DIGITAL TEST FIELD AIR CARGO »DTAC«

JOINT RESEARCH TO IMPROVE THE E-COMMERCE READINESS FOR GENERAL CARGO

LARS MEHRTENS, FRAUNHOFER IML AVIATION LOGISTICS

IATA WCS 2021, DUBLIN 10/13/2021

Fraunhofer IML

100% LOGISTICS

29,000+
employees

75 institutes
and research institutions

2.8 billion
research volume

We do research…
Intralogistics
Processes | Organization
…in-house and industrial contract research

We support…
Technology
…Hardware | Software
…companies of all sizes and from all industries

We develop…
Mobility
…Humans | Goods
…e.g. for the LHC accelerator at CERN, Geneva

Fraunhofer
IML

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Aviation Logistics, Frankfurt

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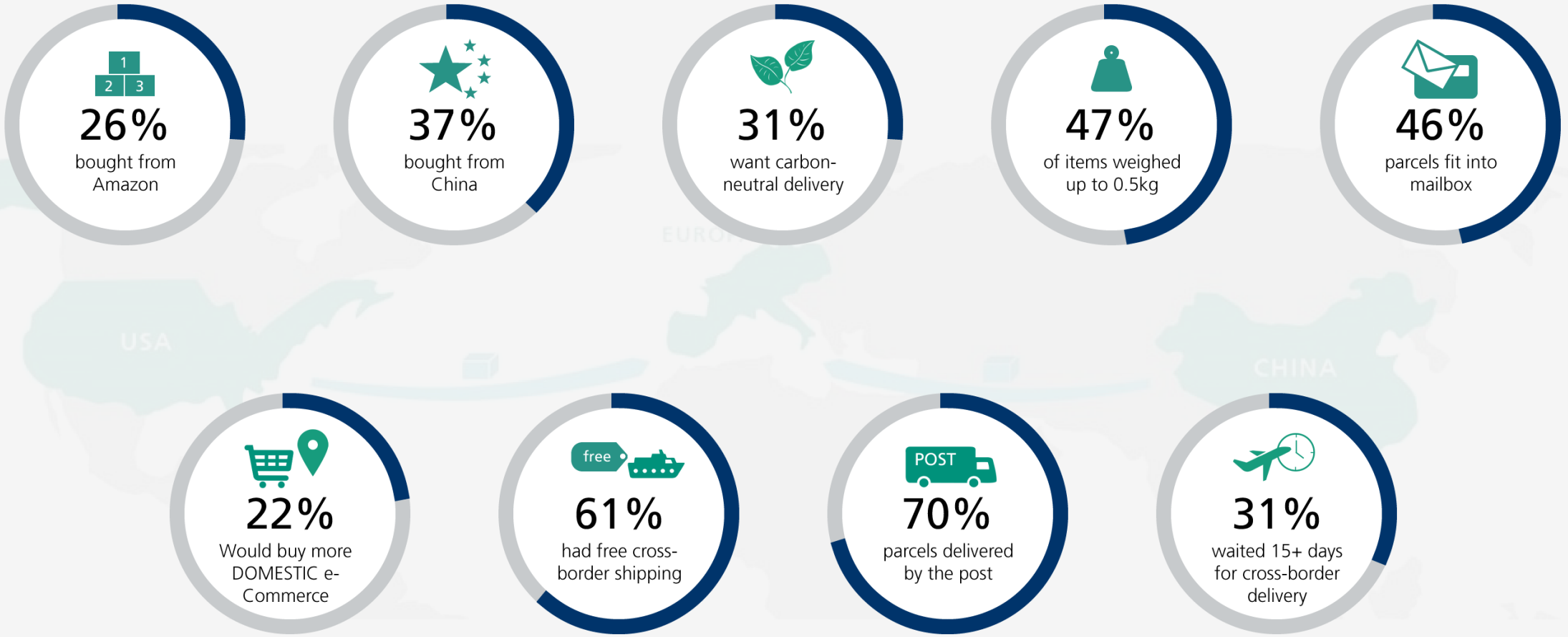
Characteristics of Cross Border e-Commerce



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E-Commerce in Aviation

	CEP-Service	Postal Service	General Cargo
	 Picture: DHL	 Picture: DHL	 Picture: ASFS bvba
Restrictions (Size):	medium	strict	none
Automation (Technology):	high	high	low
Speed (Handling):	high	high	slow

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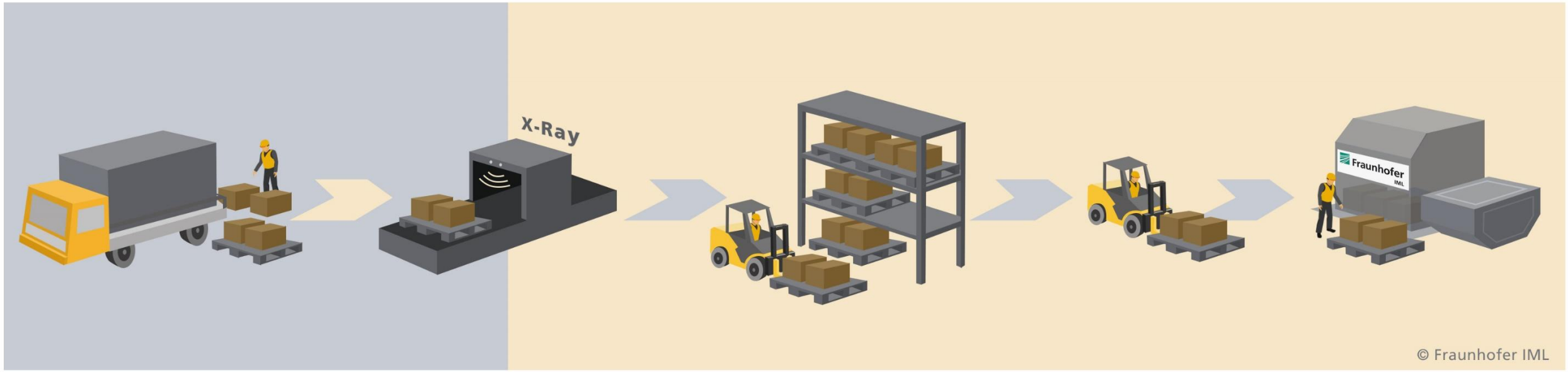
E-Commerce Handling in General Cargo



Acceptance & 1st Level Consolidation → X-Ray → Storage → Retrieval & Transport to B/U Place → 2nd Level Consolidation

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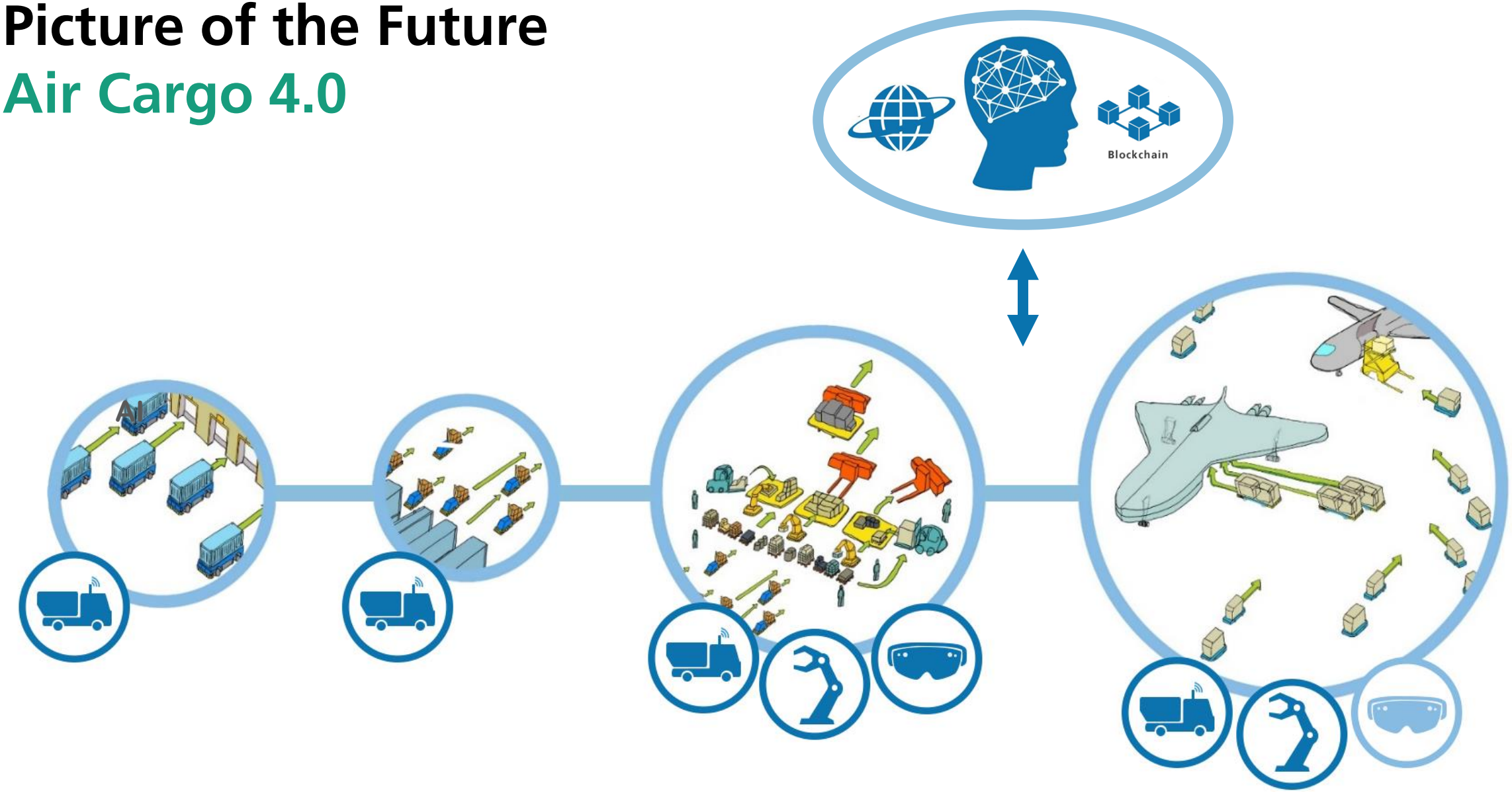
Picture of the Future

Air Cargo 4.0



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DIGITALES TESTFELD AIR CARGO

»Digital Test Field Air Cargo« Takeoff 10/2021

Supported by:

Federal Ministry of Transport and Digital Infrastructure

Fraunhofer IML

VISION.

In a 3-year timeframe, we will create a neutral research framework that bundles air cargo specific research activities and makes the results easier available for the industry.

With a functional ONE Record demonstrator, we are awakening data flows out of its hibernation and will be catapulting them directly into the 21st century.

Destination.

Develop and demonstrate digital connected solutions that are accepted by airports and stakeholders alike - to enable more efficient air cargo handling.

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»Digital Test Field Air Cargo«
Consortium

DIGITALES TESTFELD AIR CARGO

2 Research Institutions

Fraunhofer IML

FRANKFURT UNIVERSITY OF APPLIED SCIENCES

5 - 7 Test Lab Locations

9 Industry Partners

Lufthansa Cargo

Fraport

LEIPZIG·HALLE AIRPORT

SOVEREIGN

CHI CARGO HANDLING INTERNATIONAL

LUG aircargo handling

DB SCHENKER

Cargogate Munich Airport

Köln Bonn Airport

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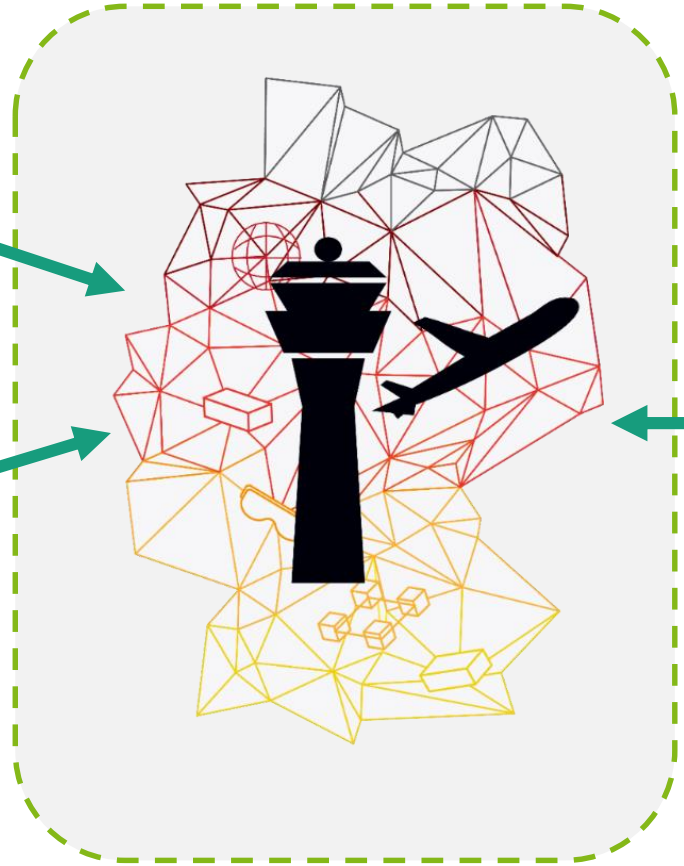
Digital Test Field Air Cargo feat. Silicon Economy

blockchain europe.nrw

silicon economy



others

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»Digitales Test Field Air Cargo«

Demonstrators

DIGITALES TESTFELD AIR CARGO

DataHub & Digital Avatar

Predictive Analytics

Outdoor AGV

Smart Pouch

Digital Site Logistics

Automated Terminal Handling

Soruces: https://lu-web.de/redaktion/news/daten-drehscheibe/,
https://www.tld-group.com/news/tld-easymile-announce-partnership-develop-tracteasy-first-autonomous-baggage-tractor Stock.adobe.com: Funtap, knssr, Blue Planet Studio, Monopoly919, Destina

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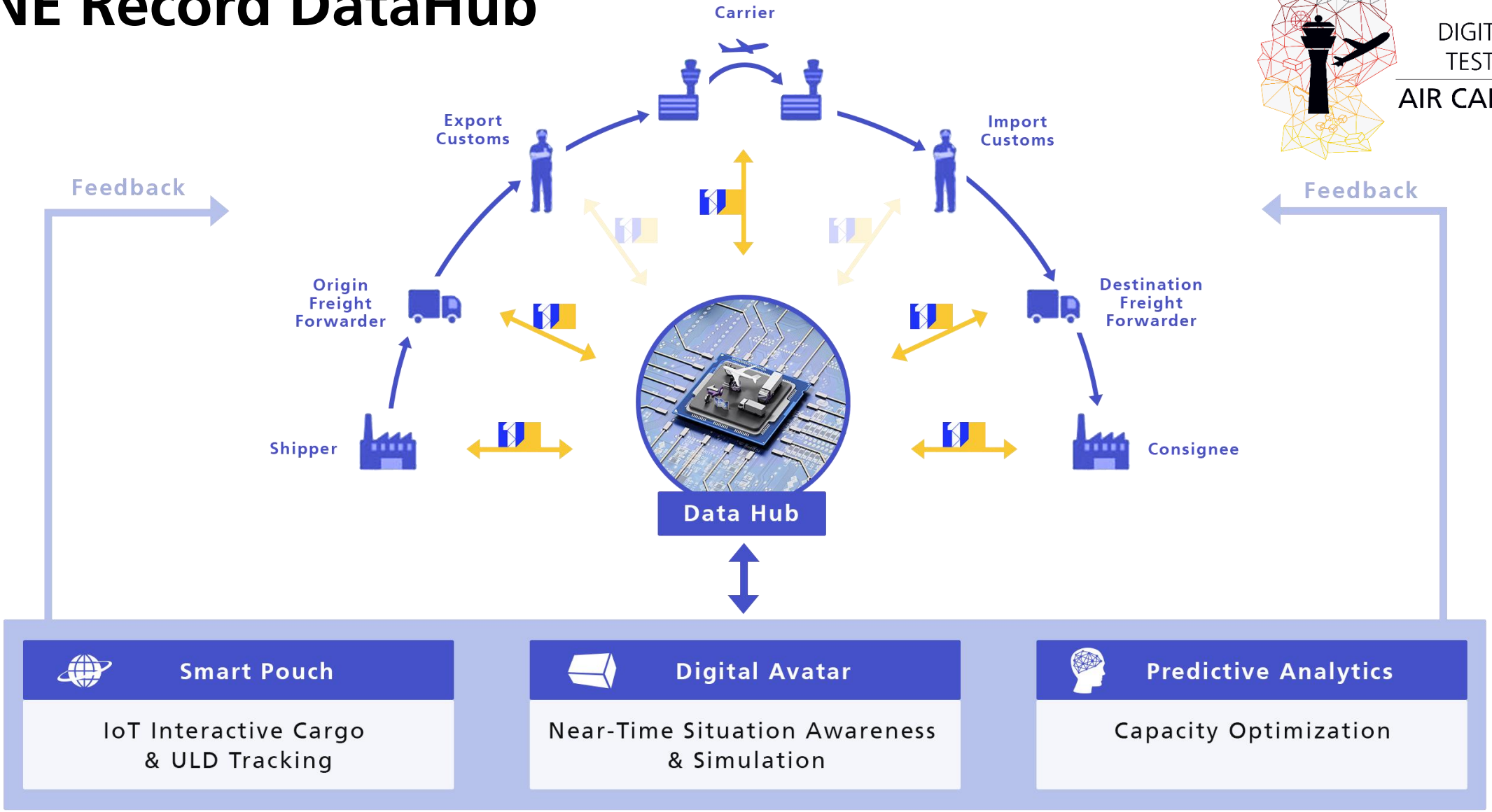
ONE Record DataHub

DIGITALES TESTFELD AIR CARGO



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Automated Terminal Handling
Cross Border e-Commerce

Acceptance → X-Ray → 1st Level Consolidation / Storage → Retrieval & Transport to B/U Place → 2nd Level Consolidation

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Automated Terminal Handling
»LoadRunner« Autonomous floor conveyor

DIGITALES TESTFELD AIR CARGO

Flexible infrastructure

- Minimal infrastructure required
- Fully automated and integrated vehicle routing
- Swarm intelligence – AI routing in $\frac{500}{Sec}$

Flexible throughput & capacity

- Number of vehicles can be easily adjusted
- Speed up to 36 km/h
- Flexible on goods dimensions and payload using 360° platooning
- Several containers can be collected in one platoon

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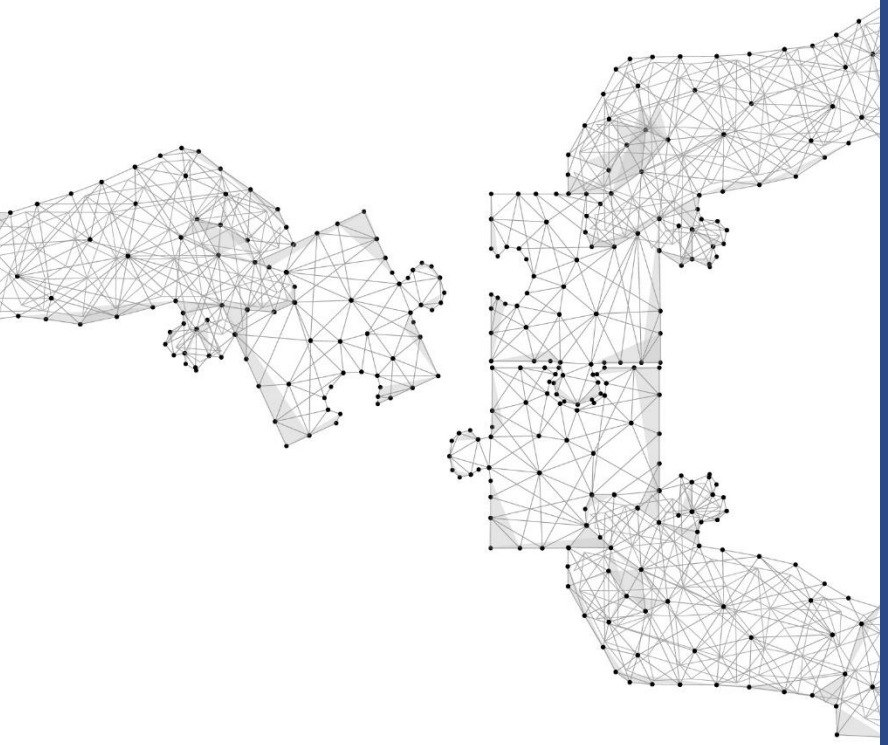
Fraunhofer
ai arena
ML2R

Join us!



Become part of the DTAC community - participate in the collaborative development and do your part for broad acceptance!

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