novotek can be customized to meet the needs of each unique user, and instead of them calling me, they will be able to log in to their own personal OEE browser in the future, to check the figures they want," says Pind.



Important risk management

“The Change Management solution we installed is a tool for configuration management of our PLC software. The module monitors the system and ensures that the software we have on the PLC is identical with the version we have on the server,” explains Pind. “Any changes are logged and documented, such as who’s been in and out, what’s been changed, and when it was logged.”

The baggage sorting system has to run day and night, and “firefighting” situations which arise are those that cause problems. If a technician, for example, goes into the system remotely on a Saturday evening and forgets to log changes, there will be discrepancies when a new technician arrives Monday to fix the error properly. There is always a risk of a discrepancy in such a large system as ours and the fact that most of our PLCs run in tandem as an extra safety feature does not make things any better. Discipline is needed to ensure identical changes are made in both PLCs, including the one which is not in operation,” states Pind.

Change management is a must

The solution provides, first and foremost, security and then gives us vital history and documentation of changes.” According to Pind, the control room personnel know exactly who to call for an explanation on software changes and the like. And if the technicians are also willing to write a comment to their changes, it makes things easier for everyone.

“Our change management solution was a relatively small investment, and will quickly pay for itself,” concludes Pind.





About GE

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