



AirCargoBelgium

Towards a smart hyperconnected era of efficient and sustainable logistics, supply chains and transportation

IPIC 2021 - 8th International Physical Internet Conference

June 14-16, 2021

www.aircargobelgium.be



- Introduction
- PI roadmap
 - Digital & Data
 - Community & Sharing
 - Governance Structure
 - Infrastructure & Hardware
- Conclusions



to make BRU cargo the most
attractive, efficient, innovative and successful
logistical platform.



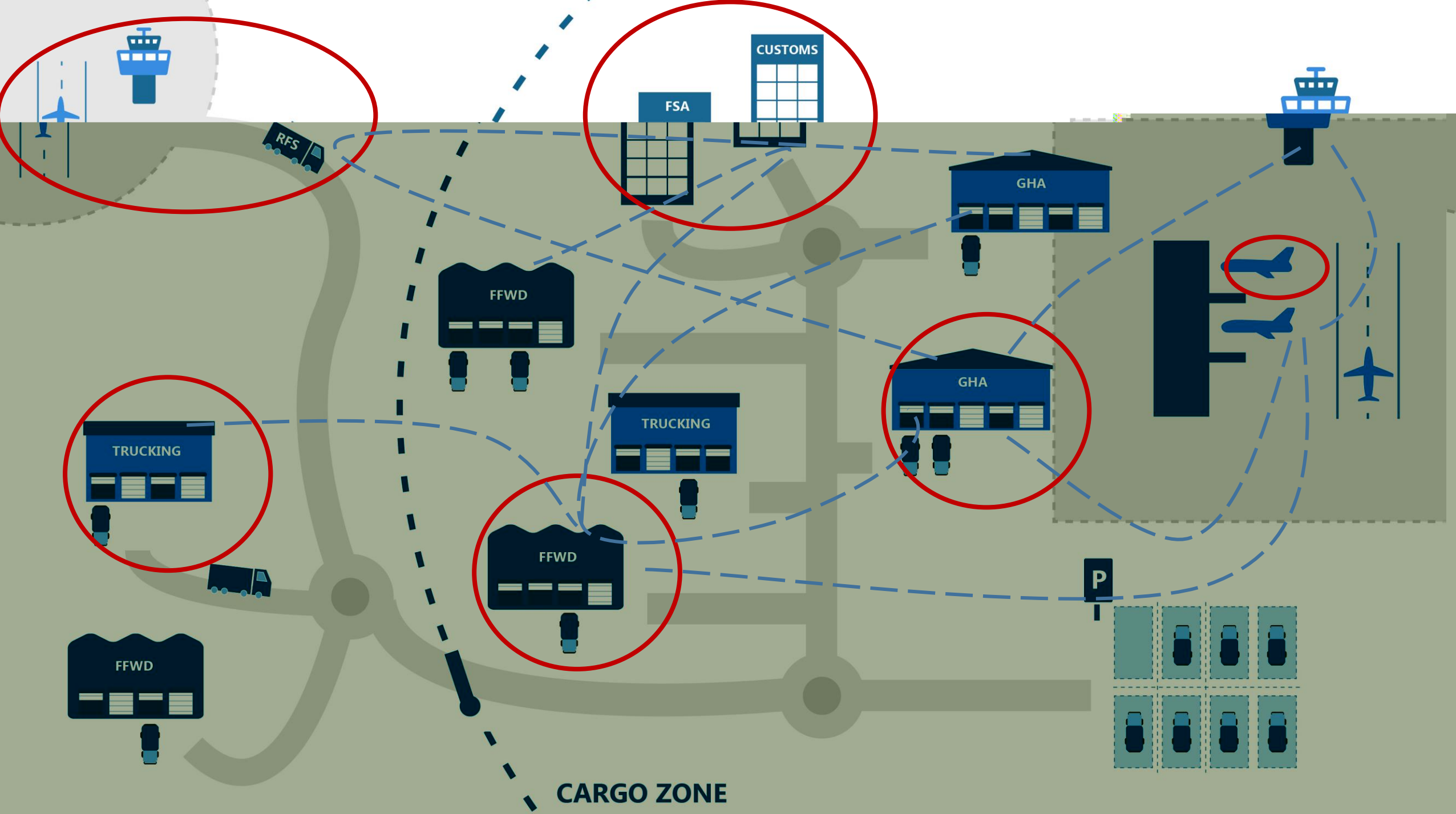
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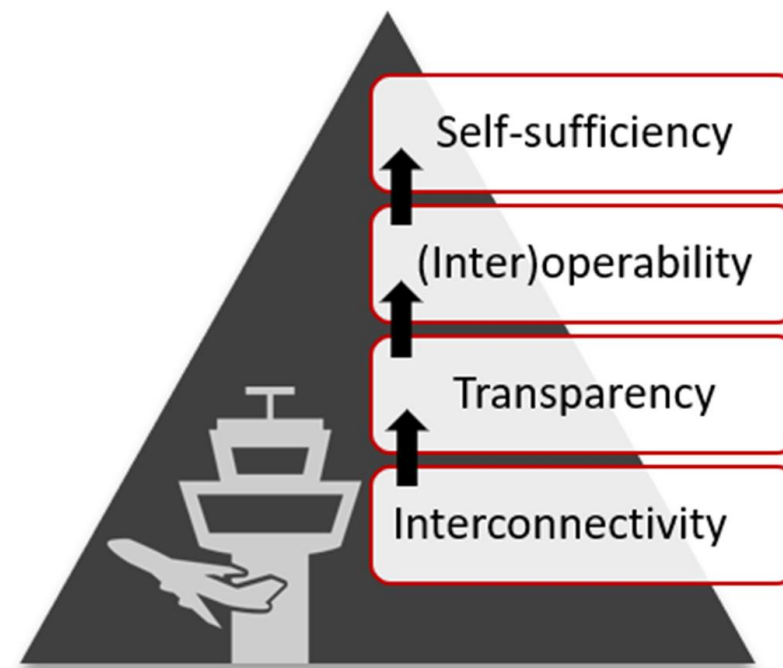
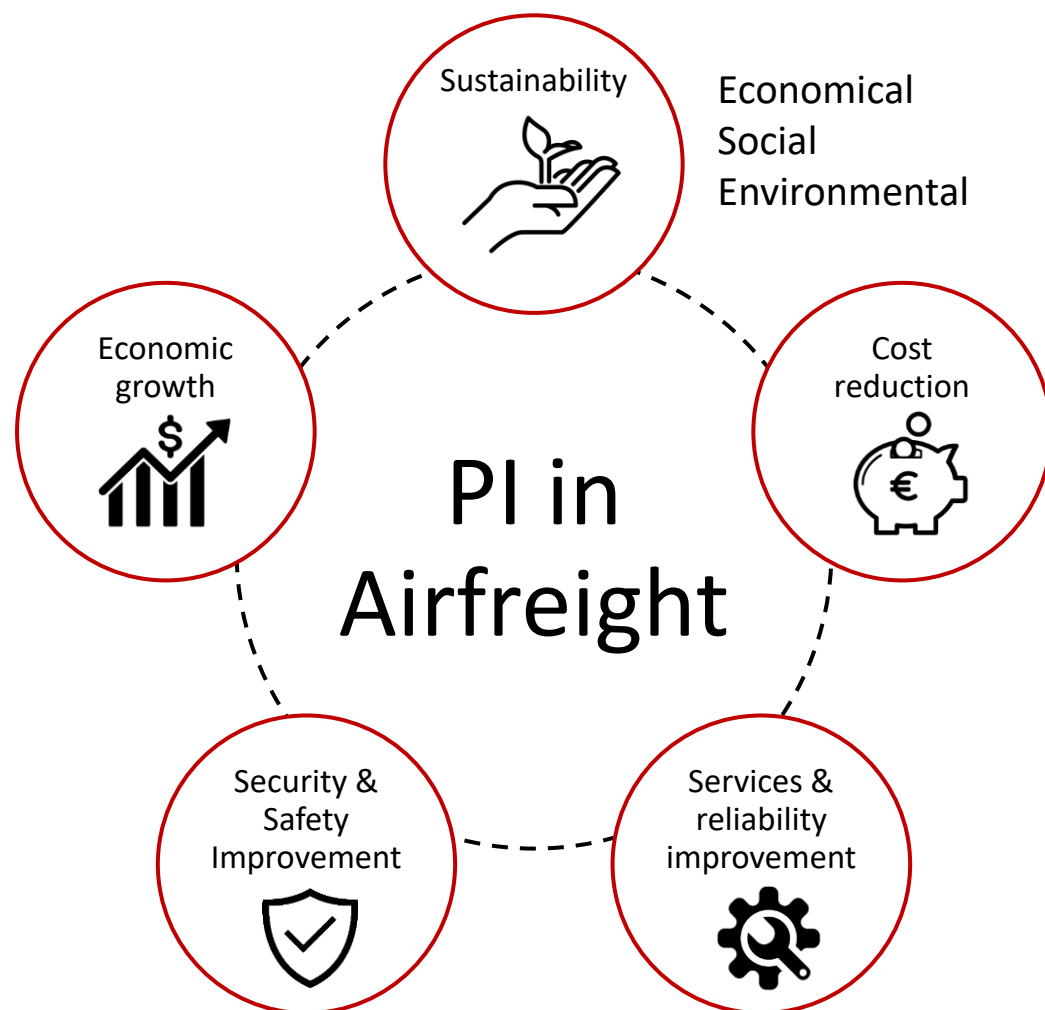


- Cluster organisation at BRUcargo (Brussels Airport)
- Neutral entity (goals always in the full interest of the air cargo community as a group and the overall benefit of the industry)
- Mission: Make BRUcargo the most attractive, efficient, innovative and successful logistical platform globally
- Community projects: SUSTAINABILITY through DIGITIZATION
→ Economical, social & environmental
- 154 members: forwarders, handlers, airlines, trucking companies...











2020-2025



2020 -2025

2025-2030



2025-2030

2030-2035



2030-2035

2035-...



2035



Strengthen BRUcloud

Set-up pilots and projects on IoT

Develop digital collaboration with governmental bodies



Expand BRUcloud to allow advanced data-analytics

Broaden the use of IoT-applications

Integrate new platforms into BRUcloud



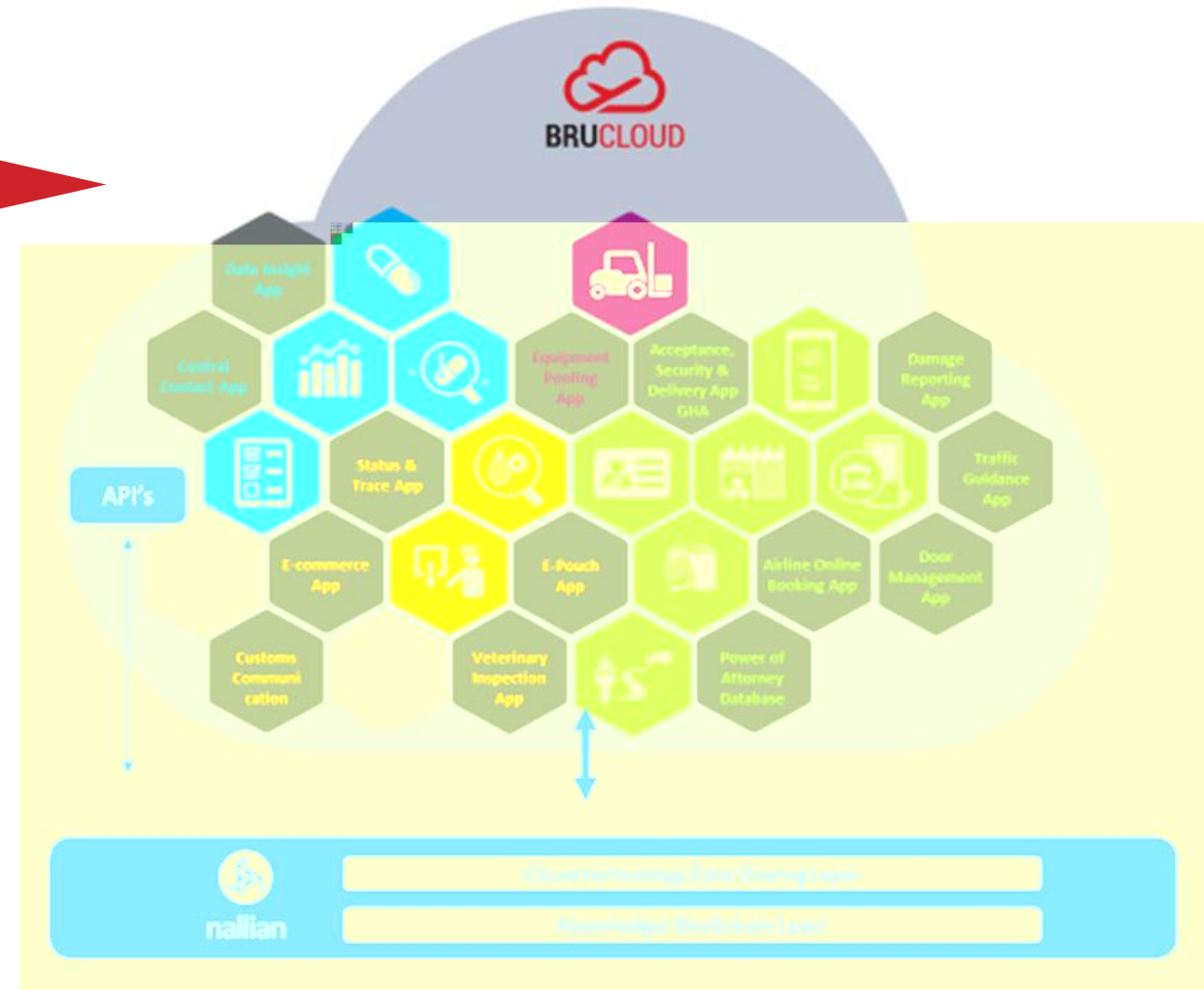
Design BRUcloud for automated data-gathering

Become intelligent node within PI network

Create a BPaaS to offer logistics cloud services



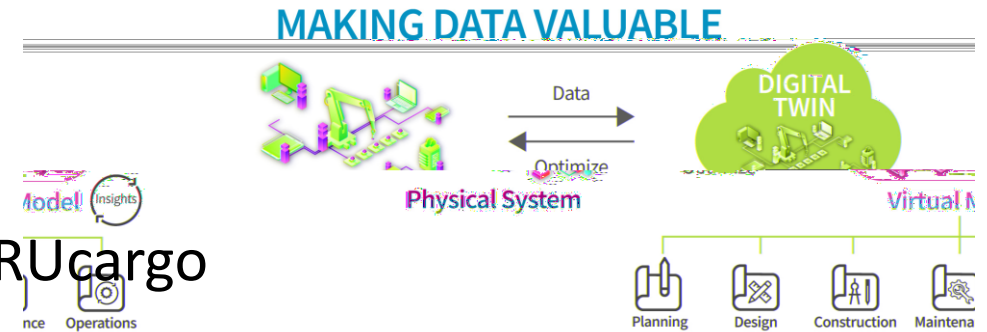
- Broaden scope:
 - New applications
 - New functionalities
- Engage more stakeholders:
 - Current: low acceptance (<15%)
 - Action: DGL Big Bang
 - Target: 100% community on board
100% paperless activities





- Digital Twin:
 - To be build @BRU on the very short term
 - Use available data to improve efficiency BRUcargo
- Artificial Intelligence:
 - Introduce in community by initiating projects/pilots
 - IoT (see next)
 - Self-driving vehicles + 5G
 - Robotisation in warehouses
 - Machine Learning

➔ Link BRUcloud with other data sharing platforms to initiate predictive logistics





- Pilot RFID-scanners:
 - Smart devices 'read' data, send it to BRUcloud and trigger notifications other stakeholders
 - Positively evaluated → Follow-up project with broader scope!
- VR-training:
 - Smart devices to do security checks, dangerous goods checks
 - VR-training
- Next steps:
 - Broaden adoption IoT-technology @BRUcargo
 - Link with other transport modes along the supply chain



Cloud Services

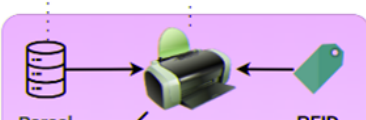


NOTIFICATION

@Dangerous goods

@Pharma 2-8°C

@Pharma 15-25°C



Parcel

INFO

RFID

Printer

TAG

Parcel

Parcel

Parcel

Parcel

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(FWDR)

(GHD)

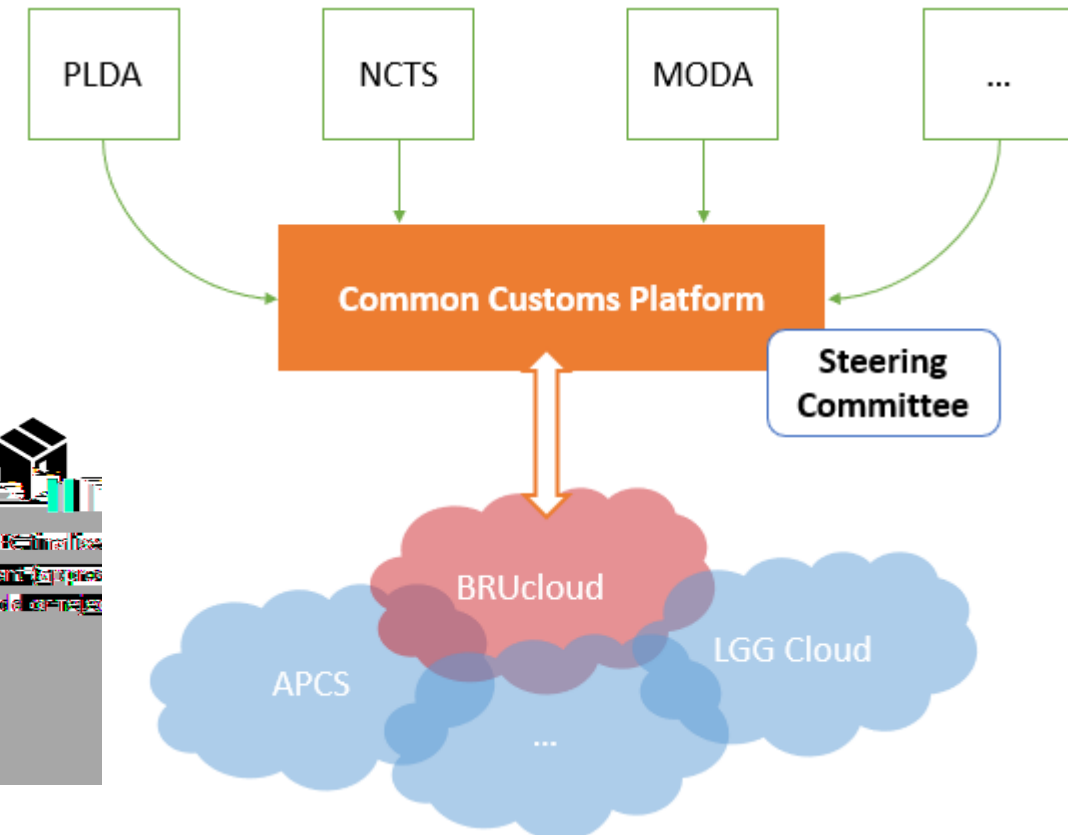
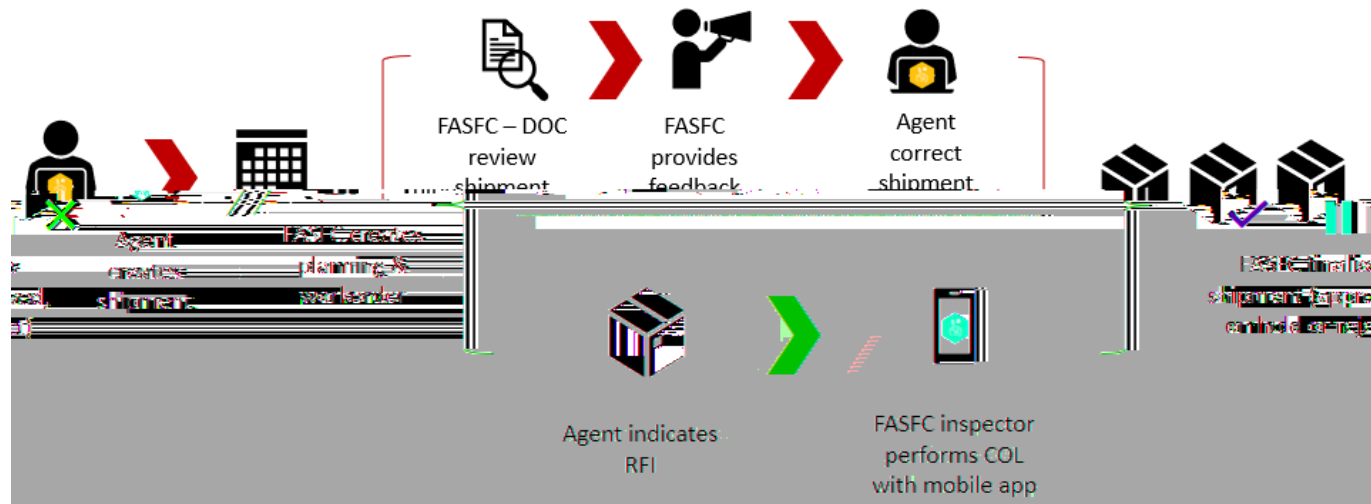
Wachtpost

Tunnel



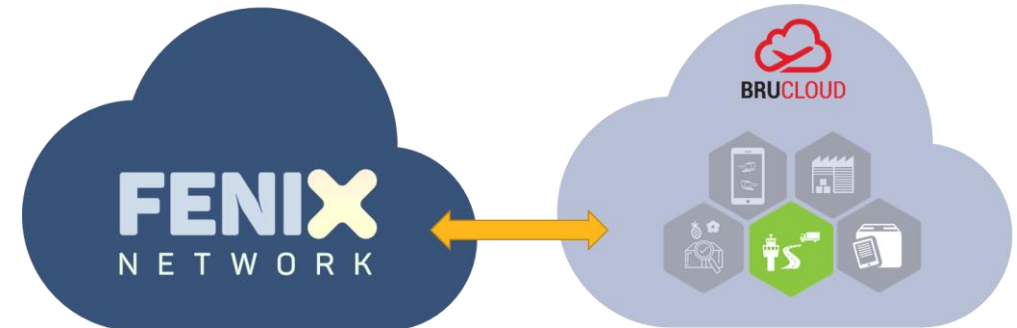
- Customs: Common Customs Platform = 1 point of contact for all communication with customs to increase efficiency
→ Next steps are unclear

- FASFC: PMA via BRUcloud





- FENIX:
 - Integration of the local BRUcloud platform into the FENIX federation
 - First step: RFS
- Other airports:
 - Via FENIX
 - Via direct link between BRUcloud ↔ other data-sharing platform





Strengthen community working

Conclude partnerships with other airports

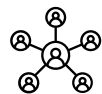
Boost the Booking Application



Encourage operational collaboration

Set up trade lanes & corridors

Make equipment BRUcargo available via neutral partner



Enable freight bundling

Launch synchromodal logistics chain

Develop shared infrastructure



- - ACB as community partner (clusters + steering groups)
 - Attract new members (community engagement)
- - Vertical collaboration
 - Horizontal collaboration
- - H2020 collaboration
 - FENIX
 - Other airports with data-sharing platform (e.g. MIA for pharmaceuticals)
- - Introduce 'sharing' principle @ BRUcargo
 - Equipment, warehouses, staff?



- Coalition of the willing: fully implement (=100%) the DGL applications
 - Represents 75% cargo volumes BRUcargo
 - Ground-handlers + freight forwarders
- Common goals and objectives
 - Be the first fully digitised air cargo community in the world
 - To come to a standardized digital handover and pick up process by end 2021
- MoU = engagement: partners agree to work in a specific way (e.g. all delivery and pick up of cargo via registered slot)



Develop BRUcloud
rulebook

Cover business and
regulatory aspects

Increase
standardization &
harmonization



Set up PI governance
body

Boost sharing principle

Deploy full paperless
processes



Contribute to the
harmonized reference
governance framework

Define common SLA in
an open logistics
framework

Innovative business
models



- - Digital Green Lane Big Bang
 - E-commerce Fast Lane
- - Semantics
- - Why: to allow for easy plug-and-play on BRUcloud & attract new IT-providers
 - To start asap
-
- - Equipment Booking App
 - New business models: neutral entity @BRUcargo?



= joined effort with community → Community input
required

Set-up	Use of applications	Priority service	Complaint management	Non DGL users	Incorrect behaviour
<ul style="list-style-type: none">○ 24/7 capacity (ex shift change)○ Alignment of supply and demand of dock doors○ Fair Slot distribution	<ul style="list-style-type: none">○ Priority service when applications are used○ Move to 100% use (in both apps and shipments) of DGL apps before January 2022	<ul style="list-style-type: none">○ DGL users should always get priority service at the ground handling agent	<ul style="list-style-type: none">○ Procedure when no service can be given○ Escalation point	<ul style="list-style-type: none">○ Discouragement for non- DGL users	<ul style="list-style-type: none">○ Procedure for incorrect behaviour (no shows, late cancels, no service,...)



Optimize existing infrastructure

Open BRUcargo for other transport modes & urban freight delivery

Coordinate sustainability actions BRUcargo



Build intelligent infrastructure (e.g. smart warehouses)

Standardize infrastructure & equipment

Invest in energy infrastructure



Develop BRUcargo 2.0 Architecture

Establish an integrated transport info-structure

Establish the Internet of Energy



- - Automation
 - Different set-up cargo zone (e.g. no free access)
 - Modular loading units
 - Sustainability actions/measures (e.g. electrification)

→ Draft environmental report BRUcargo
(cf. Environmental Report Brussels Airport Company)



- BRUcargo wants to be an innovative and more efficient logistics node
- Airports should be more sustainable and greener
- PI concept could be a game-changer for the industry
- PI roadmap will help ACB to develop the concept further on
 - Already much action is undertaken within the field of digitization and data & community and sharing (e.g. DGL)
 - Infrastructure and governance structure should get more attention
- Convincing all actors along the supply chain remains difficult
 - Change management
 - Engagement
 - Dissemination



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Thank you for your attention!

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