Special Interest Session 23

# Memo for demo: H2020 demonstrating automated transport


## Anne Larribe

Director, Systems and Validation
**EasyMile**
**France and global**


Toulouse 22

# AWARD

Scaling autonomous logistics

**ITS Toulouse 2022**

AWARD has received funding from the European Union's Horizon 2020 research and innovation program under Grant Agreement No 101006817

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- Support us !



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# H2020 context

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# H2020 objectives – Innovation for the Industry

1. Contribution to the **accelerated deployment of innovative connected and automated freight transport solutions in Europe**

1. Contribution to the **increase of the overall safety and efficiency of freight operations** of individual trucks or fleets in confined areas and in mixed traffic **through innovative connected and automated driving systems**

1. Actions will show the **uptake of new business models**

1. Actions will seek to reach a **total cost reduction of operations and logistics and supply chain**, leading to improved competitiveness of the European transport and logistics industry

*"Our focus is to develop, test and demonstrate connected and **automated** systems for **heavy commercial vehicles** in **real logistics operations**."*



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# AWARD response

**H2020 framework**

- **2018-2020** : Digitizing and Transforming European Industry and Services: Automated Road Transport
- **DT-ART-05-2020** : Efficient and safe connected and automated heavy-duty vehicles in real logistics operations

**AWARD :** All Weather Autonomous Real logistics operations and Demonstrations
**Project Coordinator :** EasyMile
**Partners :** 29
**Timeline of the project :** 1st of January 2021 – 31st of December 2023



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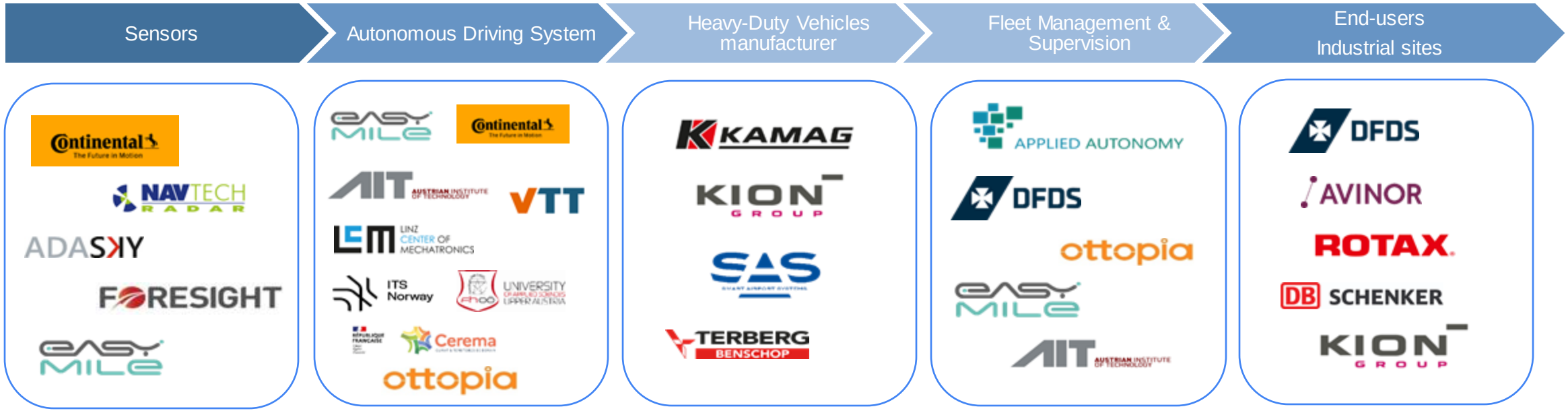
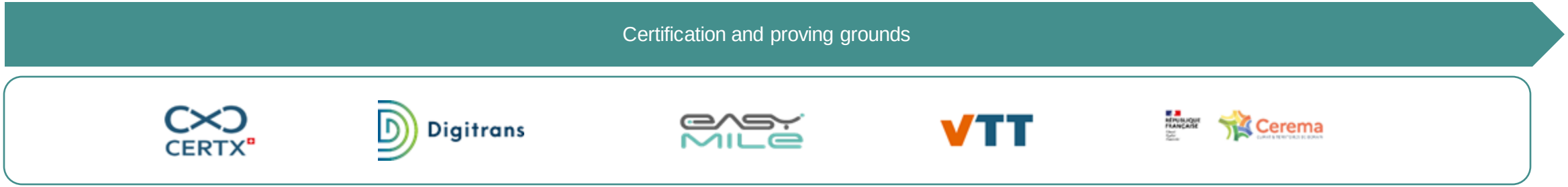
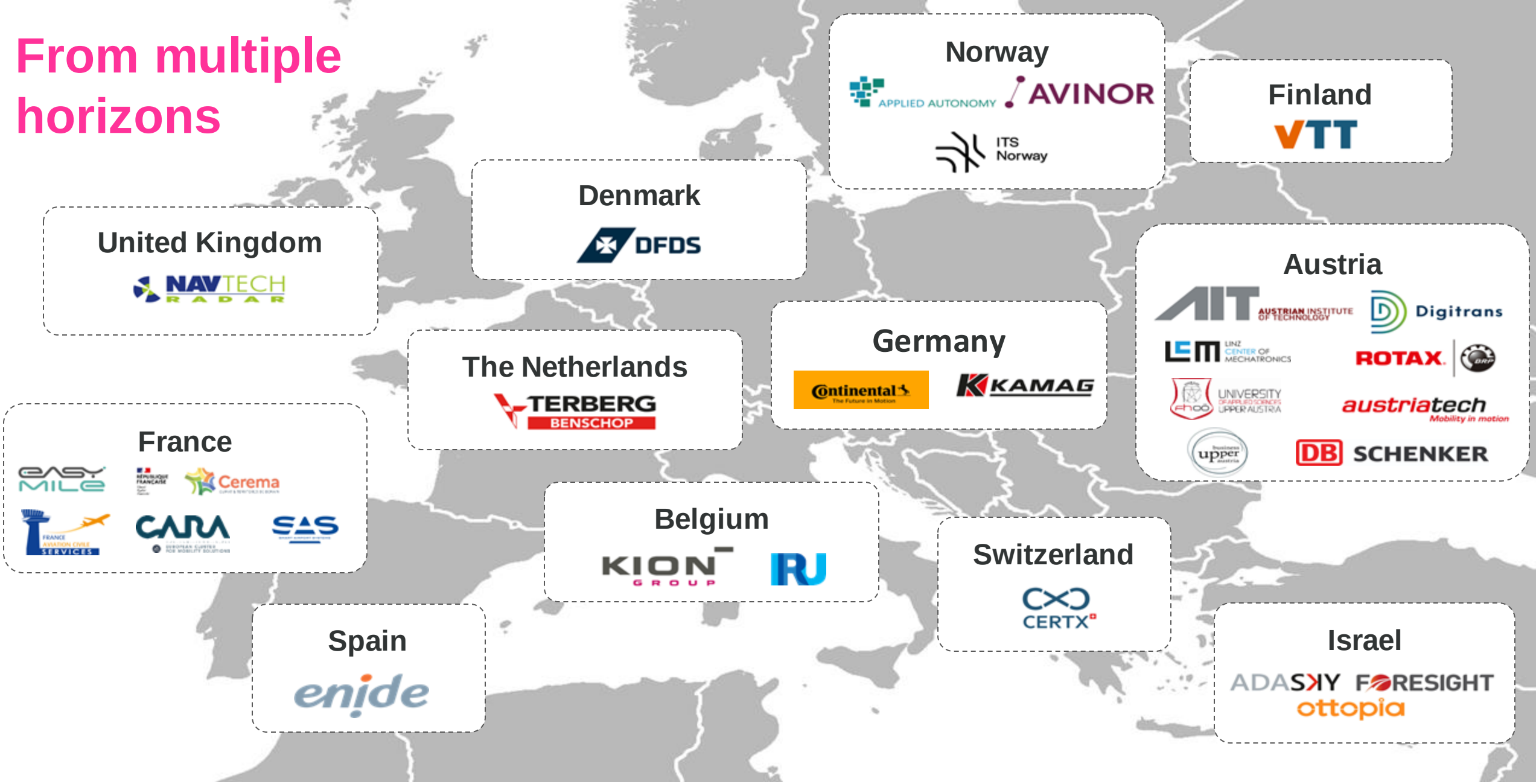
# Complementary-skilled Consortium




# From multiple horizons



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# AWARD approach

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# Project ambitions

## Ambition 1

AWARD ADS architecture **offers a unique set of sensors that enables 24/7 availability** (night and day, good or bad weather conditions), **within an extended ODD**

*ODD = Operational Design Domain*

## Ambition 2

By addressing 24/7 availability, the fully automated HDV will be **deployed over key pilot projects that are highly scalable and replicable** over warehouses, factories, airports and ports, **in mixed traffic in confined areas and on public roads**

## Ambition 3

The new **fleet management system** will integrate **data from vehicles, logistics systems and the road infrastructure**, coordinating exchanges with different data providers to ensure economic viability of data-related business models, **while providing high-reliable and secured tool that optimizes logistics flows and ensures safety for other road users**.



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# Global approach

## Development of the ADS

Able to **handle adverse environmental conditions** such as heavy rain, snowfall, fog

Targeting compliance with **ISO 26262** and taking into consideration **SOTIF recommendations**

Integrating **multiple sensor modalities and an embedded teleoperation system to address 24/7 availability**

**Optimized fleet management & supervision system** for logistics use cases

## Integration into HDV

KION

KAMAG

TLD

TERBERG

## Demonstrations

Industrial autonomous loading & unloading operations

Hub to hub autonomous logistics on public roads

Airport autonomous ground support equipment

Port Trailer autonomous transfer operations



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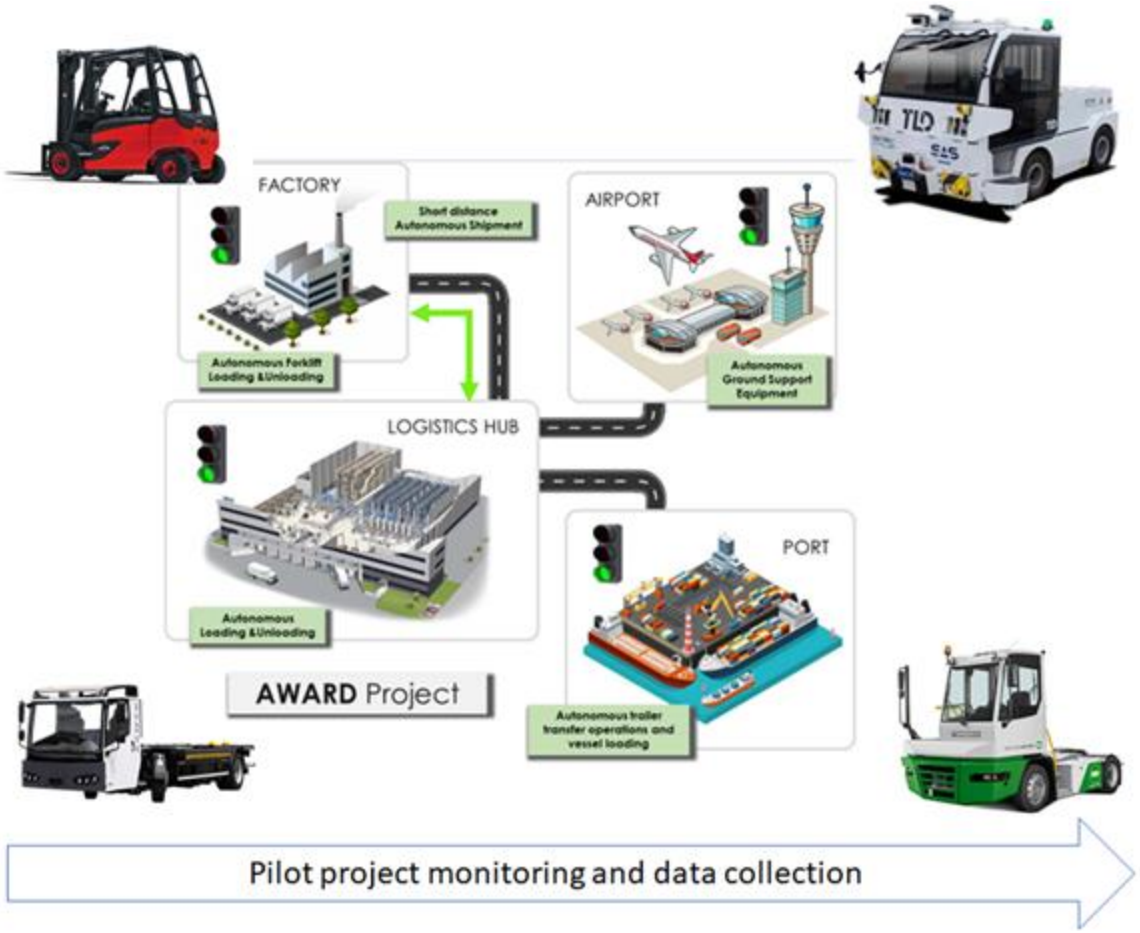
# WP6 Autonomous driving demonstrations in real logistics operations

## Objectives



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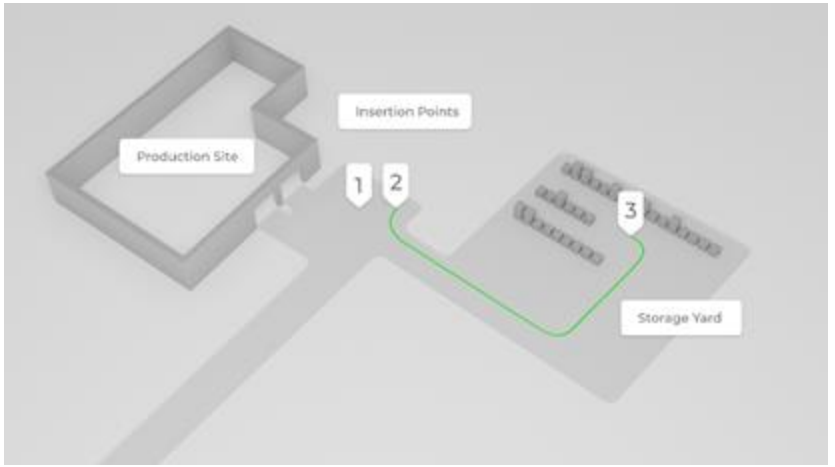
# *Use Case 1*: Autonomous loading & unloading forklift operations




## Site

Linde Aschaffeburg Material handling

*Private site*

## Objective

To demonstrate gitter boxes transport and yarding on Linde Aschaffenburg site, using an autonomous counter-balanced forklift vehicle.



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# *Use Case 2*: Hub-to-hub shuttle service from warehouse/production site to logistics hubs

## Site

Engine Factory of BRP-Rotax

Logistic Hub of DB Schenker

*Public & private site*


## Objective

To demonstrate highly automated, continuous, hub-to-hub freight transportation between both sites, which are connected via public side roads, public crossing areas and a public main road.



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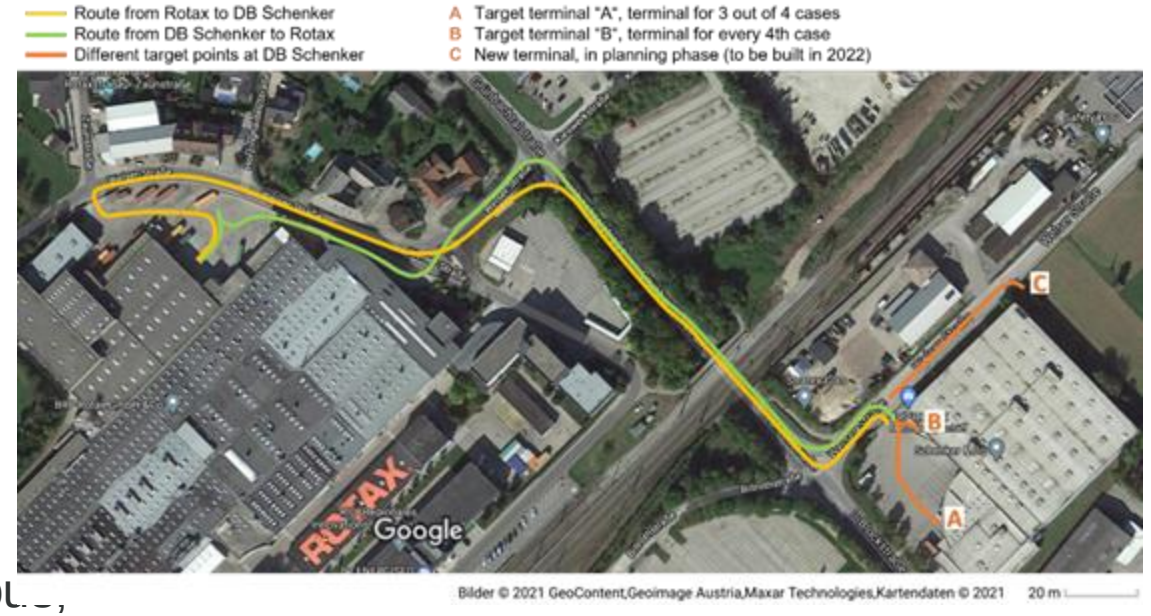


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# *Use Case 3*: Automated baggage tractor on airside in Avinor OSL Gardermoen airport

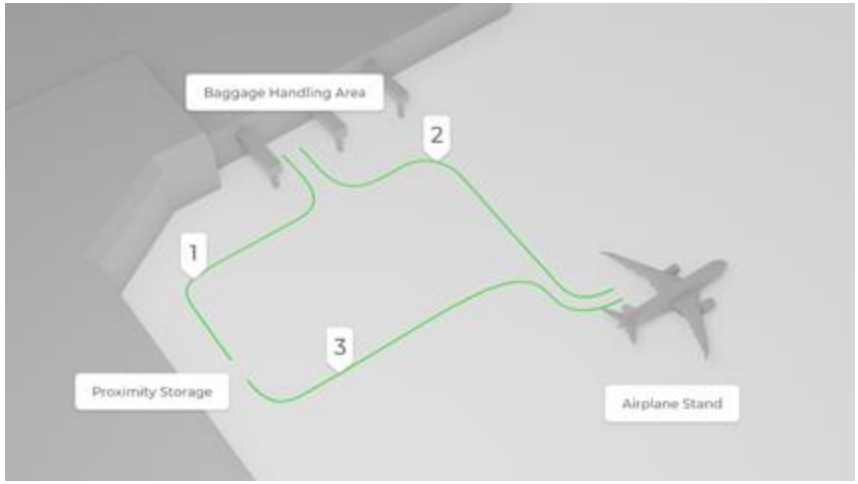
## Site

OSL Gardermoen aiport

*Private site*

## Objective

To demonstrate automated baggage tractor transportation under harsh-weather conditions from proximity storage to the makeup area, and from the makeup area to the aircraft stand.



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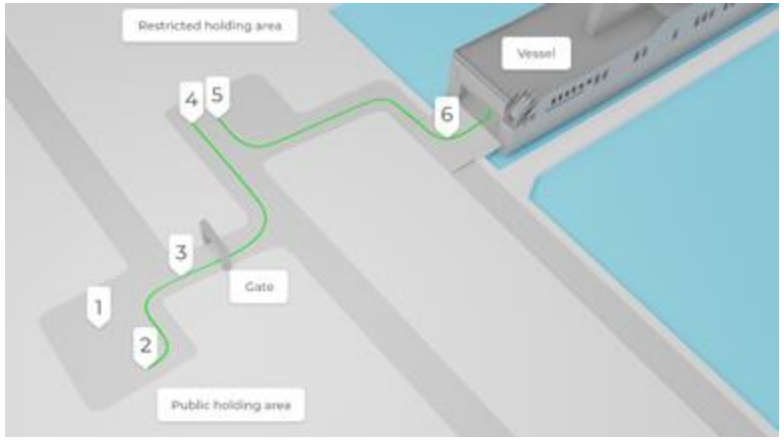
# *Use Case 4*: Container transfer operations and automated boat loading in Rotterdam port

## Site

Rotterdam port terminal

*Restricted site*




## Objective

To demonstrate and validate AWARD technology on a busy roll-in/roll-off terminal in Rotterdam (NL).

The objective is to integrate automated trailer transfer with DFDS terminal systems and operate in a live environment with other vehicles and people.

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# *Use Case 4*: Container transfer operations and automated boat loading in Rotterdam port

## Site

Rotterdam port terminal

*Restricted site*

## Objective

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# Thank you!

**Anne Larribe** – anne.larribe@easymile.com

31/05/2022

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30 May - 1 June 2022

# Thank you!

# AWARD

## Scaling autonomous logistics

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