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WHITE PAPER

# **AIRPORT TO AIRPORT PHARMA CORRIDOR**

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## TABLE OF CONTENTS

<b>1. What are the key challenges?</b>	<b>04</b>
1.1 Quality standards along supply chain	04
1.2 Seamless temperature-controlled handling	04
1.3 Visibility and traceability	04
<b>2. How did Pharma.Aero proceed?</b>	<b>04</b>
2.1 Mapping road-map and protocol	05
<b>3. What are the main conclusions?</b>	<b>06</b>
3.1 Endorsement of quality assurance	06
3.2 Identification of temperature exposure risk	06
3.3 Optimization of operation	06
<b>4. How does Pharma Corridor play a role post-COVID-19?</b>	<b>06</b>

## EXECUTIVE SUMMARY

The objective of Pharma.Aero is to achieve excellence in reliable end-to-end air transportation for pharma shippers, by fostering collaboration between CEIV certified airport communities dedicated in developing and pioneering when it comes to handling, storage and air transportation of pharmaceuticals.

In 2019, Brussels Airport Company and Hong Kong International Airport successfully pioneered the protocol of airport-to-airport corridor, by connecting a CEIV Pharma certified airline, Cathay Pacific, and respective cargo handling communities. The major goal of this project was to investigate and deliver unique assurance in handling quality to pharmaceutical shippers. This project did not only connect CEIV certified air cargo service providers at both ends, it was also the first of its kind to invite leading pharmaceutical companies, including Pfizer, MSD and Johnson & Johnson to participate. There were two major goals identified within the project:

1. To establish a standard protocol for mapping the corridor;
2. To test the mapping protocol on pharmaceutical shipments over the identified corridor.

With shippers setting out stringent key performance indicators (“KPIs”) to evaluate operational parameters, 47 live shipments were monitored and analyzed in a dashboard. By achieving zero cases of temperature excursions and over 95% fulfilment for all KPIs, the trial successfully proved that BRU-HKG lane consistently adheres to high standards.

The airport-to-airport Pharma Corridor protocol provided key information in order to ensure quality assurance is in place to protect product integrity and prevent pharma product loss. Connecting all the dots across a supply chain has never been easy and one of the major outcomes of the corridor was to provide an unprecedented level of transparency to the entire pharmaceutical supply chain. It conferred visibility and insight to industry stakeholders in identifying areas of improvement with regard to process and performance.

The initiative will be propagated to other Pharma.Aero member airports to form a network of pharma corridors. Pharma shippers will then have a network to cover their trade lanes which meet their shipping needs.



## 1. What are the key challenges?

### 1.1 Quality standards along supply chain

Quality issues and temperature excursions are the key concerns for pharmaceutical shippers. The lack of standardised industry standards along the supply chain has often led to incidents. The CEIV Pharma program launched by IATA is designed to meet the needs of aviation pharma supply chain stakeholders by setting globally consistent standards to achieve pharmaceutical handling excellence. Going beyond individual operational excellence, the industry started to look for a protocol that could connect the dots and establish necessary protocol. It is also pivotal to test with real shipments to investigate potential pitfalls in the protocol and the real challenges faced.

Through this BRU-HKG pharma corridor mapping, it can be affirmed that CEIV certified airports have harmonized handling procedures and strong cooperation to provide the necessary quality assurance to pharma shippers. CEIV certified airport communities are more likely to have standardized protocols and operating procedures in place when it comes down to pharmaceutical shipments.

### 1.2 Seamless temperature-controlled handling

Given the sensitive nature of pharmaceuticals, it is necessary to establish global standards and the best practices to ensure integrity of pharmaceutical products would not be compromised when they are shipped by air. Ramp handling is often identified as a high-risk area, as it can cause temperature deviation due to the lack of proper protection. Beyond fulfilling the rigorous assessment for the CEIV Pharma certification, Brussels and Hong Kong Airports, which are equipped with additional cool dollies to mitigate the risk of exposure to ambient weather elements during ramp transportation, have demonstrated how to be better placed to serve the sector with its efficient cold chain facilities.

### 1.3 Visibility and traceability

Due to its complex and sophisticated nature, the internal process of shipment handling along the supply chain often remains hidden for pharmaceutical shippers, hence entailing associated risk of mishandling. This project provided opportunity for all stakeholders to work collaboratively and establish clear KPIs.

The dashboard allows users to understand the internal handling Service Level Agreements (SLAs) of the operators in the Pharma Corridor and gives an indication on how the actual airport-to-airport performance is aligned with these SLAs and identified KPIs.

## 2. How did Pharma.Aero proceed?

To better evaluate the performance of this Pharma Corridor, the project was divided into 4 work packages with each focusing on a specific working area, namely, onboarding of pilot members, establishing a protocol for corridor mapping and educating the project members, inclusion and monitoring of trials shipments and evaluating of protocol against the monitored shipments.

As the primary stakeholders, pharma shippers' inputs towards the project were of key importance. The pharma shippers were directly involved in setting up KPIs for a pharma corridor and the subsequent validation of the mapping protocol.

During the trial, the corridor was stress-tested against a number of variables and shipment characteristics. For example, items with different packaging required storage at different temperatures. A total of 47 live shipments with various temperature ranges such as 2-8 °C and 15-25 °C were shipped and monitored according to five KPIs including product temperature, documentation, security, transportation lead times, and quality & product integrity.

When different companies held their own sets of SLAs and KPIs, the dashboard logging shipment activities in detail has offered unprecedented visibility and transparency on the actual performance.



The alignment through the corridor mapping protocol of different internal KPIs created more insights and visibility on the different operating procedures.

## 2.1 Mapping road-map and protocol

The mapping model or road-map is providing a clear model of all requirements and Key Performance Indicators identified to monitor a corridor from a defined origin airport to a defined destination airport.



<b>1. Product temperature excursions throughout the whole journey</b>
- Temperature graphs to be provided by shippers after delivery at final destination
<b>2. Documentation</b>
- Number of correct instructions
- Number of variations between AWB and shippers instruction
- Number of missing IATA Time & Temperature label on products
- Number of variations between temperature on IATA label and AWB
- Number of incomplete acceptance checklists
- Number of missing documentations
<b>3. Delays</b>
- Number of late delivery to ground handler
- Number of delays due to X Ray Congestion
- Number of variations in internal transport from acceptance to cold room, cold room to build-up, build-up to handover to ramp handler
- Number of variations for tarmac transportation compared to the pre-defined time frames
- Number of variations in build-up, break-down compared to the pre-defined time frames
- Number of variations in loading/unloading of A/C compared to the pre-defined time frames
- Number of variations on On-time departure of A/C
- Number of variations on On-time in Full shipments
- Number of offloads
<b>4. Quality</b>
- Number of non-compliances related to integrity of the shipment
- Number of damages
- Number of variations in sealing of delivery truck upon arrival at ground handler at origin
<b>5. Equipment</b>
- Is a thermo dolly used or not
- Minimum and maximum temperatures during tarmac transport
- Cold rooms : temperature graph to be provided by ground handlers
- Number of excursions compared to the relevant temperature of the cold rooms and thermo dollies
- Temperature mapping and calibration reports of the cold rooms and thermo dollies

### 3. What are the main conclusions?

#### 3.1 Endorsement of quality assurance

We found strong alignment among all supply chain partners on the relevant business value drivers. They adhered to the SLAs and KPIs established during CEIV certification and hence affirming the quality excellence of the corridor protocol.

Shippers could entrust the Pharma Corridor, consisting of CEIV certified operators, as a token of quality handling, providing assurance of high handling standards to their pharmaceuticals.

#### 3.2 Identification of temperature exposure risk

Using thermal dollies as apron transportation has mitigated major risk of temperature excursion and materialised seamless, temperature-controlled transportation on the ramp. Amongst the 47 shipments with zero temperature excursion cases, nearly 90% were transported with thermal dollies at both airports, showing that a thermal dolly is effective in protecting shipments from prolonged exposure to ambient temperature and improving the performance reliability. Statistics showed that thermal dolly has effectively minimised shipment exposure time in uncontrollable weather conditions for 3 hours over the BRU-HKG lane. The result underlined the need for using protective measures on those identified weak links in the chain.

#### 3.3 Optimization of operation

Following in-depth study also revealed that the complexity of a supply chain and further quantified the potential risk involved in air transportation. Deep diving into the different company internal protocols and KPIs showed that a certain standardization is necessary to harmonize the overall shipment handling.

The trial underpinned participating companies to further investigate and enhance respective shipment handling. For instance, shippers may optimize the packaging of

pharmaceutical shipments or to work with operators to streamline procedures in order to improve operation efficiency.

Financial impact was seen as a business value driver for the pharma shippers. As the Pharma Corridor continues to deliver secured temperature-controlled service, it has also made downgrading of packaging material possible.

### 4. How does Pharma Corridor play a role post-COVID-19?

With the almost standstill of passenger aircraft movements across the globe and the drastically dropped airfreight capacity under the COVID-19 impact, pharmaceutical industry has become very vulnerable and many disruptions still last to date.

As many key opinion leaders from the industry have shed light on the pandemic situation, weaknesses of the supply chain have become more visible during this crisis and a community move has to be taken in order to cope with the new normal. To overcome disruptions and for future sustainable development, flexibility, reliability, transparency and harmonization of standards along the supply chain are key successful factors.

Moving forward, pharmaceutical shippers are encouraged to set up wider collaboration with airport communities using the Pharma Corridor concept. By identifying and establishing KPIs strategically and performing trials with data monitoring, shippers could visualize the lane characteristics and performance easily and fine-tune handling procedures to mitigate undesirable risks. The accumulated data and high level of transparency would definitely help shippers to get better control and make swift decisions in these extraordinary challenging times.

Collaboration and sharing information have become the standard to be able to execute the job of transporting vaccines for COVID-19. A protocol like the Pharma Corridor 1.0 can only lead to better understanding and collaboration along the supply chain.



## The authors of the white paper are:

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Airport-to-Airport Group members	
Company	Category
Brussels Airport Company	Project lead, Airport
Hong Kong International Airport	Project lead, Airport
MSD	Pharma Shipper
Johnson & Johnson	Pharma Shipper
Pfizer	Project Co-sponsor, Pharma Shipper
Corridor operators	
Company	Category
Cathay Pacific	Airline
Swissport	Transport Handler at Brussels Airport
World Freight Services	Warehouse Handler at Brussels Airport
Cathay Pacific Services Limited	Cargo Terminal Operator at Hong Kong Airport
Hong Kong Airport Services Ltd	Ramp Handler at Hong Kong Airport
Brinks	Operator of thermo dolly at Brussels Airport

Table 1: Project participants

## A special thanks to the following people actively involved in the project (in alphabetical order):

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