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ENHANCING PASSENGER FACILITATION THROUGH OFF-AIRPORT BAGGAGE OPERATIONS AND ELECTRONIC BAG TAG

(Presented by the International Air Transport Association (IATA))

EXECUTIVE SUMMARY

This information paper presents recent industry developments in off-airport baggage operations and the use of Electronic Bag Tags (EBTs), which aim to enhance passenger facilitation, operational efficiency and sustainability. These innovations support the optimization of airport infrastructure, improve the passenger experience and enable intermodal connectivity. The paper highlights the benefits for airports, airlines and States, and invites States to evaluate and support the implementation of these solutions through appropriate regulatory frameworks.

<i>Strategic Goals:</i>	This information paper relates to the Strategic Goals <i>Aviation Delivers Seamless, Accessible and Reliable Mobility for All, Aviation is Environmentally Sustainable, and The Economic Development of Air Transport Assures the Delivery of Economic Prosperity and Societal Well-Being for All.</i>
<i>Financial implications:</i>	There are no direct financial implications for the International Civil Aviation Organization (ICAO). However, the implementation of off-airport baggage operations and EBTs may result in cost savings and operational efficiencies for States, airports and airlines.
<i>References:</i>	IATA Guidance on Off-Airport Baggage Handling Annex 17 — <i>Aviation Security</i> Annex 9 — <i>Facilitation</i>

1. INTRODUCTION

1.1 This paper provides the Council with information on recent industry initiatives and emerging trends in passenger facilitation, with a particular focus on improved baggage operations, including off-airport solutions and innovations such as electronic bag tags. These innovations aim to enhance efficiency and passenger experience, requiring State endorsement and collaboration for successful implementation.

2. OFF-AIRPORT OPERATIONS

2.1 The International Air Transport Association (IATA) Net Zero Roadmaps¹ provide a view of how aviation could reach net zero CO₂ emissions by 2050. Among the different levers of decarbonization, airline operators' investment in and use of Sustainable Aviation Fuels (SAF) will make the largest contribution to lowering aviation's environmental impact and reaching net zero by 2050.

2.2 With the rapid growth in passenger traffic, infrastructure such as airport real estate, baggage handling systems and check-in facilities may not expand at the same pace. However, existing processes can be enhanced, or new ones introduced, to optimize and efficiently use current infrastructure to support traffic growth.

2.3 Failure to adapt can place additional pressure on airport facilities, especially in public spaces, with increased demand for check-in desks, kiosks, self-bag drops (SBDs) and queuing areas. This can negatively impact the passenger experience and potentially compromise safety and security.

2.4 Off-airport baggage operations aim to introduce new processes that create a more efficient baggage handling system by shifting some baggage acceptance and handling activities away from costly airport infrastructure to more manageable, lower-cost locations. This approach allows airports to boost passenger throughput, improve the passenger experience, achieve more predictable operations, handle baggage more efficiently and enhance overall safety and security.

2.5 Off-airport sites offer greater flexibility in terms of facilities, as they can be established at existing locations that meet the necessary conditions. Check-in desks, kiosks and SBDs at these off-airport sites not only help alleviate congestion within the passenger terminal but also reduce the need for such equipment inside the terminal.

2.6 From a baggage handling perspective, accepting check-in baggage earlier at off-airport locations allows for its timely transport to the airport and controlled entry into the Baggage Handling System (BHS), avoiding pressure on system capacity. This approach helps manage peak loads and enhances the overall handling capacity of the BHS. Additionally, implementing Early Baggage Storage (EBS) at off-airport sites, where costs may be lower, can further optimize operations.

3. AIRPORT BENEFITS OF OFF-AIRPORT BAGGAGE OPERATIONS

3.1 Resource Optimization: Streamlining airport operations and reducing the need for extensive on-site infrastructure and personnel.

¹ <https://www.iata.org/en/programs/sustainability/roadmaps/>

3.2 More Flexibility on Storage: Using off-airport facilities for baggage storage provides greater flexibility and cost savings. Airports benefit from using cheaper real estate for storage off-airport, such as outsourced off-airport facilities, temporary facilities, self-service storage facilities or even mobile storage in trucks as they move between off-airport facilities and the airport.

3.3 Speedy Processing, Less Queuing: Expediting the check-in process and reducing passenger queuing time, ultimately increasing airport throughput.

3.4 Sustainability: Supporting operational and environmental sustainability as passengers with only carry-on baggage tend to use shared transportation to come to the airport rather than using private cars or taxis, thereby reducing their environmental footprint.

3.5 Reduced Congestion on Landside: More passengers use shared transport to and from the airport, thereby reducing congestion.

3.6 Enhanced Security: Reduced queuing at airport check-in and security points, particularly at airports where screening before check-in exists, enhances overall security and allows passengers more time at retail facilities. Passengers with more free time can enjoy airport retail and duty-free shopping, enhancing their travel experience.

4. AIRLINE BENEFITS

4.1 Off-airport baggage operations can offer significant benefits to airlines, like those experienced by airports. Managing peak-time baggage traffic is critical to ensuring on-time flight departures, a key performance indicator for airlines. Early baggage acceptance at off-airport locations provides more time for handling and processing, reducing last-minute tasks at the check-in counters and speeding up passenger processing. This service can greatly ease operational pressures during peak times, cutting down the need for additional staff and equipment.

4.2 With the expansion of off-airport baggage processing, airlines can increase their service flexibility by providing customized baggage handling options for passengers with unique requirements, such as those heading to sporting events, ski resorts, or vacation spots. Some key benefits of off-airport baggage operations for airlines include:

- a) Removes extra pressure from resources during peak times for departure operations: Off-airport operations alleviate operational pressure on airlines during peak departure times. By handling baggage off-site, the volume of bags processed at the airport is significantly reduced, easing the strain on check-in counters and baggage handling systems during busy periods. Reducing the baggage processing burden during peak times helps maintain smooth operations, minimizing delays, and ensuring flights remain on schedule.
- b) Potential optimization of manpower and infrastructure: Airlines can better optimize their use of manpower and infrastructure with off-airport baggage services. With fewer baggage-related tasks at the airport, airlines can reallocate staff to other critical areas, enhancing overall efficiency and reducing the need for a large workforce dedicated solely to baggage handling. Less reliance on extensive on-site baggage handling facilities can lead to significant cost savings. Airlines can invest in smaller, more efficient infrastructure or repurpose existing space for other uses.

- c) Better baggage disruption management: Off-airport baggage services offer a proactive approach to managing passenger baggage during flight disruptions. Disrupted baggage can be delivered directly to passengers' destinations, avoiding the need for passengers to wait at baggage carousels.
- d) Enhance the passenger experience: Off-airport baggage operations can significantly enhance the overall passenger experience. Passengers can drop off their bags at convenient locations before arriving at the airport, bypassing long lines and reducing the stress associated with traditional check-in processes. If baggage is handled off-site, passengers spend less time on baggage-related procedures, giving them more time to relax, shop or dine at the airport. Additionally, a streamlined and hassle-free baggage process contributes to a more enjoyable travel experience, which can lead to increased customer satisfaction, loyalty and positive reviews for the airline.

4.3 Another aspect to consider is how off-airport check-in can contribute to cost reduction for both airlines and airports:

- a) Facility Cost: If the off-airport check-in site is within a location owned by a party other than the airport or the airline, and if that location can benefit from more users attracted by the check-in facility, the cost can be borne by or at least shared with the facility owner (for example train stations, shopping centres). For airlines, the rent outside the airport is normally cheaper than within the airport. For the airport, the extra space and optimized facilities within the airport can be turned into other revenue-generating opportunities.
- b) Equipment Cost: Off-airport check-in, if expanded, will reduce the need for costly equipment such as common-use equipment at the airport as more baggage is checked in at off-airport locations. This ultimately reduces the need to own such equipment. This also applies to manpower costs if any.
- c) Transportation Cost: This represents an additional cost since, under the standard airport check-in process, passengers usually bring their baggage directly to the airport. However, if passengers drop off their baggage at an off-airport location beforehand, they can travel light to the airport. This eliminates the need for private transportation often required when carrying checked-in baggage, allowing passengers to opt for shared or public transportation instead.

5. **ELECTRONIC BAGGAGE TAG (EBT)**

5.1 Baggage handling presents several challenges due to the process of taking a bag from a passenger and returning it at the end of their journey. Typically, passengers drop off their bags at a baggage desk where a label is attached and a receipt is given. The bag then moves through the airline ecosystem until it is returned to the passenger. If the bag is not returned, the passenger uses the receipt to start the tracing process.

5.2 EBTs offer several advantages:

- a) **Improvements in Passenger Services:** Passengers can pre-program their bag tag while checking in, which can be done many hours before they go to the airport. The EBT displays journey details, providing reassurance to passengers about their routing.
- b) **Speed of Baggage Acceptance:** Passengers with pre-tagged bags are processed faster than those who need a tag issued. This increased processing speed can enhance passenger experience or reduce check-in desk occupancy.
- c) **Enabling Off-Airport Operations and Intermodal Connectivity:** EBTs support the expansion of baggage handling beyond the airport environment by enabling secure and verifiable tagging at remote locations. This facilitates off-airport check-in, door-to-door baggage delivery and seamless transfers between different modes of transport—such as air-to-rail or air-to-cruise—enhancing the overall travel experience and operational flexibility across the journey chain.
- d) **Environmental Sustainability:** EBTs contribute to a more sustainable aviation ecosystem by reducing reliance on single-use paper tags. Their reusability and digital functionality help minimize waste and support broader environmental goals, aligning with industry efforts to lower the carbon footprint of ground operations and promote greener travel practices.

6. STATE RESPONSIBILITIES IN ENSURING SECURE AND COMPLIANT OFF-AIRPORT BAGGAGE HANDLING

6.1 Baggage off-airport operations and door-to-door (D2D) delivery services offer significant benefits to passengers, including enhanced convenience, reduced airport congestion and improved passenger flow. Ongoing collaboration between industry stakeholders and regulatory bodies is necessary.

6.2 Regulatory support is crucial for implementing these solutions. To facilitate secure and effective implementation of these services, States are invited to:

- a) create a supportive regulatory environment is essential. Steps for States to facilitate the adoption of electronic bag tags and off-airport solutions are outlined;
- b) evaluate the feasibility and benefits of off-airport baggage handling and D2D delivery within their national context;
- c) establish or update regulatory frameworks to support these services, ensuring alignment with aviation security and customs requirements;
- d) define clear roles and responsibilities for all stakeholders, including airlines, airports and third-party service providers;
- e) implement oversight mechanisms to ensure compliance with security, safety and customs regulations; and
- f) support the adoption and use of EBT as opposed to traditional paper tag.

7. **BENEFITS TO STATES**

7.1 States play a critical role in enabling the successful implementation of off-airport baggage operations and EBTs. These innovations offer several strategic advantages:

- a) **Infrastructure Efficiency:** By reducing reliance on airport terminal space, States can better manage infrastructure investments and optimize land use.
- b) **Security and Regulatory Oversight:** States can maintain robust oversight through updated frameworks that ensure compliance with national and international standards.
- c) **Economic Growth:** Off-airport services can stimulate local economies, particularly in urban centers, by creating new business opportunities and jobs.
- d) **Environmental Stewardship:** Supporting EBTs and remote check-in aligns with national sustainability goals and contributes to reduced emissions from airport operations.

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