



BAGGAGE HANDLING SOLUTIONS

Airlines and airports recognize the passengers' desire for more efficient and safer baggage services, with no mishandling or losses and with the ability to handle bags with high friction surfaces (e.g. wrapped in the protective plastic film or with rubber parts), with irregular shapes, with sticking out wheels and laces or flabby bags. New regulations require also higher security standards for the passengers and their baggage: the IATA resolution 753 requires the full tracking of all bags during their entire trip.

Moreover, airport authorities are looking for solutions that can give more value to their investments, (e.g. longer lifetime and lower operation and maintenance costs of the systems).

With an experience of more than 25 years and a worldwide presence, Leonardo is one of the main players in the market of Baggage Handling Systems, and answers these market requests with a suite of products and solutions designed to define the standards of a new generation of baggage handling systems.

KEY FEATURES

Leonardo offers reliable, efficient and complete baggage handling solutions that include:

- MBHS® cross-belt sorter
- Conveyor suite including vertical and horizontal diverters and a complete range of conveying components
- Make-up and reclaim carousels
- ATR (Automatic Tag Reader), with optional integrated RFID or OCR
- Integration with HBS (Hold Baggage Screening)
- EBS (Early Baggage Storage) solutions and integration
- Control systems (PLC)
- SCADA
- SAC (Sort Allocation Controller)
- BRS (Baggage Reconciliation System)
- Integration with Airport IT

CROSS BELT SORTER

Leonardo provides an innovative reliable BHS solution based on the Multisorting Baggage Handling System (MBHS®), a cross-belt sorter which is the preferred technology for baggage processing, as it ensures optimum handling for all items, including objects that are fragile, have prominent wheels or high friction surfaces or are irregular in shape.

Advanced technologies, such as linear motors, inductive power distribution and WiFi data transmission, give this product an extremely high reliability, a sorting capacity up to 10,000 baggage per hour and an operational flexibility that allows significant savings in O&M cost. The intrinsic redundancy and the lower footprint of MBHS® also allow the design of more efficient BHS systems.

Reliability

Reliability and longer lifetime of the systems and the components have been the criteria for the design of MBHS® architecture.

MBHS® is a fully gearless mechanism. Linear motors are used for the movement of the continuous train of cells; inductive power distribution ensures the transmission of energy on-board. WiFi data transmission for command and control of the on-board devices, eliminates any need for specific hardware dedicated to the divert points, making it effortless to add or move destinations along the machine. Motor rollers are used to load and unload bags over the cells, without any leverage, gear or drive belt. The aluminum rails are

coated with stainless steel in order to minimize the friction with the rolling wheels, and maximizing their life. The control system allows modulating the speed of the sorters according to the required throughput.

These solutions reduce the friction and the wear out of the mechanical parts. The MBHS® cross belt technology guarantees the precision and smoothness of the handling: no bags can stay stuck due to hanging of straps or to the high adherence of surfaces. All these features give a remarkable decrease of the maintenance effort, eliminating de facto operational stops outside the preventive maintenance periods.

Operational and Maintenance Savings

The reduction of the maintenance effort, the absence of extra costs due to possible damages or mishandling of bags and the possibility to reduce the speed of the sorters in periods of low throughput demands, result in considerable savings in operational and maintenance costs. Independent studies quantify these savings at about 20%.

Flexibility

Due to the chosen technical solutions, MBHS® can be configured with chutes in curves. The unloading precision allows the use of narrower chutes, reducing the overall size of the sorting plant.

MBHS® is available in two versions, with cell pitches of 950 and 1200 mm; the size of the sorted object is 900x700x500 mm (objects longer than 900 mm can be loaded on two cells).



CONVEYORS, DIVERTERS AND OTHER COMPONENTS

The Leonardo catalogue includes a number of baggage handling products:

- Check-in belts with scales
- Conveyors
- Vertical and horizontal diverters
- Pushers

All these components of baggage handling systems have been designed with reliability and maintainability criteria defined for the entire products' line. Specific components of baggage handling systems from top market manufacturers can be integrated in our solutions depending on specific operational needs and constraints

MAKE-UP AND RECLAIM CAROUSELS

Overlapping flaps carousels, flat and inclined, are parts of the Leonardo suite of product dedicated to the baggage handling. These carousels can be configured with stainless steel or painted steel bodies and are suitable for make-up use, in departure sorting systems, or baggage reclaim in the arrival halls.

ATR (AUTOMATIC TAG READER), WITH OPTIONAL INTEGRATED RFID OR OCR

Leonardo solution includes advanced products for the automatic reading of the baggage tags using standard barcode readers, RFID readers and OCR (Optical Character Recognition). This solution is based upon primary market OEM components. In particular, OCR ATR can read the characters printed on the tag and identify the destination flight even if the barcode is not read or the BSM is not available. This allows a significant reduction of manual coding operations and mishandled bags.



INTEGRATION WITH HBS (HOLD BAGGAGE SCREENING)

The security of the air transportation being the top priority of all airport authorities and airlines, Leonardo paid a particular attention to the design of its solutions for the integration of the last generation baggage screening machines (Standard 3).

The design of the layouts of baggage handling systems always keeps into account both the requirements for the security related “waiting times” and the needs for a fast flow of the “clean” bags, in order to achieve the higher possible throughput with the maximum security level.

EBS (EARLY BAGGAGE STORAGE) SOLUTION AND INTEGRATION

EBS solutions are available within the Leonardo portfolio; alternatively products from market manufacturers can be integrated.

A special attention is dedicated during the design phase to the selection of the best solution to fulfill the requirements in terms of process flexibility and expandability.

CONTROL SYSTEMS (SAC AND SCADA)

The suite of Leonardo products is complemented by key control systems needed to provide full turnkey solutions:

- SCADA, for the command and control of all the single devices and the entire plant;
- SAC (Sorting Allocation Computer) for the management of the sorting and the complete tracking of bags



BRS (BAGGAGE RECONCILIATION SYSTEM)

BRS (Baggage Reconciliation System) is a part of the tracking process implemented in Leonardo systems (including ULD manifest preparation).

This product is ready for the implementation of the IATA Resolution 753, which requires all the parties involved in the baggage handling process to keep an accurate inventory of all the handled bags and trace all the acquisition and delivery phases among the parties themselves.

INTEGRATION WITH AIRPORT IT

All the control systems, and the Baggage Reconciliation system, are ready for the integration with the upper-level IT systems of airport information technology infrastructures. The standard set of messages defined in the IATA recommendations is implemented by the Leonardo IT components.

The SCADA is based on a top level commercial platform and is ready for the integration with

global airport monitoring systems through standard protocols.

A COMPREHENSIVE OFFERING

The innovative range of offered baggage handling products, combined with the expertise in airport processes, make Leonardo the ideal partner for airport operators. Leonardo provides both complete BHS turnkey solutions and single products suitable for the integration in wider solutions. Specialized baggage handling simulators are used to support customers in defining the most effective and best fitting solution for the specific airport.

Leonardo's wide experience in the field of the sorting systems includes a number of implementations of "open heart" projects, where the building and the integration of the supplied systems does not interfere with the operation of the existing ones.

Leonardo also has an offering in the Airport Security sector, with consolidated perimeter control systems, attendance logging and access control using biometric recognition techniques.



Leonardo is official member of :

