

AWARD project

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Overall Project Presentation

AWARD Overview

AWARD : All Weather Autonomous Real logistics operations and Demonstrations

Project Coordinator : EasyMile

Budget : € 26M

Partners : 29



4 real conditions demonstrations

Development of the system

- Able to handle adverse environmental conditions
- Targeting compliance with ISO 26262 and taking into consideration SOTIF recommendations
- Integrating an embedded teleoperation system to address 24/7 availability and multiple sensor modalities:



- Optimized fleet management & supervision system for logistics use cases



Integration into HDV and validation



Demonstrations

Port Trailer autonomous transfer operations



Hub to hub autonomous logistics on public roads



Airport autonomous ground support equipment



Autonomous loading and unloading operations



Results Presentation

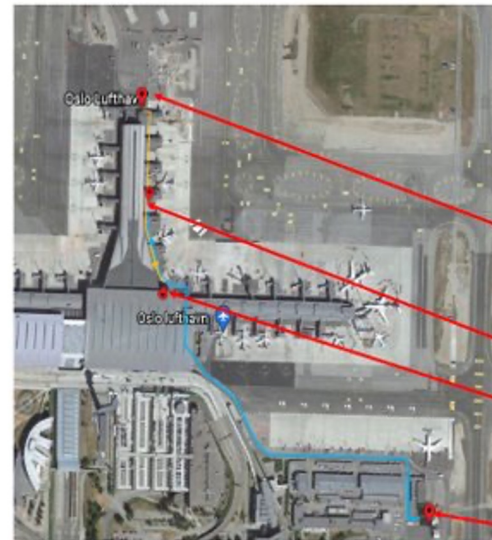
On the Tarmac (Airport in Oslo)

- **Airport conditions simulation in test track**
 - 10 scenarios tested (passable objects, vehicle overtaken, intersection, etc.)
 - Different obstacles: car, pedestrian, barriers, suitcase
 - Simulation of rain until 100mm/h
- **Trailers management in the airport**
 - Mission described below successful in normal conditions
 - Tests in snow condition on going



SAS

Route Description



- Use Case:
 - TractEasy waiting mission point
 - Go manually to pick up empty dollies along P-North, then go to Start Auto Mission point
 - Bring them autonomously to containers storage
 - Go back autonomously to End Auto Mission point
 - Drive manually to TractEasy waiting Mission point

TractEasy

Waiting Mission point

End Auto Mission Station

Start Auto Mission Station

Containers storage

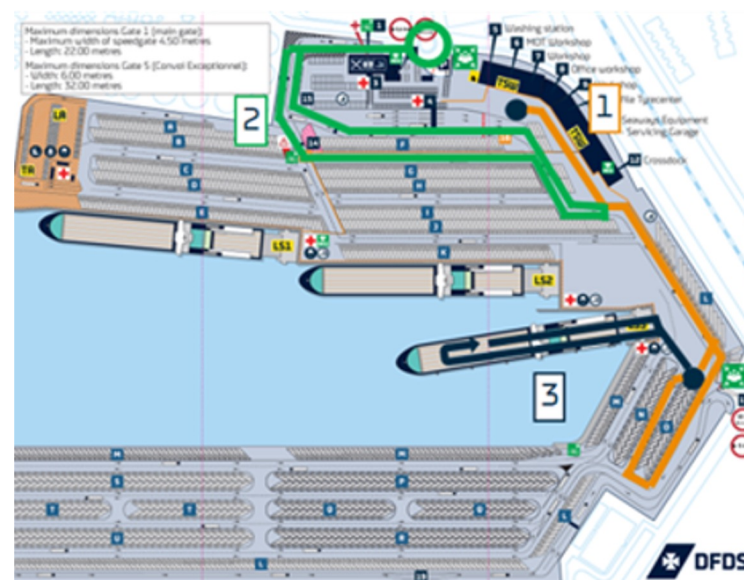
On the Road (Gunskirchen in Austria)

- **Logistics maneuvers simulation in test track**
 - 8 scenarios tested (passable objects, vehicle overtaken, running backwards, etc.)
 - Different obstacles: car, pedestrian, barriers, pallets
 - Simulation of rain until 100mm/h
- **Swap body container displacement from point A to B and B to A driving through public road equipped with traffic lights (V2I)**
 - Route described below in auto mode with different levels of mixed traffic management (none, low, normal)
 - 2 month of operations, successful under normal and rainy conditions



At the Port (Vlaardingen in Netherlands)

- Usual port situations simulation in test track
 - 9 scenarios tested (passable objects, vehicle overtaken, roundabout, etc.)
 - Different obstacles: car, pedestrian, barriers, pallets
 - Simulation of rain until 100mm/h
- Trailer management in the port
 - 3 phases: trailer management in the port, going in and out the site to communicate with barriers system, trailer management in a vessel
 - High challenge to run in auto mode in a vessel ⇒ successful



At the Port (Vlaardingen in Netherlands)



Pallets (un)loading (AIT in Seibersdorf)

- **Usual port situations simulation in test track**
 - 9 scenarios tested (passable objects, vehicle overtaken, roundabout, etc.)
 - Different obstacles: car, pedestrian, barriers, pallets
 - Simulation of rain until 100mm/h
- **Pallets management in arbitrary area**
 - Tests on going





Mid to Long Term Expected Impacts of the Project

5 Key Exploitable Results (KER) & Impacts of the Project

| | | |
|----|---|---|
| 01 | Definition of end-user's requirements | <ul style="list-style-type: none">• Multiple pilots enable each members to understand better customer use-cases and constraints |
| 02 | Safe and scalable autonomous driving system validated for harsh weather conditions | <ul style="list-style-type: none">• EZTow operates no-op on the 3 continents• EZTug solution has been selected by World leading transport operator• Additional product dev. & commercialization plan are still under discussions for the other platform |
| 03 | Zero-Emission Driverless Autonomous Heavy-Duty Vehicles certified for extended ODDs | <ul style="list-style-type: none">• EZTow is now CE Certified in an extended ODD• EZTug plan to be certified in 2025 in at least same ODD in term of harsh weather.• Roadmap is clarified to continue to improve AD in even harsher weather conditions. |
| 04 | Demonstrations of fully available automated HDV performing 24/7 for real logistics operations | <ul style="list-style-type: none">• EZTow operates in 3 shifts in Daimler, BMW plants• 5 shift operations are planned for EZTug in 2025 |
| 05 | Policy recommendations regarding the regulatory framework | <ul style="list-style-type: none">• EasyMile safety report presented at TOC Rotterdam• DGAC safety analysis method for airports ⇒ recommendations for AV and their operations |

THANK YOU



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