

# The world's most proven self-service bag drop solutions

**ICM** AIRPORT  
technics

The perfect integration of design, technology and process



auto bag drop  
ICM Airport Technics



Airports and airlines are looking at self-service bag drops to alleviate passenger congestion, lower operational costs and improve the passenger experience.

However, significant challenges exist to fully realise the benefits of these solutions. The solution must be proven, non-intimidating, intuitive for the infrequent flyer as well as completely safe and secure and able to operate without agent assistance.

With over **40 million** transactions processed by over **500 units** installed across multiple terminals globally, ICM's Auto Bag Drop (ABD) solution completely addresses these challenges with a passenger-centric superior design, advanced technology that is uncompromising on safety and security, and an efficient process that enables class leading baggage and passenger throughput.

# Superior design



## Easier side loading

With a transverse loading system\*, passengers can load their bag from the side with a side-guard cut-out to ease the lifting process. As the belt is flat, luggage will not roll off.

The open-sided design facilitates a more ergonomic process by reducing body strain as well as providing an intuitive non-intimidating look for passengers to drop their bags.

Passengers are also able to easily reach their bag if the bag tag needs adjusting or if they need to retrieve their luggage.

Side loading enables ease of use by passengers with disabilities.\*\*

\* Patents pending

\*\* Disability Discrimination Act (DDA) and Passenger with Reduced Mobility (PRM) compliant



## More passenger space

The design allows space traditionally taken up by check-in desks to be available for passengers, providing more room to manoeuvre luggage, trolleys and wheelchairs in comfort.

The design also shields the passenger from cross traffic and eliminates congestion in front of the ABDs.

The space between the units can also be used to accommodate baggage tubs, which are easily accessible to passengers.

The end result is improved passenger experience along with an increase in passenger uptake.



## Easy agent visibility

The open design allows a Customer Service Agent (CSA) to have easy visibility across multiple units. Likewise, CSA's have better visibility of passengers interacting with the console.

Status indicators also appear on the Wayfinding screens indicating when CSA assistance is needed or the units require servicing.

The units are designed to minimise the floor space footprint and can be installed in flexible layouts to accommodate various installation configurations, including island, walk through, and back wall installations.

The end result is that one CSA can easily monitor a bank of ABDs, thereby dramatically reducing the long-term operational resource costs.



## Designed to last

With outstanding durability and aesthetics, all ABD components are industrial strength and designed to last\*. Ease of cleaning, maintenance, and repair are facilitated by the side roll-out conveyors. This reduces down-time while increasing product life-span, resulting in low cost of ownership.

The ABD outer shell made of sheet metal (Series 5) or Corian® solid surface (Series 7) delivers high performance and a long product life cycle.\*\*

The high-grade stainless steel kick plates protect the unit from baggage trolleys and maintain the aesthetics of the ABD through its life cycle.

Multiple open surface areas and screen displays provide branding opportunities for airports and airlines.

\* ASIAD (Aviation Security In Airport Development) Blast-Proof Compliant

\*\* Optional outer shell colours are available to suit airport or airline décor





 **Bag Drop**

Bag Drop

# Advanced technology



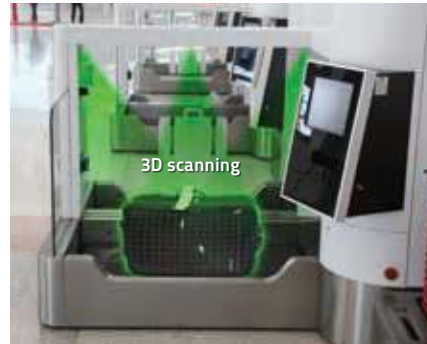
## Fast processing on first belt

As the bag is fully processed on the first belt, transaction time is not compromised by having to transfer the bag onto another conveyor or close a door over the bag for it to be weighed, scanned, and activated.

This results in faster transaction times. The passenger is also able to respond quickly if prompted to adjust the bag tag. This eliminates the need to reverse bags because they were not processed successfully on a second-stage processing belt.

Once the bag starts moving, the passenger can proceed to security screening with assurance that his or her bag has been processed successfully.

With the customer feeling in control, the whole bag drop experience is improved.



## Automatic conveyability check

Advanced 3D scanners alert customers of irregular items - bags with trailing straps, strollers, undersized bags - reducing the number of non-conveyable items entering the Baggage Handling System (BHS).

This prevents BHS outages and reduces additional manual bag handling.

Bags are prevented from being placed in an upright orientation to reduce damage and injury risk resulting from toppling bags.

With access to full bag imaging\*, no-show bags can be found and off-loaded faster to reduce flight delays. Damaged luggage claims can be more easily verified.

\* A full colour bag image/video database can be provided.



## Safe and secure intrusion detection

Using patent pending technology, anti-intrusion systems prevent injury to passengers and maintain the integrity of the weighing process.

The ABD creates a Dynamic Virtual Box around the bag. During processing, any foreign object (e.g. passenger, handbag, etc.) entering this virtual box will interrupt the process immediately. Moving conveyors are stopped and a message displayed on the monitor. This safety measure ensures children and adults are safe from moving parts.

It also prevents bag weight tampering therefore ensuring the accuracy of baggage weights ensuring excess baggage fees are accurately applied.

The dimensions of the Dynamic Virtual Box are automatically adjusted to suit the size and shape of the baggage item. This reduces the occurrence of accidental intrusions into the ABD processing area.



## High-security light curtains

Security is maintained by a series of light curtains used to detect intrusion by persons or objects entering the conveyor system.

Alarms are triggered and conveyors are immediately halted if a passenger tries to retrieve an "accepted bag" that is waiting to be injected onto the collector line or if a person attempts to walk through or to throw an object through the ABD tunnel.

This prevents any unexpected intrusions into the baggage handling system, ensuring uncompromised security and safety.

With the option of a roller door at the back of the ABD tunnel, after-hours security is maintained.



# Efficient process



## Flexible 1- or 2-step process

Complete flexibility is provided to support either a 1-step process, where bag tags are printed at the ABD, or a 2-step process, where bag tags are printed at a kiosk beforehand.

The 2-step check-in process optimises the use of floor space in the airport departures terminal, resulting in significant savings in both expenditure and footprint.

With more than a 300% increase in capacity possible, space becomes available to attract new airlines or for other revenue sources.

The 2-step process results in improved flexibility and efficiency in handling fluctuating passenger flows, more predictable service levels, and better terminal layout to take advantage of future trends.



## Fast and intuitive process

Passengers are guided through a simple, intuitive graphical user interface that is easily configurable for specific airline and airport process and branding requirements.

After the passenger is identified – biometric verification available – each bag is automatically checked for weight, dimensions, volume, shape and conveyability and the presence of a matching barcoded or RFID bag tag.

The bag is processed in a matter of seconds, compared to an average of 3.5 minutes at a traditional check-in counter. Less time in queues allows passengers more leisure time, resulting in increased airport revenue potential.



## Real-time process monitoring

The real-time dashboard provides information on the process and operational performance, enabling proactive management.

The powerful reporting and analytics engine uses metrics logged in the Bag Drop Server database to generate various graphical or tabular reports.

These reports are invaluable for monitoring the operation of the ABDs, for management reporting and for system improvements.

Performance reports can be automatically sent out to various stakeholders or accessed over secure web portals.

A comprehensive set of built-in reports is provided, or additional reports can be compiled using the built-in report generator for powerful data visualisation capabilities.



## Easily deployed

Making fast travel a reality, the solution spans from the Baggage Handling System (BHS) to the Departure Control System (DCS) interface, incorporating an industry standard approach at every level.

With an IATA Common Use Self-Service (CUSS) compliant platform, airlines are able to integrate their chosen CUSS-compliant airline application.

The modularity of the solution allows for a completely tailored approach to integrate into existing airport systems.

The design also allows integration to multiple Departure Control Systems (DCS) with minimal host changes. This approach also allows specific local based workflows to supplement the DCS-based rules.

# Comprehensive Support



## Lifecycle Support Services

ICM has an extensive service portfolio specially catered to support self-service bag drop & baggage handling systems throughout their working life. Specifically the support services cover:

- Full Service Contracts offering availability-based responsibility encompassing on-site support, remote support, comprehensive incident reporting, software upgrades, spare parts provision, documentation and training.
- Tailored Support Solutions to meet individual clients' needs.

Field data and site learnings are constantly used to refine our systems – enabling upgrades that are responsive to operational change and new technical capabilities. This ensures a long product life and maximises Return on Investment.



## ARMS

### (Active Remote Monitoring Support)

This service provides remote monitoring and comprehensive performance and usage reporting for Auto Bag Drop (ABD) and Baggage Handling System (BHS) installations.

It uses advanced Supervisory Control and Data Acquisition (SCADA) hardware and software to provide real-time visibility of system availability and performance.

This allows proactive management of support issues and maximises availability of operational units. The system can be fully integrated into existing client support systems.

The service is available for both domestic and international installations worldwide.



## LEGS

### (Local Engineering Ground Support)

Equipped with a thorough understanding of ICM's solutions, our experienced Support Engineers provide on-site support coverage for Auto Bag Drop and Baggage Handling Systems.

This specialised service caters for fault resolution and part replacement or can be offered as a complete Operational & Maintenance full service contract.

Preventative and Corrective Maintenance tasks are performed as specified and required. Spare parts stock management, refresher training courses and Occupational Health and Safety compliance are all taken care of by the professional ICM team.



## Professional services

ICM's professional services assist airports and airlines throughout the entire deployment lifecycle - from consultation and planning through to project management, installation, support and product enhancements.

We have unparalleled experience in facilitating a smooth and successful process transition for airports, airlines and ground handlers moving to a self-service bag drop concept.

Our dedicated and experienced Project Management team will manage each new installation, regardless of size.

ICM's subject matter experts will work with your processes and customer experience people to ensure all options are considered when introducing our self-service bag drop solution into your operations.

# ABD family

## Retrofit Solutions



## Replacement/Greenfield Solutions





# Feature list

Features	Series 1	Series 3	Series 4	Series 7	Hybrid	Comments
<b>General</b>						
Single Unit Available	✓	✓	✓	✓	✓	Left and right handed versions available.
Double Unit Available	✓	✓	✓	✓	✓	Double configuration Series 7 replaces two traditional check-in desks.
Recommended Pitch	E	E	E	4.0m	4.3m	Centre-to-centre distance between two ABD doubles. The minimum pitch for the Standard Series 7 unit is 3.4m.
Supports Agent-Assisted Processing	✓	✓	✓	O	✓	Retrofit (Series 1, 3, 4) units natively support traditional agent-assisted processing. Hybrid unit is designed for the integration of a full set of CUTE equipment. This allows rapid switching between Agent-Assisted and Self-Service operational modes.
<b>Console</b>						
Receipt Printer	✓	✓	✓	✓	✓	Baggage receipt printing per transaction (multiple bags on the same receipt). Facilitates excess baggage charging by printing excess payment advice.
Heavy Tag Printer	O	O	O	✓	✓	Allows bags over 23kg (OH&S limit) to be dropped off. Barcoded heavy tag stock enforces the application of the heavy tag.
Paper Bag Tag printer	O	O	O	O	O	Supports 1- and 2-step processes.
Passport Scanner	O	O	O	O	O	Supports conventional and e-Passport RFID reading. Visible, IR and UV scanning enables advanced forgery rejection. 1D/2D barcode support allows for enlarged boarding pass scan area.
Boarding Pass Readers	✓	✓	✓	✓	✓	Face-up/face-down reader layout is available and improves usability of all paper & device-based (e.g. cell-phone, 10" tablet) boarding pass formats.
RFID/NFC Boarding Pass Reader	✓	✓	✓	✓	✓	Future proofing - supports RFID/NFC. Allows flexibility for airlines wanting to use a "Permanent Boarding Pass" process for improved PAX experience. Contactless RFID staff override feature allows for easy exception and fault handling.
Hand-held Barcode Scanner	✓	✗	✗	✗	✗	PAX operated IATA bag tag scanning using a tethered, robust, hand-held scanner.
17" Capacitive Touch Screen	✓	✓	✓	✓	✓	Responsive and generously sized for ease of use.

✓ - Provided | ✗ - Not provided | E - Existing | O - Optional

\*Please note that these features can be changed at any time by ICM without notice.

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<b>Baggage Processing</b>						
Bag Processed on First Belt	N/A	✓	✓	✓	✓	Weighing, 3D baggage profiling (Series 3, 4, 7) and bag tag barcode reading intuitively occurs on the first belt.
Virtual Box Technology (Patents Pending)	✗	O	✓	✓	✓	Prevents intrusion onto the ABD conveyors whilst bag is being processed. Benefits include increased passenger safety, security and baggage weighing integrity.
Security “Airlock” Sensors	✗	✗	✓	✓	✓	Dual security sensors in the ABD tunnel provide for comprehensive detection of unwanted items (e.g. bags, people, animals) entering the Baggage Handling System.
Oscillating Bag Tag Barcode Readers	✗	2 or 3	3 or 4	3 or 4	3 or 4	Multiple oscillating barcode readers result in minimal blind spots and extremely high read rates. Advanced conveyor “jiggle” function allows for higher read rates and throughput by making slight adjustments to the scanner-to-tag relative positioning.
Variable Speed Drives for Conveyors	✗	✗	✓	✓	✓	VSDs smoothly control the movement of the bag by varying supply frequency.
Over-length Baggage Detection	E	✓	✓	✓	✓	Over-length baggage articles are rejected.
Upright Baggage Detection	✗	✓	✓	✓	✓	Less likely to cause damage to passenger’s bag. Facilitates smooth transition into downstream baggage system.
Multiple Baggage Detection	✗	✓	✓	✓	✓	Prevents unknown bags from being injected into the downstream Baggage Handling System.
Detection of Non-conveyable Bags	✗	✓	✓	✓	✓	Baggage acceptance/rejection rules and thresholds (e.g. straps, small bags, round bags, irregularly shaped etc.) can be configured on a site by site basis. Prevents damage and stoppages to downstream BHS and PAX’s bags.
Detection of Baggage Tubs (if used)	✗	✓	✓	✓	✓	ABD automatically informs PAX when a tub is required. Tubs are automatically detected without the need of barcodes or RFID labelling and the net weight adjusted.
UHF RFID Bag Tag reader	O	O	O	O	O	Supports UHF RFID (ISO 180006) disposable or permanent baggage tags.
Over Belt CCTV	✗	O	✓	✓	✓	Facilitates analysis of passenger behaviour – especially useful during trials. Footage could be used for training & process/ system improvements.
Roller Shutter Door at Back of ABD Tunnel	✗	✗	✗	O	O	Closes based on “End-of-Day” and other non-operational states. Alternatively, a Fast Door can be supplied which opens every time a baggage article is injected into the BHS.
Fast Processing Time	✓	✓	✓	✓	✓	<30 seconds for non-biometric, non-passport scanning, fully automated 2-step bag tagging process.

✓ - Provided | ✗ - Not provided | E - Existing | O - Optional

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<b>Form Factor</b>						
Open, Non-intimidating Form	E	E	✓	✓	✓	The PAX can view bag while being processed and thus feels in control. The PAX is able to adjust the bag tag, if required, without waiting for a door to open and close again.
DDA and PRM Compliant	E	E	✓	✓	✓	User access points on the console need to be wheelchair accessible. Side loading is required for People with Reduced Mobility (PRM) compliance.
Flat Scale Conveyor	E	E	✓	✓	✓	Eliminates risk of damage or injury resulting from toppling bags on a slanted conveyor.
Side Loading of Bags (Patents Pending)	✗	✗	✓	✓	✓	Low height side loading provides an ergonomic experience when compared to front loading solutions.
Corian® Shell material	✗	✗	O	✓	✓	Industrial grade, aesthetic durable material that allows for easy repair through filling and buffing. Airport/Airline differentiation is possible through a variety of colour choices.
Stainless-Steel Skirting	E	E	✓	✓	✓	Aesthetic, long lasting and robust.
Provides for Passenger Comfort Zone	✗	✗	✓	✓	✓	Side loading design shields the passenger from cross traffic. Back area can be used for tub storage for easy passenger/agent access.
<b>Integration</b>						
IATA CUSS Compliant Software	✓	✓	✓	✓	✓	Multiple certified (e.g. ICM, Amadeus, Vedaleon) airline applications available.
Biometrics	O	O	O	O	O	Supports wide range of ICM-supplied or 3rd party biometrics technologies.
Excess Baggage Payment Support	✓	✓	✓	✓	✓	Multiple options exist including the use of an optional payment terminal, or the ability to print a payment advice and redirect PAX to a centralised payment counter.
Wayfinder Interface	O	O	O	O	O	Wayfinding display situated above each ABD with ABD status displayed on screen.
BHS Integration via Standard Interface	✓	✓	✓	✓	✓	Complete baggage transfer logic, E-Stop and intrusion integration into any BHS system.
<b>Airline Application</b>						
CUSS Compliant	✓	✓	✓	✓	✓	Centrally hosted (local or remote) web application supports a thin client architecture.
Customisable	✓	✓	✓	✓	✓	Options exist for screen design, workflow sequence, animations, branding, etc.
Multi-lingual	✓	✓	✓	✓	✓	Natively supports the use of multiple languages.
Local Process Rules	✓	✓	✓	✓	✓	Flight table, bag weight excess, and other local rules can be easily configured by an authorised user.

✓ - Provided | ✗ - Not provided | E - Existing | O - Optional

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