LL #1 CaaS Asia Gateway for perishables

FACTSHEET
28 SEPTEMBER 2022

GENERAL (Business case)

1. **Objectives**
   - Transport and cargo tracking
   - Automated border crossing corridor for enhanced transparency, timeliness and Customs compliance
   - Optimized asset management
   - Proof of concept of electric seal locks/eSeals (incl. ETD/ETA capabilities)
   - Integration with IATA OneRecord capabilities

2. **Main emphasis**

Visibility of transport data on driver, vehicle, load and location for Norwegian and Finnish Customs First pilots will be done in salmon deliveries from Norway to Helsinki/Vantaa airport. Main highlight is IoT device-based cargo tracking and data sharing between supply chain stakeholders. The eSeal concept will be also tested in this living lab. The active monitoring of movement (transportation/load) is identified on MRN (Movement Reference Number) level and allows better security profiling and monitoring before and after the actual border crossing event. IATA One Record is data sharing model that will be tested and integrated in this living lab.

3. **Challenges**
   - Multi actor EU border crossing in a multimodal, tightly scheduled supply chain remedying the lack of transparency.
   - Exploring new ways of working (MRN, IoT)), e.g. general monitoring can be done automatically during the transportation and inspections or during driver's statutory break.
   - Proof the actual reduction of risk of delays, which is mandatory for salmon and pharma shipments.

4. **Transport mode**

Road, Air

5. EU Map Focus

Finland + Norway; which on the national level means: E8 road, which is linked to North Sea – Baltic corridor and Scandinavian Mediterranean corridor.

6. Geographical coverage

North Norway and Finland

7. Actors

- Finnair Cargo,
- Customs Finland
- Customs Norway)
- Pajalanmäen kuljetus,
- Tangen Logistics,
- Fish farm (Norway)
- Custom's CaaS station IT service provider Caverion
- CaaS station VR service provider MarshallAI

8. Forecast scaling outside LL

The automated border crossing could be interesting solution on EU borders and other international borders. Automated border crossing is also mentioned on many roadmaps of national customs. Case Brexit could also be very applicable for similar solution.

B. TECHNICAL SETTING

9. ICT vs physical

Vedia will utilize its Vedia Drive application for cargo tracking and data sharing, which shares information for Customs. The application shares information keys, such as MRN number and vehicle register plates, which are linked to one event. In real world pilots - where truck will drive from Norway to Finland - eSeal will be linked to Vedia Drive, which will be connected to Vedia CaaS cloud solution. Vedia CaaS is linked to customs IT-systems, which will be developed in parallel by customs. Vedia CaaS solution is used to connect cargo information from the site to the FEDeRATED pilot infrastructure. See figure below.

CaaS Asia Gateway
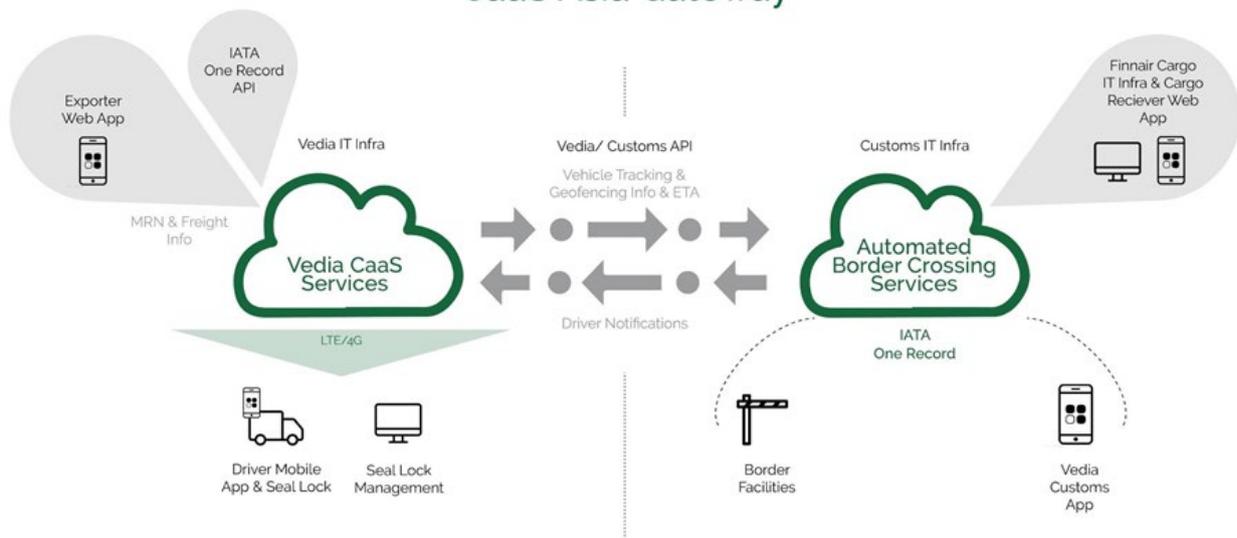
The CaaS Asia gateway living lab is built on top of IATA's One Record architecture. The CaaS server is run in DigitalOcean hosted cloud setup that uses Docker containers that are orchestrated using Kubernetes. Event data is generated using Vedia-built Android application that connects to the CaaS server and different eSeal devices. The Android app communicates with the backend using Vedia's own API that uses simple JSON formatted messages. The data created by the apps is then stored using the One Record format. This data can be accessed by different parties of the shipment. The CaaS server is connected via custom API to Finnish customs' own service that monitors each shipment and determines whether or not the shipment can pass without inspection.

This Living Lab deals with the following FEDeRATED global features:

- Language
- Access
- Findability
- Identity

10. DTLF implementation option:

A. Peer-to-Peer (P2P)
B. Single Platform

C. ORGANISATIONAL ASPECTS

11. Success factors

- Number of public organisations engaged
- Number of pilots executed in living lab

- Estimated time saving achieved with new automated border crossing solution
- Meaningfulness of IoT based cargo tracking for business in scale of 0-4
- Meaningfulness of IoT based cargo tracking for authorities in scale of 0-4
- Number of transferred shipments / tons in pilots

12. Risks

- PPP collaboration and highly controlled use case, which might cause delays.
- Reluctance of stakeholders to participate in pilots.
- Business case and potential financial unprofitability.
- Transition from pilot to operational phase
- COVID19 impacts to logistics

13. Timing

LL#01	2019				2020				2021				2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Preparations	▬	▬	▬	▬																
Planning and scoping				▬	▬	▬														
Stakeholder engagement		▬	▬	▬																
LL infrastructure development				▬	▬	▬	▬	▬												
Testing & piloting								▬	▬	▬	▬	▬	▬	▬	▬	▬				
Iteration & process analysis									▬	▬	▬	▬	▬	▬	▬	▬				
Operational trials								▬	▬	▬	▬	▬	▬	▬	▬	▬				
Feedback & scaling									▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬

14. Contact

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