IDEMIA Public Security: Industry demand for assured connectivity in aviation operations.

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Baggage Biometric Search and Recovery Solutions in Airports

The global aviation sector is evolving toward seamless, secure, and premium passenger experiences as volumes rise and operational tolerance for disruption falls. Baggage disruption remains one of the most visible service failures, it drives significant cost, workload, and brand damage, especially during peak travel and irregular operations, where rapid identification and recovery become mission critical.

Bag biometrics means using images of a bag as a unique identifier, similar in concept to using a face for a person. In practice, cameras capture high quality photos of each bag and software extracts distinguishing visual features (shape, colours, material patterns, tags, stickers, scuffs, straps, wheels, and other identifiers) to create a 'bag biometric' that can be searched later.

When large numbers of bags accumulate due to major delays, infrastructure outages, or large-scale disruption events, airports and airlines need to deploy this image capture and bag-biometric search capability anywhere, quickly, including temporary recovery areas, major international hubs, and smaller airports with limited local IT support. This relies on capturing images using specialised baggage camera units (arches) or authorised mobile phones, securely uploading those images to a cloud service to be biometrically searched and matched, returning results fast enough to drive real operational action.

During disruption, public networks are often congested, so this requires predictable uplink performance and low latency.

To deliver the required speed and resilience, IDEMIA Public Security requests access to the QoD/QoS API across MNO networks globally, enabling baggage image capture and search services to perform with fibre like quality over 5G public networks, functioning even in a state of network overload.

Why – Purpose

Baggage disruption remains one of the most visible, costly, and operationally painful failure modes in aviation. IDEMIA Public Security's ALIX™ platform is designed to accelerate baggage recovery by enabling rapid, image driven identification and search across operational touchpoints. To make that capability resilient at global scale IDEMIA Public Security requests access to the QoD/QoS API across MNO networks.

QoD & QoS 5G is critical to ALIX™ for four core reasons:

1- Deploy anywhere instantly
A portable search arch can be shipped globally and activated out of the box using a pre-configured high priority eSIM. This removes dependency on local fixed network infrastructure and ensures predictable performance.

2- Turn any smartphone into a recovery tool
Authorised staff can capture images using mobile devices and perform rapid search with assured performance, even in congested environments.

3- Operate during extreme disruption
During major events such as volcanic ash, infrastructure failure, or severe weather, baggage can accumulate rapidly. 5G provides deployable recovery capability where fixed networks may be unavailable or overloaded.

4- Fixed network backup
5G provides a resilient backup layer within major hubs, supporting recovery operations if primary infrastructure fails. In secondary hubs, 5G can fully replace traditional fixed networks.

Location & Timeline

From 2026 onwards, IDEMIA Public Security plans to initiate airline and airport deployments and proof of concepts across both hub and spoke operations. Priority markets include key European aviation hubs such as Spain, Germany, the United Kingdom, France, Switzerland, Portugal, Italy and Poland, together with the United States. Wider scaled deployment is expected from 2027.

Current Market State of Play

The aviation industry is carrying record volumes, and that amplifies the absolute scale of disruption even as rates improve. SITA reports 5.3 billion passengers in 2024, with global traffic up 8.2% year on year. International Air Transport Association's long term outlook projects global passenger journeys to exceed 12 billion by 2030.

Despite long term progress, mishandling remains material at global scale. SITA's most recent baggage report states 33.4 million mishandled bags in 2024, a mishandling rate of 6.3 per 1,000 passengers, and an estimated US$5 billion industry cost to resolve disruption. Critically, transfer mishandling is still the biggest contributor to delayed baggage, reported at 41% (down from 46% the prior year), which is why fast identification and recovery capability is most valuable in hub and connection contexts, especially during irregular operations.

Connectivity is often least reliable when disruption is at its worst, namely congestion, degraded airport infrastructure, and rapid scaling of temporary processes. Yet the operational imperative is speed, most mishandled bags are recovered within the first 48 hours, which underlines a simple operational reality, the faster you can capture reliable identifiers, transmit them, search, and act, the more disruption you prevent and the lower the cost to recover service.

Standards & Technology Origin

The requested QoD/QoS API is aligned with GSMA Open Gateway and CAMARA standards. By integrating this API with baggage image capture and search services, MNOs can:

- Dynamically allocate priority resources during baggage surges, peak bank connections, or large scale disruption events.
- Assure predictable uplink performance for high quality bag image capture from portable camera units and authorised mobile devices.
- Maintain low, consistent latency for interactive image search workflows, so operational teams can act in near real time even when networks are congested.

Roles

- **IDEMIA Public Security**: Deploy baggage image capture in airports alongside the enabling cloud search services, integrated with MNO exposed QoD/QoS APIs to ensure predictable performance during disruption and peak operations.
- **GSMA Fusion:** Support pilots and commercial rollout of standardised QoD/QoS APIs, facilitate collaboration between market participants (airports, airlines, solution providers) and regional or global MNOs to evidence demand, define requirements, and accelerate interoperable solutions.
- **MNOs**: Expose QoD/QoS APIs with standardised service level agreements (SLAs), ensuring consistent, predictable quality of service for time critical aviation operational workflows.

Opportunities for MNOs

- **New revenue streams:** Monetise QoD/QoS API consumption for aviation operational and passenger experience solutions, converting programmable network capability into a clear enterprise product line.
- **Reputational advantage**: Position as an innovator enabling next generation, disruption resilient airport operations and premium travel experiences.
- **Future expansion**: Reuse the same QoD/QoS API capability across other verticals that require assured performance, for example healthcare, emergency response, logistics, and live broadcasting.

Network Requirement Details

- Guaranteed bandwidth allocation during QoD sessions.
- Latency < 100ms end-to-end for image processing
- Packet loss < 0.1% during active QoD sessions.
- API accessibility via secure, standardised interface (GSMA Open Gateway spec).
- Roaming support for eSIM deployment
- Enterprise grade security

Call to Action for MNOs

We invite MNOs to collaborate with IDEMIA Public Security and GSMA to ensure QoD/QoS availability for global baggage recovery deployments, helping airports to lead globally in passenger experience and operational efficiency.

Other Details

- API implementation to comply with GSMA Open Gateway and CAMARA specifications.
- Integration support and operational testing provided by IDEMIA Public Security's engineering team.
- Data privacy compliance with local and international regulations (GDPR-equivalent where applicable).

About IDEMIA Public Security

In today's digitally-empowered society, citizens have come to expect secure, streamlined contactless journeys; public and private organizations demand the best and most seamless solutions available to better serve and protect their people and assets. In this world, IDEMIA Public Security opens the door to fairer, frictionless, secure access and identification in the physical and digital worlds.

ALIX™ (**A**ugmented **L**uggage **I**dentification e**X**perience), IDEMIA Public Security's solution empowered by artificial intelligence (AI) and Biometrics, helps digitalize and automate the luggage identification process by providing each bag with an augmented digital luggage tag.