

Mobile RFID Solution for Airport Baggage Handling

The IATA-approved solution can be immediately integrated without any accessing of existing IT infrastructures being required

Baggage handling - probably the most complex task that every airline has to deal with

For the airline passenger it all looks so simple: you check in your bag, board the plane and you pick up your baggage once again from the baggage carousel in the airport where you land. But logistics experts know: behind the scenes, the airlines must fulfil a wide range of tasks in order that the whole baggage handling works. In order to put a secure and reliable baggage handling system in place, the 10-digit licence plate number (LPN) is still being used, which is printed in the form of a 1D barcode on the baggage banderols. These are read by different barcode readers throughout the airport and the baggage is then assigned to the respective plane.

Even if the proportion of incorrectly assigned baggage was reduced by an unprecedented 70% in the period from 2007 - 2016, baggage lost in transport today still represents an enormous cost burden for the airlines.

Baggage lost during transport costs airlines 2.1 billion US dollars annually

According to the "SITA Baggage Report 2017", for every 1,000 passengers, exactly 5.73 pieces of baggage were lost. This corresponded to 26 million pieces of baggage being reported missing in airports throughout. 95% of this baggage was located once again within 48 hours and returned to its owners with a delay, only 5% were regarded as having been completely lost. The effected airlines were required to spend 2.1 billion US dollars to reunite passengers with their lost baggage or to pay compensation for baggage that could no longer be found, and for those passengers effected, a night without their personal toiletries and fresh underwear isn't really something that they will remember fondly.

IATA Resolution 753 improves the baggage tracking

Since June 2018, the IATA Resolution 753 has been in effect. The "International Air

Transport Association” anchored in the resolution that, similar to parcel services, airlines must also track the baggage four-fold in order to know where each piece of baggage is located at each stage of its transport. This allows errors to be detected early and the passengers also know where their suitcase is in at any given time thanks to the real-time data.

RFID as a key technology for more speed and greater accuracy

The RFID Technology (Radio Frequency Identification) is a fundamentally important piece of technology for implementing the IATA Resolution 753 because it offers significant advantages compared to barcodes. They can identify and assign the transponders integrated into the baggage tags from large distances. Compared to barcodes, the RFID also offers large potentials in terms of speed, accuracy and memory sizes.

And finally, additional information can be added to the RFID tag at different stations, while when only barcodes are used the entire baggage banderol would have to be replaced in such a case. If, for example, a passenger misses their connecting flight, the airline can send the updated data to the specific piece of baggage and redirect it.

The mobile RFID solution for airlines is the fastest and most cost-effective way to progress from barcodes to RFID

The introduction of a new technology usually entails enormous investment costs: IT structures need to be adapted, existing equipment needs to be replaced - a large amount of tasks that the majority of airlines have been afraid to implement up to now.

With its hybrid, mobile devices from its mobility product line PANMOBIL, FEIG ELECTRONIC offers a globally approved and already actively used mobile solution, which will allow the introduction of RFID for baggage handling to be implemented as easily as possible. And all this without investments being required for the purchase and approval of RFID-capable printers at check-in.

Initially the baggage banderols will continue to be printed using the printers already in place. Subsequently, the banderol is held under the barcode/RFID scanner “ECCO+” located next to the printer, which then reads the barcode information within seconds and then transmits it to the RFID transponder that is also contained in the barcode in accordance with the IATA process.

The investment in this hybrid solution only requires a fraction of the costs that would otherwise be involved in the purchase of a completely new RFID-capable printers, which

means that already installed hardware can continue to be used and the switch-over can take place without any further additional system or software-related expenditure

Furthermore, the “ECCO+” from FEIG ELECTRONIC can be flexibly deployed and has already been in use for the past two years in 58 countries - which also include one of the biggest airlines in the United States.

In addition to the 1D laser scanner and the RFID UHF writing/reading unit, the device is also available with a 1D/2D imager. Its two large batteries ensure long operation without the need for intermediate charging. Four clearly structured, freely programmable buttons and exchangeable front cover for individual labelling make it unique and self-explanatory.

Advantages of the solution at a glance:

- The mobile device is installed at the check-in counter and allows the **barcode and RFID data** to be recorded
- **No adaptations** to the existing infrastructure **are required!**
- Already **existing equipment** will continue to be **used completely**
- Solution is **mobile** and **is available where and when it is needed**
- The **barcode** processing system can continue to be used **unchanged**
- The information contained on the baggage tags is **read-out and saved** on the RFID transponder in the same banderol
- **The coexistence** of barcodes and RFID allows the most modern technology to be used for baggage handling and for check-in
- **Parallel use** of barcodes and RFID technology makes it possible to use for all commonly-used baggage tags

Optimal supplement to the mobile solution: stationary RFID reader with reader ranges of up to 16 metres

The IATA-Resolution 753 requires the four-fold tracking of the individual pieces of baggage: at check-in, when being loaded into the aircraft at the departure airport, when being fed into the baggage-transfer traffic and when being unloaded from the aircraft at your destination. The RFID UHF writing/reading devices are particularly suitable for tracking during loading and transport. They achieve a reading range of up to 16 metres and so make it possible to set-up an entrance and exit gate using several UHF antennas in order to be able to identify a larger number of tagged baggage pieces at the same time.

FEIG ELECTRONIC has been a globally operating specialist for HF and UHF reading systems for the past 20 years and has a massive amount of experience when it comes to equipping logistics systems with the matching HF and UHF reading hardware.

Texts to story board:



The mobile hybrid scanner "ECCO+" (RFID & Barcode) of FEIGs PANMOBIL product line first reads the barcode information printed on the barcode banderol and then writes this same information onto the IATA-conform RFID transponder that has also been attached to the banderol.



The large battery with which the "ECCO+" is equipped ensures long operation without the need for intermediate charging. Four clearly structured, freely programmable buttons and exchangeable front cover for individual labelling make it unique.



The UHF technology in particular is suitable for identify moving objects thanks to its large reading range. Similar to the free-flow toll system in road traffic, the baggage pieces can be loaded automatically onto the conveyor belt or onto the baggage trolley and be securely tracked.

October 2018



About FEIG ELECTRONIC

FEIG ELECTRONIC GmbH located in Weilburg, Germany, is an innovative, owner-managed, medium-sized company with currently 350 employees.

The business division IDENTIFICATION offers stationary RFID hardware for the frequency bands LF (125 kHz), HF (13.56 MHz) and UHF (860-915 MHz) as well as mobile hybrid scanners (1D, 2D, HF and UHF).

In the PAYMENT division, payment terminals for open-loop and closed-loop payment systems are developed and manufactured.

The business divisions FEIG CONTROLLER and FEIG SENSORS sell control units for industrial gates and barrier systems as well as induction loop detectors for parking-, traffic counting- and traffic influence systems.

About the product line PANMOBIL

The formerly “advanced PANMOBIL solutions GmbH & Co. KG”, hardware and integration specialist for portable solutions, was acquired by FEIG ELECTRONIC GmbH on March 1st 2018 to expand FEIG’s product portfolio by mobile hybrid scanners.

The brand “PANMOBIL” will continue to be used as the name for the product line „Portable Solutions“ within the IDENTIFICATION business division of FEIG, that also offers RFID hardware components for LF, HF and UHF.

For further information please look at www.feig.de/en/panmobil