Project Fact Sheet

Stargate within EU Green Deal

CargoRun

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement GA101037053

01 BASIC PROJECT INFORMATION

Project name	CargoRun
Partners involved	ACB with participating BRUcargo freight forwarders, ground handlers and trucking partners.
Implementing airport / site	BRUcargo, Brussels Airport; landside import deliveries between GHAs and freight forwarders.
Period tested	Proof-of-concept done in 2023-2024
Project lead / contact	Project lead: ACB Content owner/reviewer: Nathan Goethals

02 OBJECTIVE

What are we trying to solve or tackle with this project?

The CargoRun project addresses the inefficiency, congestion, and environmental impact of landside cargo movements at BRUcargo. Currently, freight forwarders send individual vehicles to pick up import cargo from ground handling agents, leading to low truck fill rates, excess driving kilometers, and unnecessary emissions. CargoRun tests a Milkrun concept that consolidates import deliveries from a single GHA to multiple freight forwarders using one shared vehicle.

Success criteria

Prove that consolidated import deliveries can reduce trucks and kilometres, improve fill rates and handover time, gain partner support, and identify the cargo volume, coordination and digital tools needed for a viable community-wide service.

03 APPROACH (HOW WE TESTED)

Test set-up & method

A proof-of-concept (PoC) was executed to test the consolidation of general cargo imports from one ground handler to multiple freight forwarders at BRUcargo. The pilot used a single truck and existing communication tools to orchestrate the delivery of import shipments. Performance was systematically benchmarked against traditional, unconsolidated pickup journeys. The setup involved Air Cargo Belgium, participating BRUcargo forwarders, one ground handlers, and trucking partners.

The team measured distance, trucks avoided, fill rate and time, and surveyed participating forwarders about operational value.

Data & measurement

KPIs: The pilot tracked key operational parameters to measure feasibility, including

- Total driven distance (kilometers) and total truck movements saved.
- Vehicle fill rates (%) and total turnaround/handover time per run.
- Qualitative feedback and satisfaction surveys from participating forwarders

Results: 55% fewer kilometres; four fewer trucks per run; fill rates averaged 38% and peaked at 80%; at least 8% time saving. All participating forwarders saw high value.

Risks & mitigations

Risks included limited partner data, temporary systems, low volumes, incomplete GHA tallying, restricted opening hours, manual handovers, no real-time track-and-trace and tight coordination needs.

Mitigation requires attracting more partners to increase the volume, digital integration with internal systems, implement flexible schedules to align deliveries and priority handling agreements.

Limitations

The PoC covered few forwarders, selected warehouses and general non-outsized imports. Low volume kept average fill at 38%, below the 45% local baseline, although 80% was reached with several deliveries. Initial loading was excluded from time savings.

The PoC scope was limited to import shipments, only general cargo, a restricted number of forwarders and only one ground handling agent.

04 RESULTS & IMPACT

Key results

The CargoRun trial successfully proved that consolidated landside transport generates significant environmental and operational efficiency gains:

- Compared to individual forwarder collections, the consolidated Milkrun reduced total driven kilometers by 55% and avoided an average of 4 trucks per run
- At least 8% time saving was measured, excluding initial loading.
- Fill rates averaged 38% because volumes were low, but reached 80% when serving enough forwarders.
- All participants saw high value and greater potential at higher volumes.

Conclusion: Wider rollout needs more partners, synchronized tallying, real-time visibility and digital handovers.



05 RATINGS (QUICK ASSESSMENT)

Deployment Approach

How standardised is the solution: can it be deployed off the shelf, or does it require extensive customization?

Off The Shelf — Custom-Built

Investment Magnitude

From low-cost deployment to major investment.

Low Investment (less than €10k) — High Investment (more than €15mio)

OPEX ☐ ☐ CAPEX

Sector Readiness

From non-existing or emerging standards, regulations, and certification pathways to fully established industry practices.

Emerging Framework — Established Framework

Innovation Maturity

How does the solution score in terms of maturity, from low TRL experimental/pilot-stage to high TRL market-ready.

Experimental — Market-Ready

Operational Impact

Does the innovation deliver targeted improvements or rather drastically transform processes and/or operations.

Incremental Improvement — Transformational Change

Notes

For other cargo communities, consolidation offers clear environmental and operational value when shipment density is sufficient. Success requires predictable tallying, committed partners, priority access at facilities and digital visibility of cargo status and exceptions.

06 NEXT STEPS / RECOMMENDATION

Recommendation

Scale through an extended pilot: broaden participation and cargo volume while adding track-and-trace and digital handover processes.

Next steps

1) Recruit more forwarders, handlers and trucking partners.

2) Target 80%+ fill through denser routes.

3) Add track-and-trace and digital exception reporting via BRUcloud.

4) Align schedules with tallying and opening hours and reserve priority docks/lanes.