

Baggage Handling

Case Study

The "Shelterspan" Baggage Transfer Facility

Background

Upgraded London Heathrow's Terminal 3 with an improved baggage transfer connection and security screening service in keeping with a major international hub. The result, the "Shelterspan" baggage transfer facility at T3 is now meeting all of its growth and efficiency targets that is expected from an airport terminal that is currently home to some 44 different airlines from around the world.

The Challenge

A key feature of the new Shelterspan baggage transfer system is a Management Information System (MIS) that was fully upgraded by ASE who worked on both the original system, and the new project through baggage handling systems company, Fabricom Airport Systems.

The MIS was completely revised and crucial control changes that affect the function of the management system for the benefit of airport staff were made. These changes provided additional and separate control systems for the incoming and outgoing Inter Terminal Operation (ITO) and Early Bag Storage (EBS) functions. This systems update covered new control options that have been created in a special screen that allows individual areas of the system to be started or controlled from the MIS

ASE comment: *"Previously, we could only start or stop the system as a whole, which is disadvantageous. A highly complex baggage handling system needs to have more flexibility to cope with bag jams, so it is desirable to be able to stop and start various functions."*

Panel Control mode and MIS Control mode options were added so that the MIS can be put into a mode where an operator can start the individual areas of the baggage handling system from a screen in the control room, or allow an operator to physically start parts of the system from control panels located on the conveyor system. The MIS pre-programmes whether or not that aspect is available or enabled from the hardware on the system. There are basically three options available: to start/stop all areas (global sequence start) from the screen, an individual area remote control option, and a physical local control option on the hardware, but only under the governance of the MIS.

Key benefits of the newly created options are that they provide higher levels of flexibility, which is fundamental when dealing with complex baggage handling and screening systems, requiring interaction between original and new PLCs and without the need to change the original Allen Bradley PLC source code.

ASE comment *"On the MIS, our brief was not to hack the original source code as this would have meant more expense and a massive amount of re-testing, "*

Early Bag Disabled/Enabled Function, has also been added to MIS to enhance the Early Bag System ie. to start the sortation at a prescribed time.

ASE built a new Report System and improved the data base structure from DB4 to the more flexible requirements of an SQL Server. The existing reports replaced with automatic and criteria selection reports. This has simplified the process and made the system more usable.

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Benefits

- 44 International Airlines
- More efficient baggage handling
- Greater system flexibility
- Independently operated systems
- System controlled transparently by MIS
- Reduced downtime.
- Easy report generation

Project Statistics

- Upgrade of complex MIS system
- Separate strategic control systems
- Simplify the system
- New control options added
- 3 Starting options
- Re-configuration of plough converters
- Upgrade database structure from DB4 to SQL
- Develop new reports

System Characteristics

- Management information System (MIS)
- Separate control systems
- Individual area control
- Added to system without changing legacy source code
- 3 FactoryLink Servers
- Web-client terminals