

FRAUNHOFER INSTITUTE FOR MATERIAL FLOW AND LOGISTICS IML

LOGISTIC AND MOBILITY IN AIR TRANSPORT





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By definition, logistics at airports include all processes, resources and facilities for freight, mail and baggage handling, as well as the supply and disposal of materials for air traffic. Airports are the nodes of international air traffic networks and the interface between land and air transport

Aviation Logistics

As nodes of the international air transport networks on the ground, airports have the important function as an interface between the air and land transport networks. Growing demands in terms of efficiency, quality and cost-effectiveness represent an increasing challenge for all those involved, such as airport companies, airlines, handling agents and freight forwarders. We help our customers to continuously review and improve the necessary infrastructures, capacities, processes, control strategies and information flows so that even more pax and freight can be transported – safer and faster.

Mobility in air transport

In the air transport sector, mobility covers all the services along the passenger travel chain as a contribution to comprehensive door-to-door concepts. The focus here is on seamless traveling, which requires cross-company cooperation and new business models. These enable airports to offer their customers innovative and forward-looking services as origin and destination points as well as transfer HUB. Key drivers of mobility are both: the increasing digitalisation, which opens up completely new possibilities in travel, marketing and sales, and the demographic change in Europe, that leads to new expectations in the services of mobility providers.

Airport 4.0 / Digitization

The permanent and individual availability of data and information induces an integration of all logistics objects

and passengers into a digital network of new services, cyber physical systems and smart devices. With our expertise, we support you in the areas of cloud applications, AI and new technologies like AR/VR. The »digitization« of passengers, baggage and freight leads to new business models with individualised and tailor-made service offers, which we develop and implement together with you.

Infrastructure

The development of logistics systems includes the customeroriented analysis, planning and conception of airport-specific facilities. The versatility of logistics processes and products at airports and their surroundings, combined with the sometimes conflicting expectations of those involved, calls for an objective and individual overall view. We offer our customers cross-functional, simulation-supported location and terminal planning. Depending on the level of detail required, it can cover all transport, storage and transhipment processes.

Groundhandling

In the field of aircraft handling, we design and optimize all logistical processes on the ground that are necessary for the scheduled turnaround of an aircraft, including the supply of spare parts for MRO processes that are relevant for aircraft operations. To increase the competitiveness and acceptance of air traffic, we aim to introduce innovative and sustainable solutions, such as the use of driverless transport systems, the minimization of the carbon footprint and the implementation of electric mobility concepts. Under the aspect »People in



Focus«, we research and develop meaningful processes and resources. We optimize the human-machine interfaces as well as the use of work aids and their ergonomic design.

Passenger and baggage

The particular role and importance of air transport for travel, in particular for long distance travel, requires globally coordinated infrastructures, processes, products and information systems. Growing international intermodal networks- require intelligent and convenient solutions in connection with the market-driven competition of mobility service providers. The focus here is in particular on overcoming boundaries and fulfilling the individual wishes and requirements of travellers despite increasing security requirements.

Air cargo

The collection and evaluation of market and operating data is indispensable for supporting decisions and necessary measures taken by users and providers of logistics services. Increasing cooperation and digital data exchange in the air freight supply chain also require community systems, for which we enable and develop new business and cooperation models with new approaches to personnel deployment planning as well as access and ramp control systems. We carry out market analyses of freight volume considering the individual catchment area, evaluate locations and companies using benchmarking and key performance indicator systems, and develop meaningful monitoring instruments.



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