IATA CARGO EXPERTS CONFERENCE

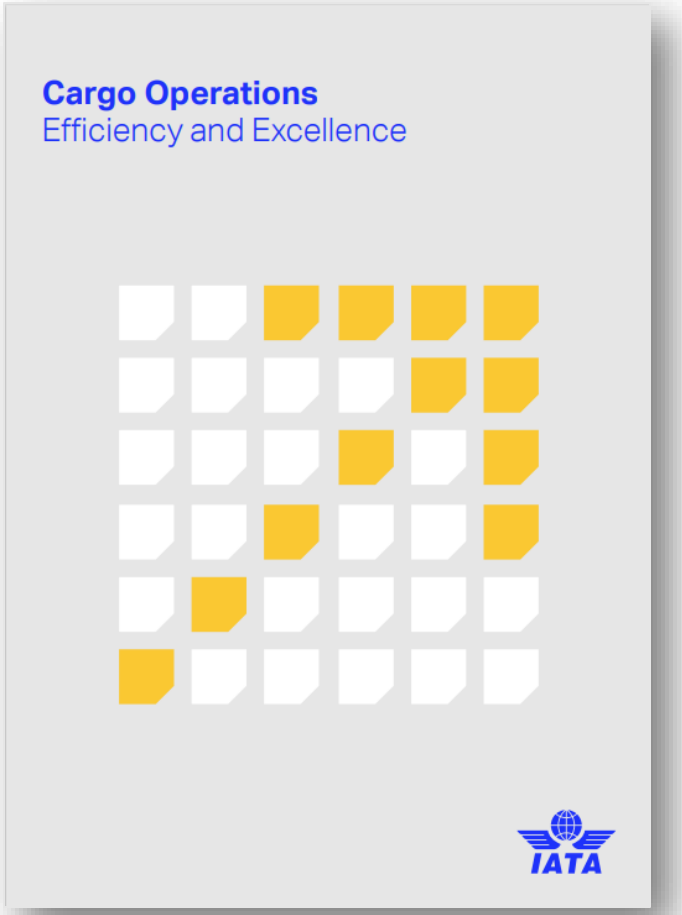
25th September 2025

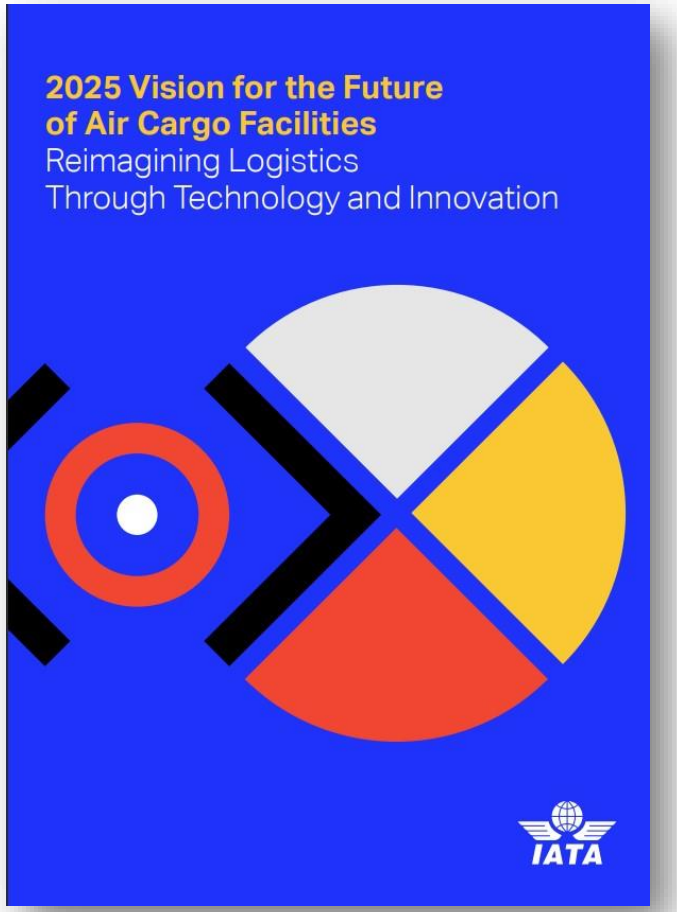
The Future of Air Cargo: Operational Excellence and Technology Trends

Matthew Tang – Senior Manager, E-Commerce & Cargo Operations

IATA

IATA Whitepapers





Who should read?

Everyone in the industry!

Regardless what your position in your organization is!

Everyone can make decisions in your role, every day, every hour, and every single minute. Your decision **DOES MATTER!**

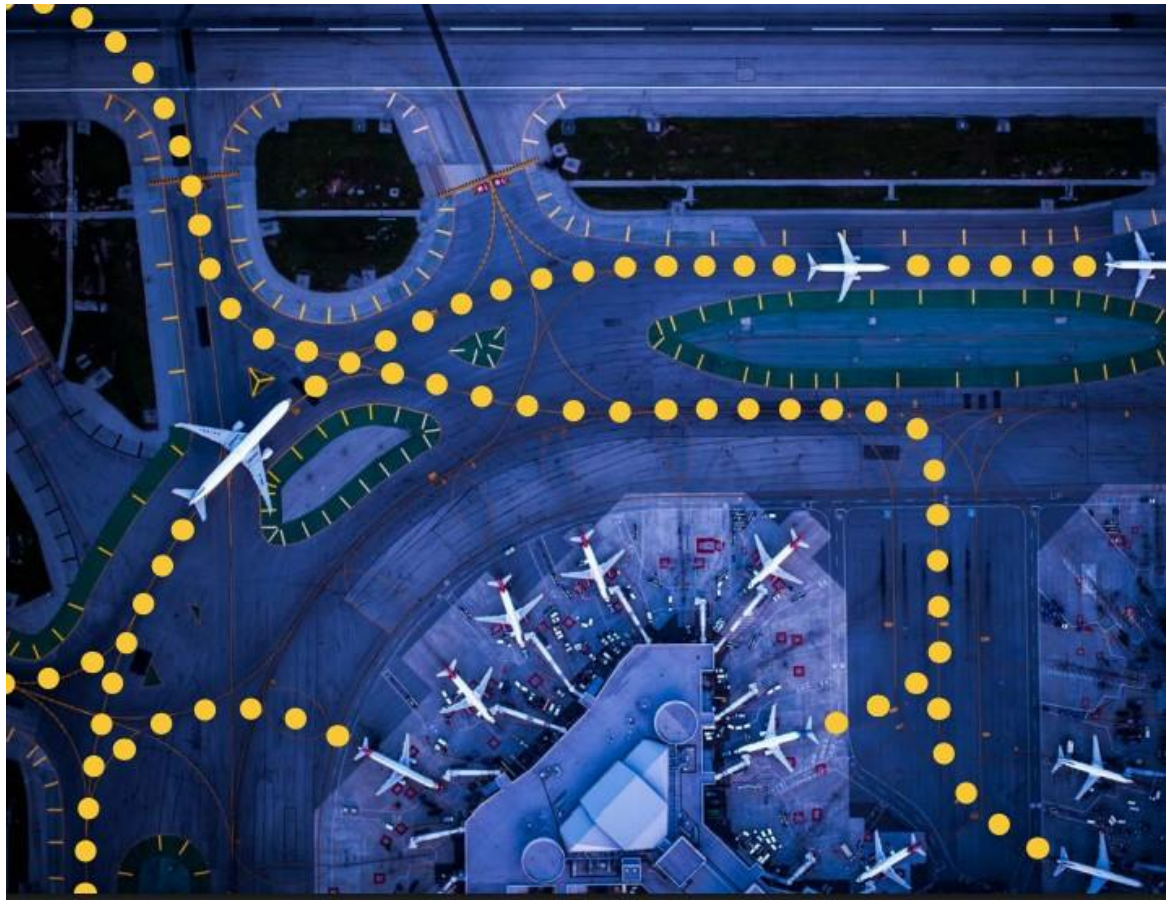
This is the essence of **“Cargo Operations”**

Efficiency & Excellence

From IATA's perspective,
Compliance is the cornerstone of
Operational Efficiency.

However, **Operational Efficiency** is only the beginning.

Efficiency & Excellence



A Step beyond maintaining
Operational Efficiency is achieving
Operational Excellence

Efficiency & Excellence

Excellence

Efficiency – IATA Standards

TALENTS

FACILITIES

EQUIPMENT

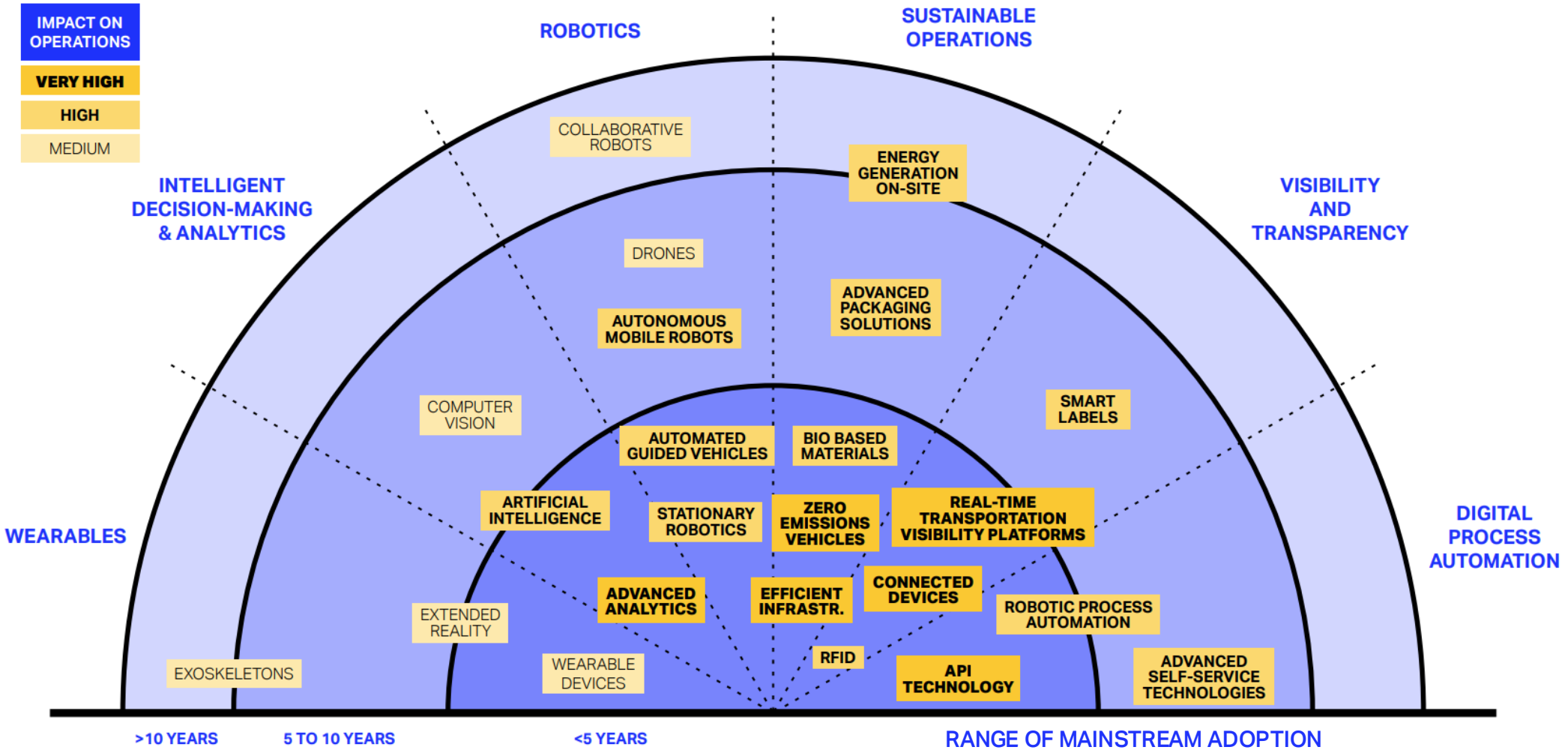
IT SYSTEM

PROCEDURES & PROCESS

Vision for the Facility of the Future

2025 Technology Trends

The Cargo Facility Technology Trend Radar



90

participants
February 2025

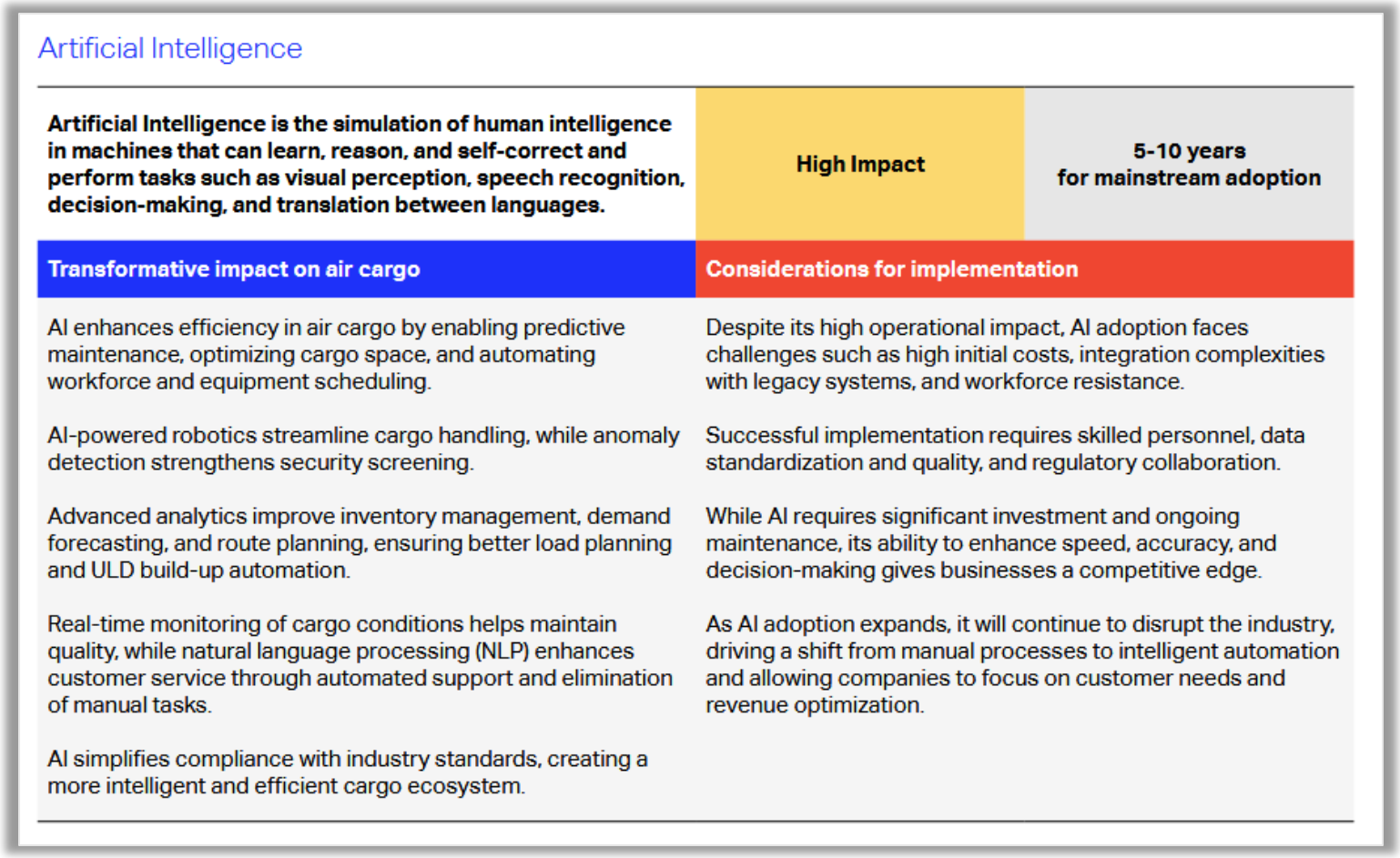
Impact in Operations
the expected operational effect

Range of Adoption
expected timeframe for widespread acceptance and use of a new technology

IATA

23 technology cards

- General description of the technology
- Impact level and range for mainstream adoption
- Transformative impact on air cargo operations
- Considerations for implementation
  - Interdependencies
  - Challenges
  - Requirements



Artificial Intelligence

Artificial Intelligence is the simulation of human intelligence in machines that can learn, reason, and self-correct and perform tasks such as visual perception, speech recognition, decision-making, and translation between languages.	**High Impact**	**5-10 years for mainstream adoption**
Transformative impact on air cargo	**Considerations for implementation**	
AI enhances efficiency in air cargo by enabling predictive maintenance, optimizing cargo space, and automating workforce and equipment scheduling.	Despite its high operational impact, AI adoption faces challenges such as high initial costs, integration complexities with legacy systems, and workforce resistance.	
AI-powered robotics streamline cargo handling, while anomaly detection strengthens security screening.	Successful implementation requires skilled personnel, data standardization and quality, and regulatory collaboration.	
Advanced analytics improve inventory management, demand forecasting, and route planning, ensuring better load planning and ULD build-up automation.	While AI requires significant investment and ongoing maintenance, its ability to enhance speed, accuracy, and decision-making gives businesses a competitive edge.	
Real-time monitoring of cargo conditions helps maintain quality, while natural language processing (NLP) enhances customer service through automated support and elimination of manual tasks.	As AI adoption expands, it will continue to disrupt the industry, driving a shift from manual processes to intelligent automation and allowing companies to focus on customer needs and revenue optimization.	
AI simplifies compliance with industry standards, creating a more intelligent and efficient cargo ecosystem.		

Efficiency & Excellence

IATA Standards	(À la carte menu)
Receive Shipments into the Carrier Domain	**Artificial Intelligence** • Predictive/Advanced Analytics Application on Cargo Build-up • Auto cargo build-up optimization & planning tools • Auto weight & dimension capturing • DG Auto Check • Vehicle Recognition Cameras • Real-time cargo build-up monitoring tools
Accept Shipments as Ready for Carriage	**Wearables** • Forklift with Extended Reality
Prepare Cargo for Transport	**Robotics** • Automated Guided Vehicle (AGV) for skid cargo movement • Autonomous Mobile Robots for inventory checks • Automated Storage Retrieval System • Autonomous Mobile Robots for inventory checks **Visibility & Transparency** • E-submission for export documents • ULD Tracking Devices • In-house Cargo Storage Device Tracking Mechanism • Cargo Screening Reservation **Digital Processes & Upgraded Facilities** • Truck Flow Management (e.g., Fast Lane, Reservation mechanism, Advanced Self-service technologies, Traffic Management System – Truck docks allocation) • Auto cargo image capturing • Auto Temperature Capture for Special Storage • Cool facility for DG shipment (except class 1 & 7) • Special storage for Lithium Battery (Section 1) shipment
Send Shipments to the Flight	**Robotics & Digital Processes** • Autonomous Electric Tractors (AETs) • Auto ULD Tag Printing
Distribute Information	**Digital Processes & Upgrade Facilities** • E-NOTOC • Centralized documentation Centre
	Digital Processes

Operational Excellence goes beyond standards.

Some organizations in the industry are effectively leveraging innovation to achieve and maintain **Operational Excellence**.

Efficiency & Excellence

Operational Excellence is intrinsically connected to Operational Efficiency.

IATA
CARGO
EXPERTS
CONFERENCE

25th September 2025

Thank You