



**Life Logistics Conference 08Oct19**  
**Cool Master Plan:**  
**LCAG's Answer to the Requirements of**  
**the Pharmaceutical & Healthcare**  
**Industry**



**Lufthansa Cargo**



## Our Project at a Glance



## Certification and Expansion



## Temperature Protection



## Digitization of Cool



## Outlook



# Implementation of Cool Master Plan to address ever-changing market environment



## Market environment

### Growth

of pharma/healthcare market



### Complex supply chains

of manufacturers



### Huge investments

made by other logistics companies



### Increasing requirements

from regulatory authorities



## Our answer



**Certification and expansion**  
of our infrastructure



**Improved temperature protection**  
for your goods



**Digitization and transparency**  
throughout the entire transportation chain





## Our Project at a Glance



## Certification and Expansion



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## Digitization of Cool



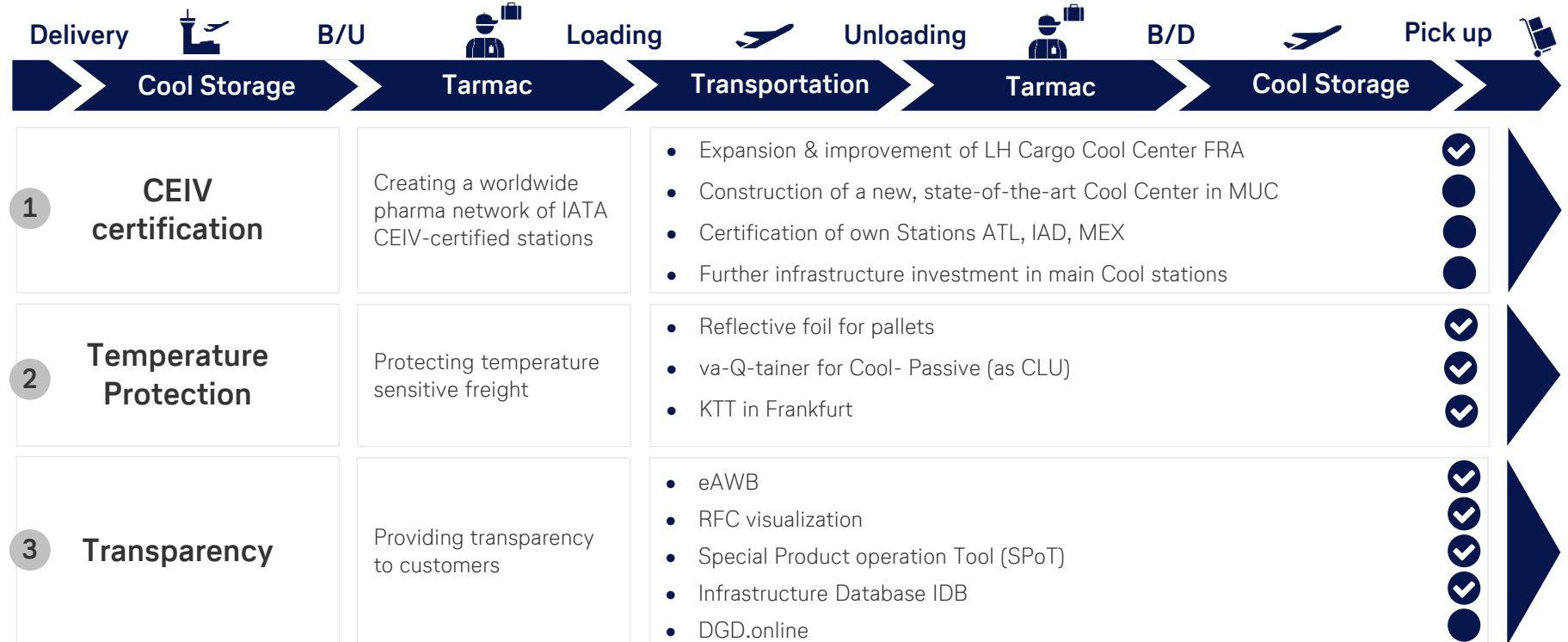
## Outlook





# Cool Master Plan

## Affects the Whole Supply Chain







## Our Project at a Glance



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## An Outlook

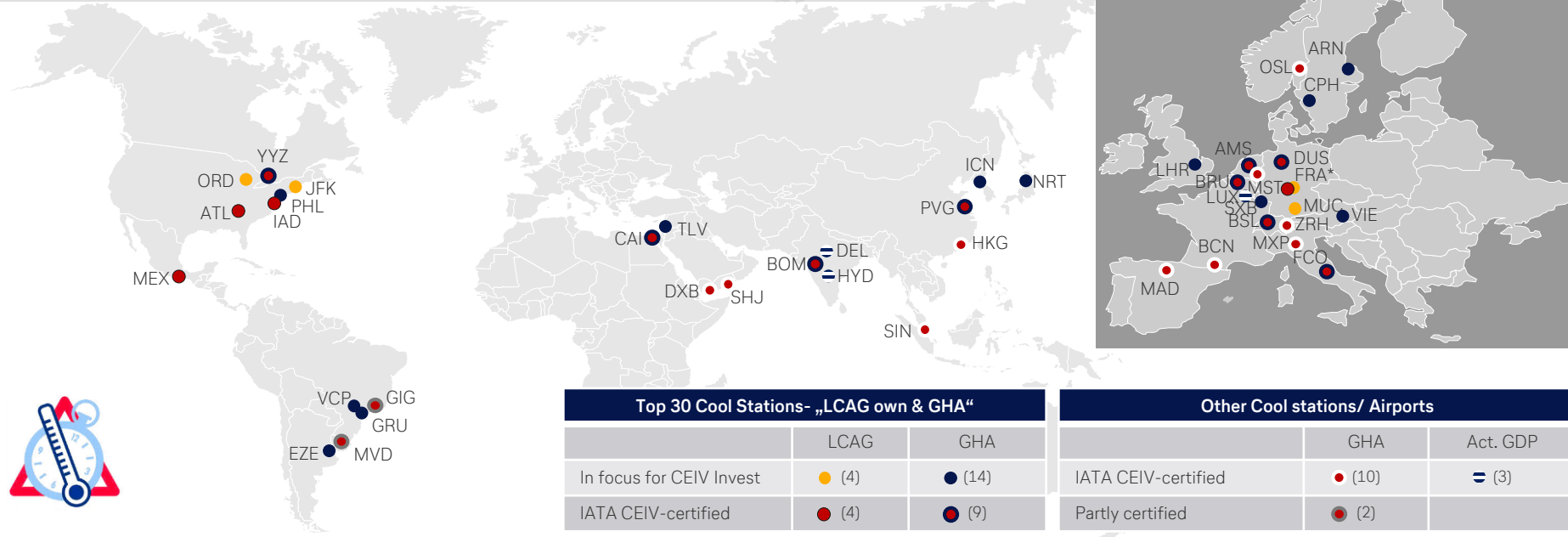




## 25 Stations of LCAG Network are CEIV-Pharma certified.

13 out of 30 Top Cool Stations - ATL, IAD, MEX received certification in SEP 2019.

In October 2016, the IATA awarded Lufthansa Cargo as a pioneer in quality services with its CEIV Pharmaceutical seal for compliance in worldwide processes



# Lufthansa Cargo Cool Center in Frankfurt

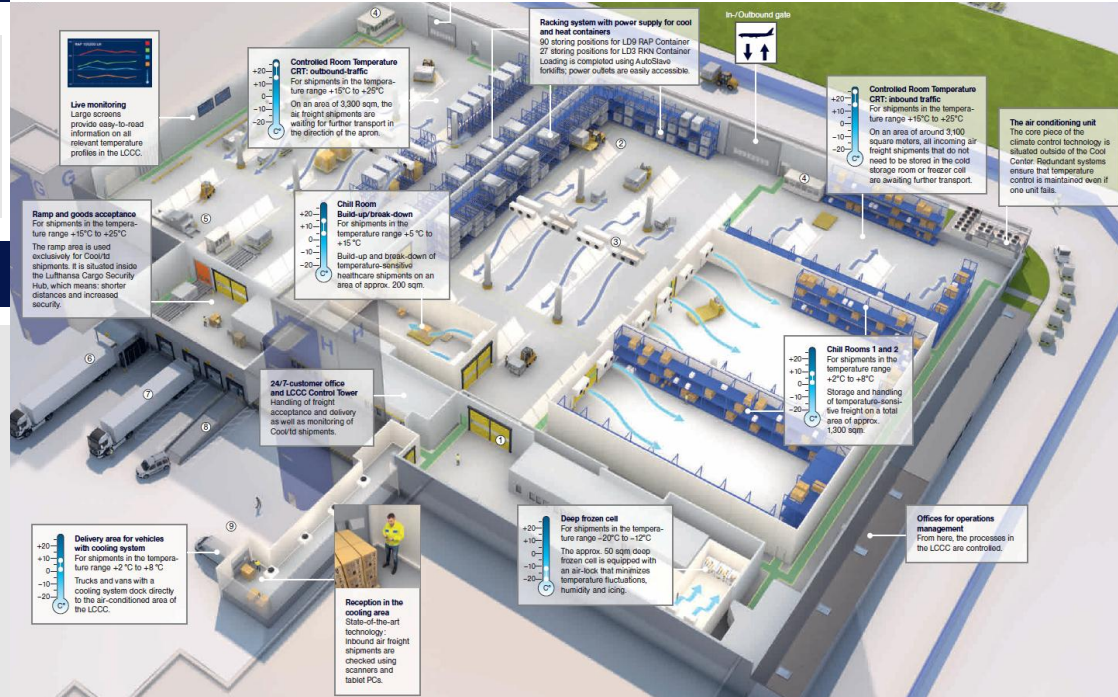


## Ramps

- Four ramps for **15°-25° C**, one ramp at **2°-8° C**.
- Another ramp **with truck dock** and roller bed into the warehouse (temperature range 15°-25° C). For unmixed cool trucks.

## Warehouse

- Original LCCC – 5,000 m<sup>2</sup>
- Extension of warehouse facility by **approx. 3,300 m<sup>2</sup>** in 2017.
- Extension and doubling of **racks** for active containers.
- Incorporation of **x-ray device** into temperature controlled area of **15°-25° C**.
- **Racks** for passive units.
- Splitting of area into **inbound and outbound traffic, 15°-25° C**.







# A new CEIV-certified cool storage facility in MUC planned for 2020

## Excellent conditions for temperature-sensitive goods

The station in Munich is Lufthansa's second-largest hub. It offers an excellent network, attractive access rates and short handling times. Thus, it is essential for our pharma network. So far, cool storage has been limited and the station is not certified.

### Status Quo

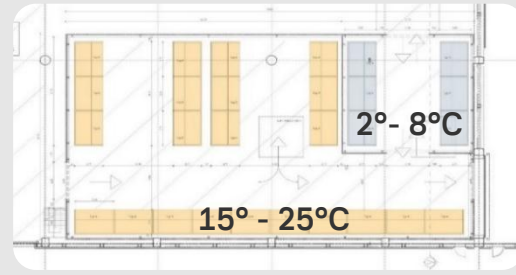
As a short-term solution, three temperature-controlled trailers have been set up with room for up to twelve PMC pallets.



### Planned Cool Facility

New state-of-the-art Cool Center is planned for MUC with 2 storage rooms:

- 695m<sup>2</sup> for 15° - 25°C
- 170m<sup>2</sup> for 2° - 8°



### Opening planned for Q3-2020

MUC Cool Center will provide **excellent conditions**, especially for health care and life-science shipments.

### CEIV Certification Process

- Not only the infrastructure in MUC is updated.
- Currently ORD and JFK are in focus for extensive infrastructure upgrades with effects in 2020 and 2021.



## Our project at a glance



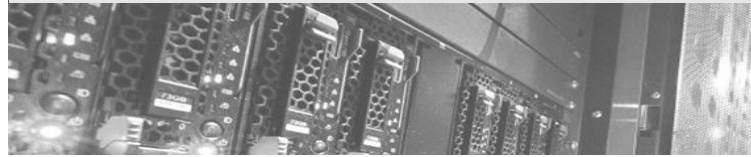
## Certification and Expansion



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# The highest risk of cool chain breaks occurs on tarmac for Cool-Passive shipments



## Effective measures against cool chain breaks on tarmac

### Reflective foils



**Launched 06/2017**

### Reduced tarmac time



**Ongoing**

### Extension of Cool dollies



**Under evaluation**

# Effective sun protection for temperature-sensitive freight since 2017



- 1 Lufthansa Cargo provides a one-of-a-kind service in the airfreight industry.

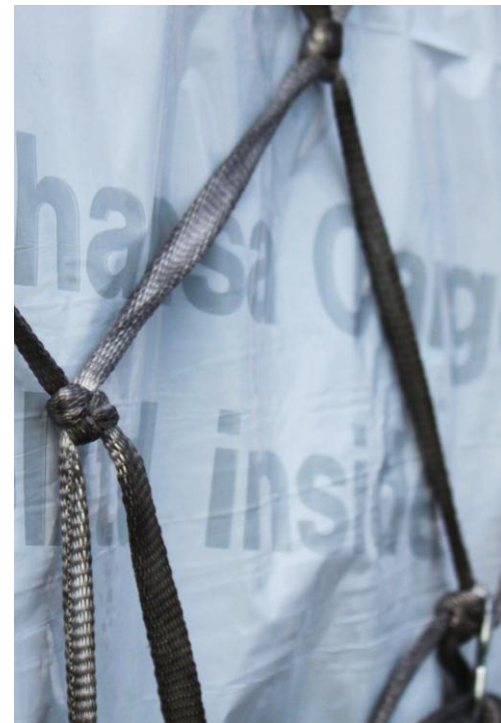
Since **2017**, **Cool-Passive** shipments are protected by a specially developed protective thin foil.

- 2 This custom reflective foil helps to keep freight cool by reflecting direct sunlight.

It reduces solar-induced temperature increases by up to **20° Celsius**.

- 3 The service has been rolled out worldwide for all pallets with Cool-Passive.

The product feature is **completely free of charge** for our customers.



# Cooling dollies offer protection against ambient conditions



Cooling dollies offer temperature-controlled apron transport to ensure uninterrupted cool chain.



## Frankfurt:

- Thermo trailers for temperature-controlled shipments for lease.
- State-of-the-art technology: constant cooling (up to  $-30^{\circ}\text{C}$ ) and heating (up to  $+30^{\circ}\text{C}$ ) even during long tarmac transportation.
- Digital monitoring for temperature management with multi-level fail-safe system: SMS warning messages, warning siren & warning light.
- Doors of the rear section with windows to allow monitoring from outside.
- Only for ULD shipments. Suitable for LD and MD.

KTTs are bookable on request no later than 72 hours prior to departure.





## Our Project at a Glance



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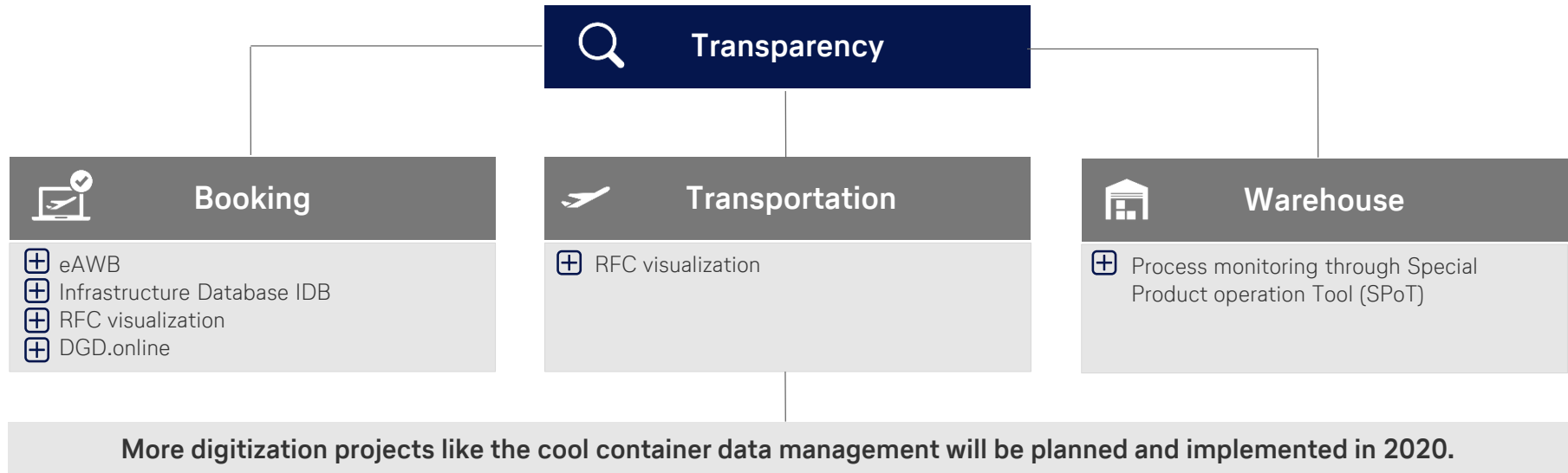
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# Transparency through Digitalization is increasingly important for the transportation of the temperature-sensitive goods



Shippers, especially from the healthcare industry, ask for more transparency during the entire transport chain to fulfill the changing requirements of various legal frameworks and to ensure the quality of their products. Lufthansa Cargo, as a pioneer for digitalization in the air freight industry, plans to create transparency throughout the entire cool transportation chain



# Temperature control during trucking



- Since **2017**: “Road Feeder Cool” (RFC) is visualized in iCap and eTracking.
- When “RFC” is shown in the booking system, it is a **scheduled truck service. No extra charge occurs.**
- The new provision ensures that temperature-sensitive cargo is actively or passively cooled or warmed during road connections with cool trucks.
- Cool-Active is always booked on RFC.

The Routings shown below are for Service : td.Pro

Org:  Dest:  LAT:  TOA:  For Service:

Capacity Agreement:  AC-Group:

Commodity Description: **Pharmaceuticals, not restricted**

Route No	Org	Dest	LAT	TOA	Print	Back	Show DRT	Clear DRT
Route 6								
LH059	HAJ	FRA	29AUG17 16:25	30AUG17 03:50				
Route 7								
LH7061S	HAJ	FRA	29AUG17 17:00	30AUG17 01:59				
Route 8								
LH7065S	HAJ	FRA	29AUG17 21:00	30AUG17 03:30				
Route 9								
LH7001S	HAJ	FRA	29AUG17 22:00	30AUG17 04:00				
Route 10								

# SPoT: quality assurance through state-of-the-art process monitoring\*



## 3. Rules & Workflows

Every shipment has its own digitally tailored rules (What? When? Where? Which work/ Which shipment?) and work instructions creating work order.

## 2. Transport Monitoring

Tailored transport plans for nearly every transport/ transaction are integrated with actual transport and transaction and thereby monitored by default.

## 1. Central Data Storage

Everything is digitally documented and centrally available. This includes location changes and depending upon the product ambient temperature, set points, seals, dry ice quantities, battery levels.



## 4. Escalations & Alert Mechanism

Every deviation from transports, transaction, work order or captured data (e.g. temperature) is immediately and globally triggering escalation to a dedicated Cool Control Team.

## 5. Supervision

This Team assure global process compliance and service recovery to assure the highest quality standards possible.

## 6. Reporting

Millions of work executions allow us to structurally identify weaknesses and risks in the supply chain, resulting in the immediately enforced improvements in the work instructions as well as permanent process improvements.

\* currently for Cool-Active, Cool-Passive BUP via FRA.

## We network the world



**361**

destinations

**107**

countries

**9,500**

marketed flights  
per week \*

**4**

hubs in Frankfurt,  
Munich, Vienna  
and Brussels

**91**

cities served by freighters  
per week\*

**10**

Europe

**42**

Asia and the Middle East

**39**

the Americas

\* annual average 2018





**Cool** – The right conditions for temperaturesensitive goods.

### Your benefits

- Temperature-controlled transport throughout the Lufthansa Cargo network, including Road Feeder Service
- Cool-Active: temperature management in special containers with active temperature control systems
- Cool-Passive: passive temperature management using a variety of packaging solutions
- Temperature-controlled transport is also available for dangerous goods

### Key Facts

- 60,000 tons of pharmaceuticals per year
- Our daily flown insulin supplies 1.3 million diabetics

# Logistics for the healthcare industry



## Your needs

- Customized solutions and reliable transport for computer tomographs, vaccines, generics, donor organs, blood and plasma or radioactive isotopes for cancer therapy



## Our recommended products

- **Care** for dangerous goods
- **Cool** for temperature-sensitive goods like insulin
- **Safe1** for especially valuable goods like donor organs

# Interested to learn more about LCAG's products for pharmaceutical and health care industry ([www.lufthansa-cargo.com](http://www.lufthansa-cargo.com))



Lufthansa Cargo

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**Lufthansa Cargo**  
Networking the world.