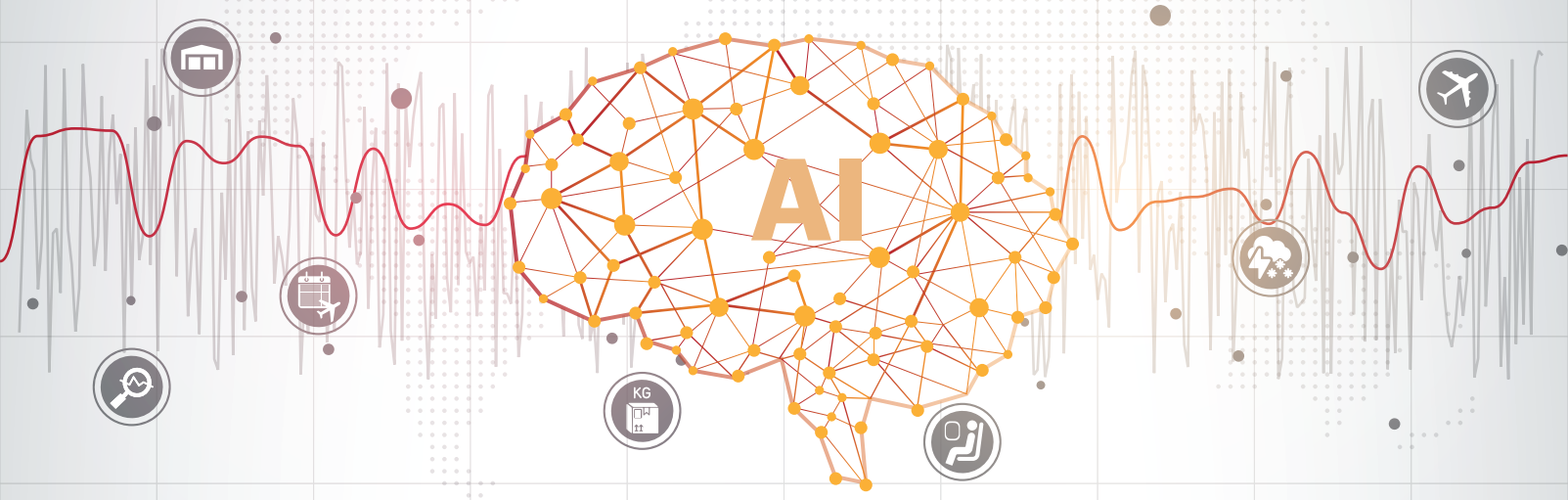
## DTAC - Subproject B

DIGITAL TESTBED AIR CARGO

Sponsored by Federal Ministry for Digitalization and Government Modernization

# Predictive Analytics




## The Challenge and Our Solution

Efficient resource utilization, capacity management, and the optimization of complex processes are constant challenges in air cargo logistics. Fluctuating cargo volumes and demand make accurate planning difficult, particularly in cargo handling. This often results in inefficiencies such as unused cargo space, delayed bottleneck detection, and inadequate workforce planning - directly impacting revenue potential. Concomitantly, increasing speed requirements and evolving regulations, especially in e-commerce, add complexity to planning and compliance.

To address these challenges, our **subproject B, Predictive Analytics,** leverages **AI-based predictive models**. By analyzing large datasets, it is possible to detect fluctuations early and plan processes in advance, establishing a reliable foundation for more efficient workflows and enhanced operational control.

### Key Initiatives Include:

- **Predictive Freight Volume Analysis** by examining historical data and external factors such as holidays, political events, and economic trends to forecast cargo demand. Additional data sources are integrated to account for available cargo space and optimize capacity planning.
- Implementation of **AI-driven compliance checks** for eCommerce shipments.
- Development of **explainable AI models** to ensure transparency and accountability in decision-making.

## Key Benefits and Expected Outcomes

By implementing the outlined strategies, subproject B is set to deliver the following key benefits:

- Streamlined logistics operations through AI-driven insights and predictive models.
- More precise predictions of freight volume, leading to optimized resource allocation.
- Automated regulatory checks utilizing AI and ensuring adherence to standards for eCommerce shipments.
- Transparent decision-making through the implementation of Explainable AI models that build trust.
- Task-specific automation to reduce manual intervention and improve scalability.

## Partners

Fraunhofer IML · Frankfurt University of Applied Sciences · Lufthansa Cargo · Fraport · Köln Bonn Airport · DB Schenker · CGM cargogate · Sovereign Ahead of Time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