

# Mobilitet 2023

## MODI - hvem, hva, hvor og

28. mars 2023  
hvorfor?  
Trond Hovland



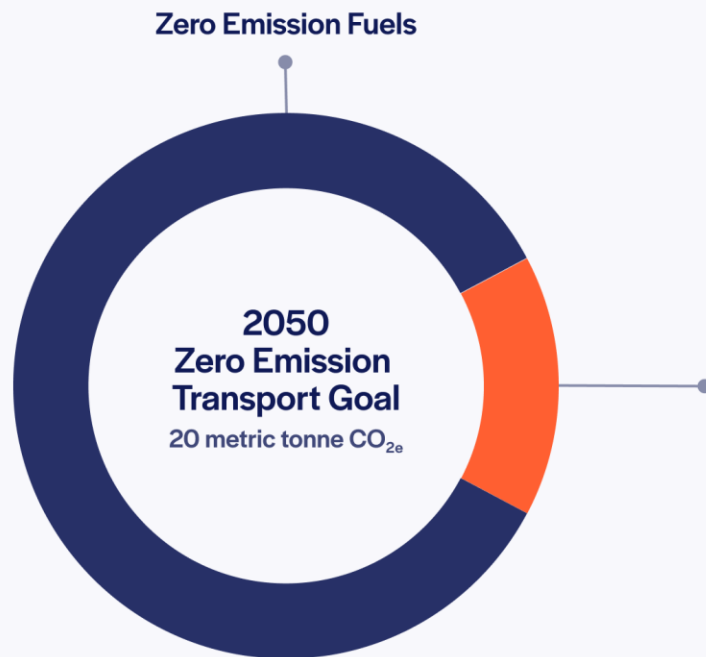
80+ members



About 100 ITS associations globally







## ITS sitt bidrag:

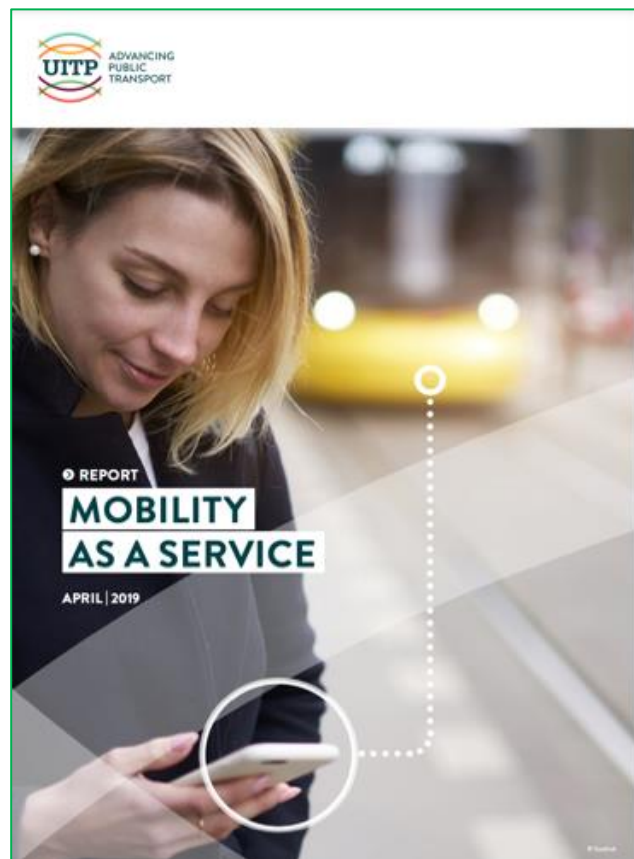
- Bedre utnyttelse av hvert kjøretøy
- Bedre utnyttelse av infrastrukturen
- Optimalisering av transportoperasjoner
- Integrering av transportformer
- Automatisering av kjøretøy

## Bidrar til:

- Færre kjøretøy
- Mindre utslipp
- Bedre utnyttelse av land
- Færre ulykker



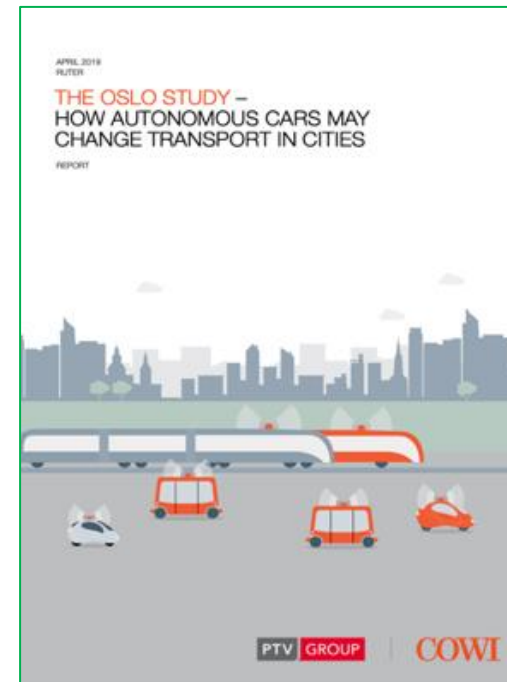
# Mobilitetstjenester: Trender, regulering og drivere



EUs ITS Direktivet (neste versjon) om å utvikle robuste og bærekraftige reisetjenester:

- Bærekraftig brukersentrert mobilitet basert på en MaaS
- Nasjonalt tilgangspunkt (NAP) er ikke nok ...
- Mer datadeling fra alle transportoperatører blir lovfestet
- Tredjepartsaktører kan videreselge billetter til offentlig transport

# Automatisering: Trender, regulering og drivere



cruise





# Early attempts with automated vehicles

In 1925, an automated and radio-controlled vehicle by Francis Houdina in the United States.

In the 1980s, **Navlab** tested a series of autonomous vehicles which could navigate in traffic.

In 2004, the **DARPA Challenge**: autonomous vehicles to navigate a desert path. None of the vehicles completed the race.

In 2008, **Google** started developing autonomous vehicles and has since become a leader in the industry.

**CityMobil2**: An EU project that tested automated shuttles in several European cities

In Norway, from **2015** onwards, there have been numerous tests with shuttles and, lately, cars and buses.



# ITS Norway lager møteplasser for å få i gang aktivitet, ofte prosjekter.

## Kravene til prosjekter er :

- Barrieresenkende
- Helst ha lavere TRL
- Krever en nøytral aktør

## Aktuelle roller:

- Disseminering og seminarer
- Tilgang til nettverk
- Eierskap og administrasjon

## Tematiske områder:

- Industrialisering
- Mobilitet
- Automatisering



# Finansiering av prosjekter



**Forskningsrådet**  
The Research Council of Norway



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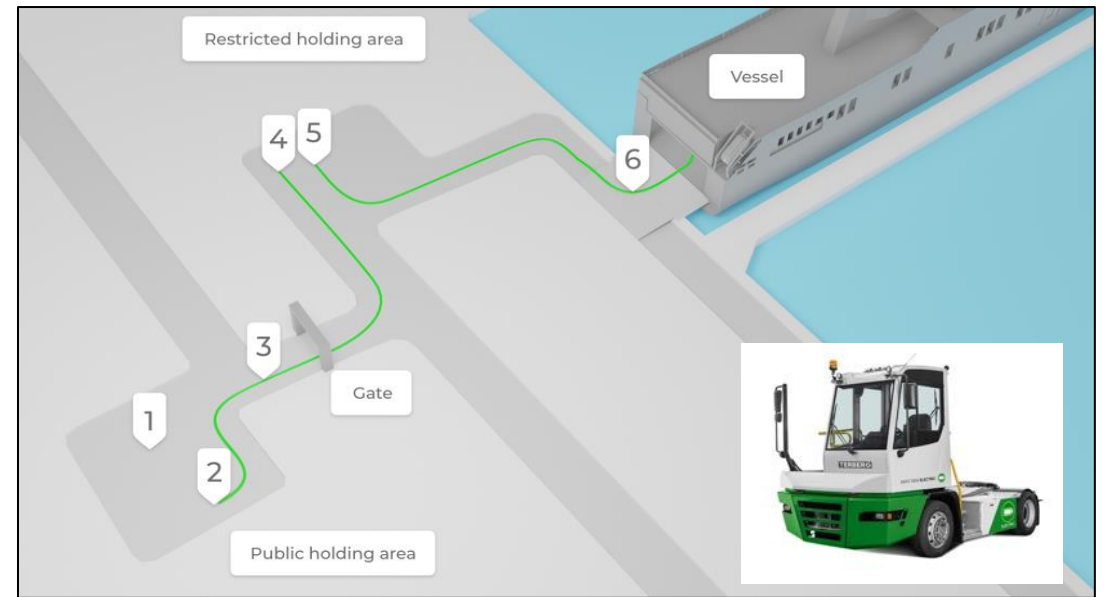
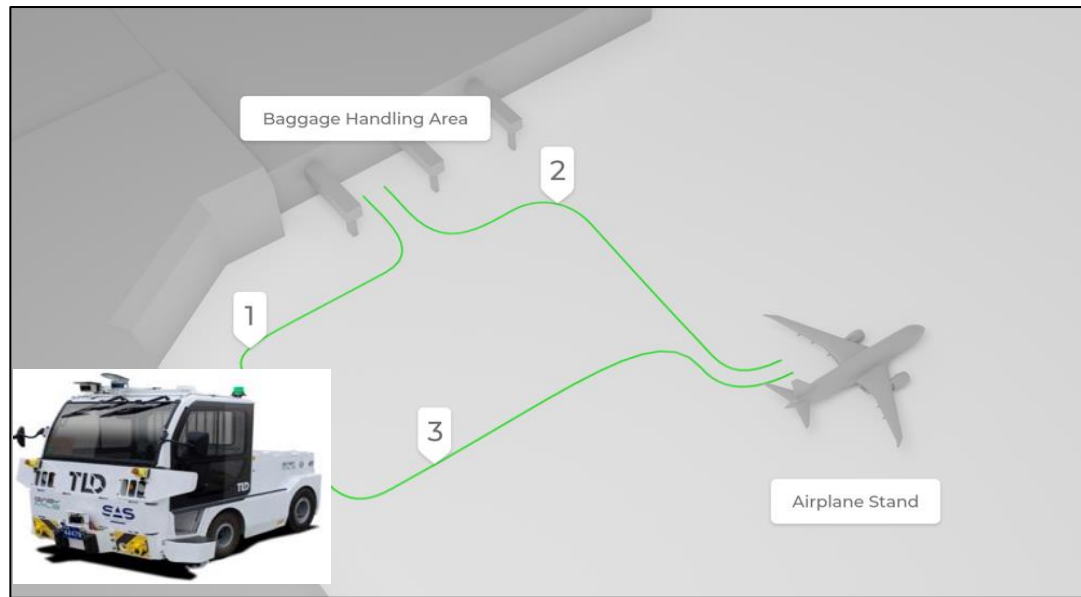
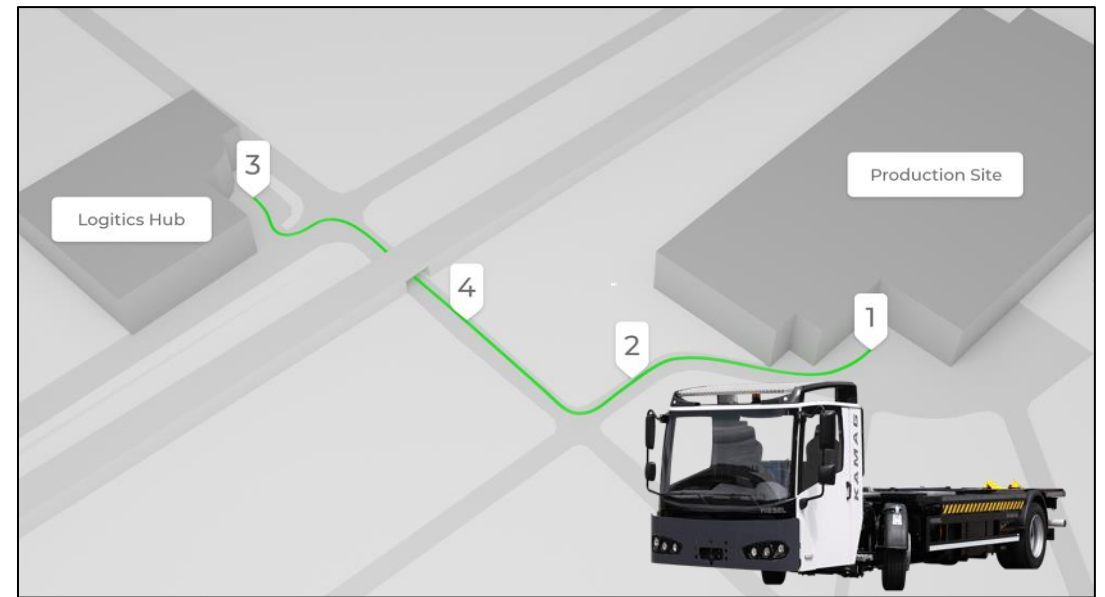
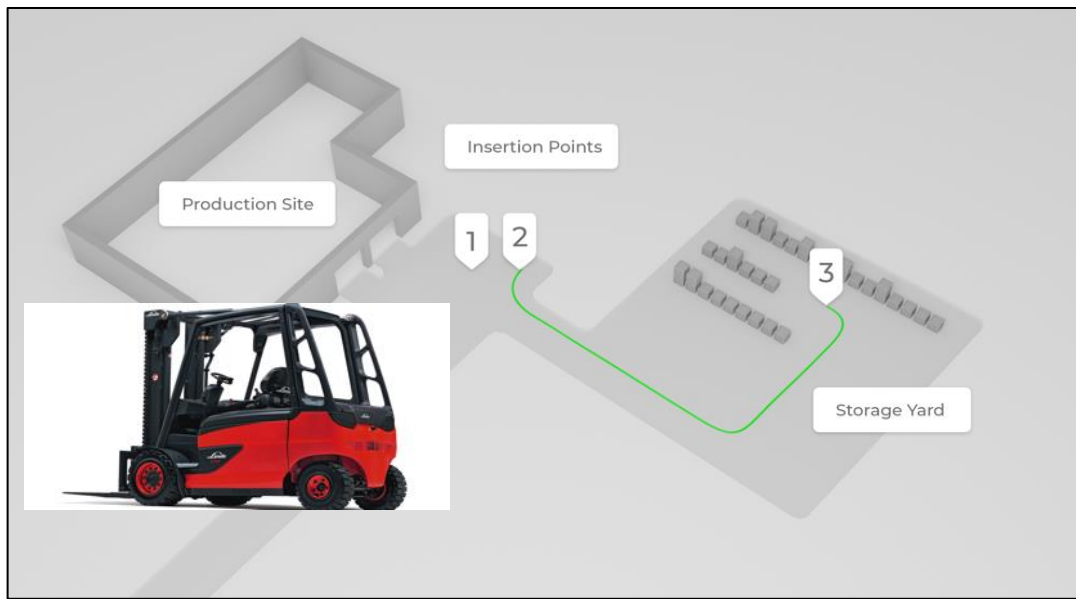
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the European Union

## Prosjekter

# MODI



Navn prosjekt	Finansiering	ITS Norways rolle
NOMAD	NI	Eier og koordinator
TrustMe	NFR	Partner
Spot-On	NFR	Underleverandør
SIITS	NFR	Underleverandør
ITS Horizon	NFR	Eier og koordinator
MaaSEKOPP	NFR	Underleverandør
ISTS	NFR	Partner





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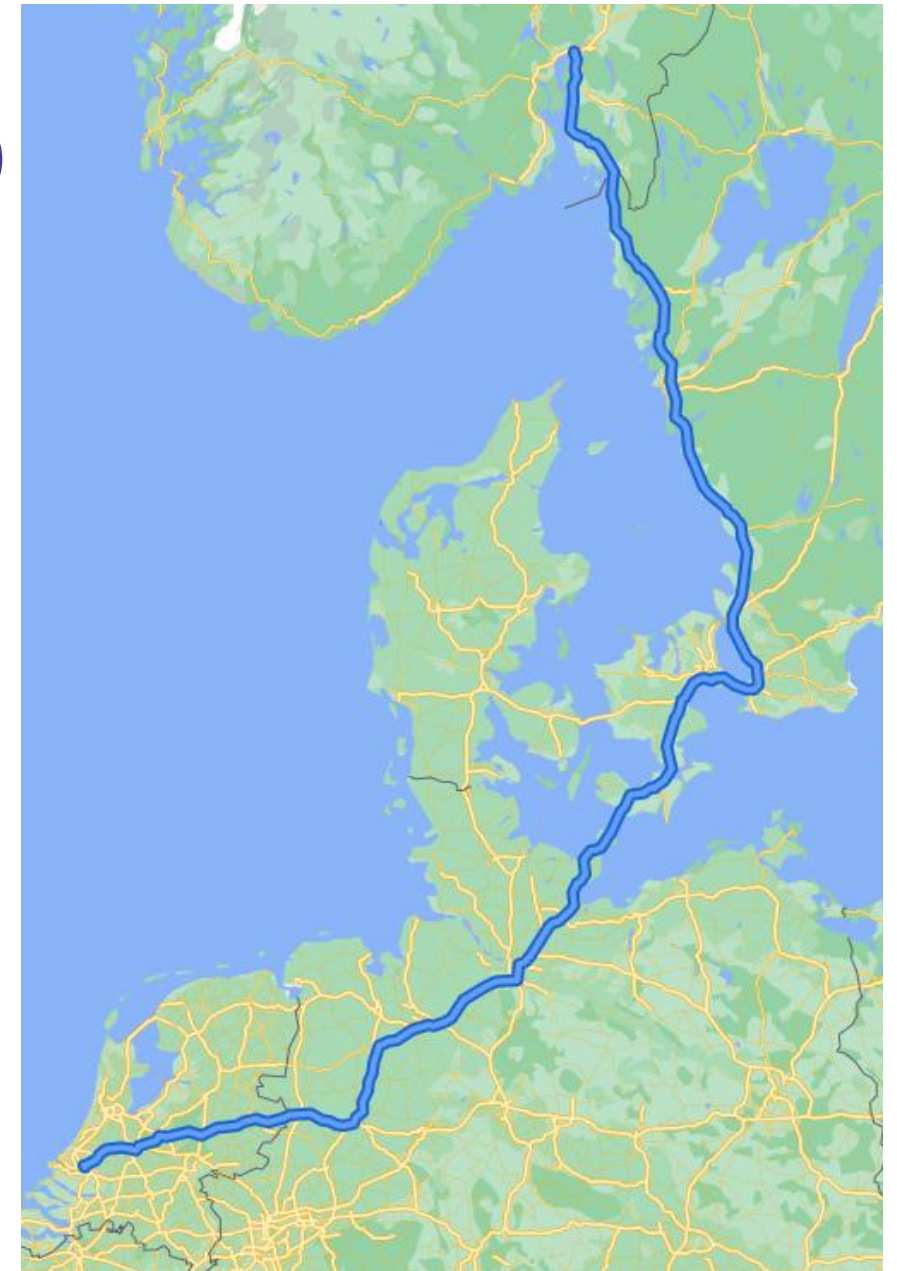
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# The ambition of the MODI Consortium (1)

**Logistic** corridor from Rotterdam to Oslo (Port to Port)

Identify and largely resolve barriers on this corridor, in **confined areas** and on **public roads**



# The ambition of the MODI Consortium (2)

## Accelerate the introduction of CCAM solutions to improve logistic chains significantly

- The MODI project aims to **accelerate the adoption of highly automated freight vehicles through demonstrations** and by **overcoming barriers** to the **rollout of automated transport systems and solutions in logistics**.
- MODI will demonstrate automated heavy-haul vehicle use cases on the logistics corridor from Rotterdam in the Netherlands to Moss in Norway, crossing four national borders and demonstrating terminal operations at four different harbours and terminals.
- **Automated transport will significantly contribute to improving European transport and logistic chains.** The MOD initiative will contribute to making substantial steps toward identifying and resolving barriers preventing this from coming true.

# Objectives

0.1

- **Implement the latest technology and overcome major CCAM deployment barriers for logistics by demonstrating business-oriented and well-integrated CCAM systems for use cases (UCs) along a transport corridor and between hubs.**

0.2

- **Define recommendations for adaptations of supporting infrastructure, vehicle regulations and standards to enable broader deployment of CCAM, speeding up the introduction of CCAM vehicles and recommendations for further (e.g., large scale) piloting.**

0.3

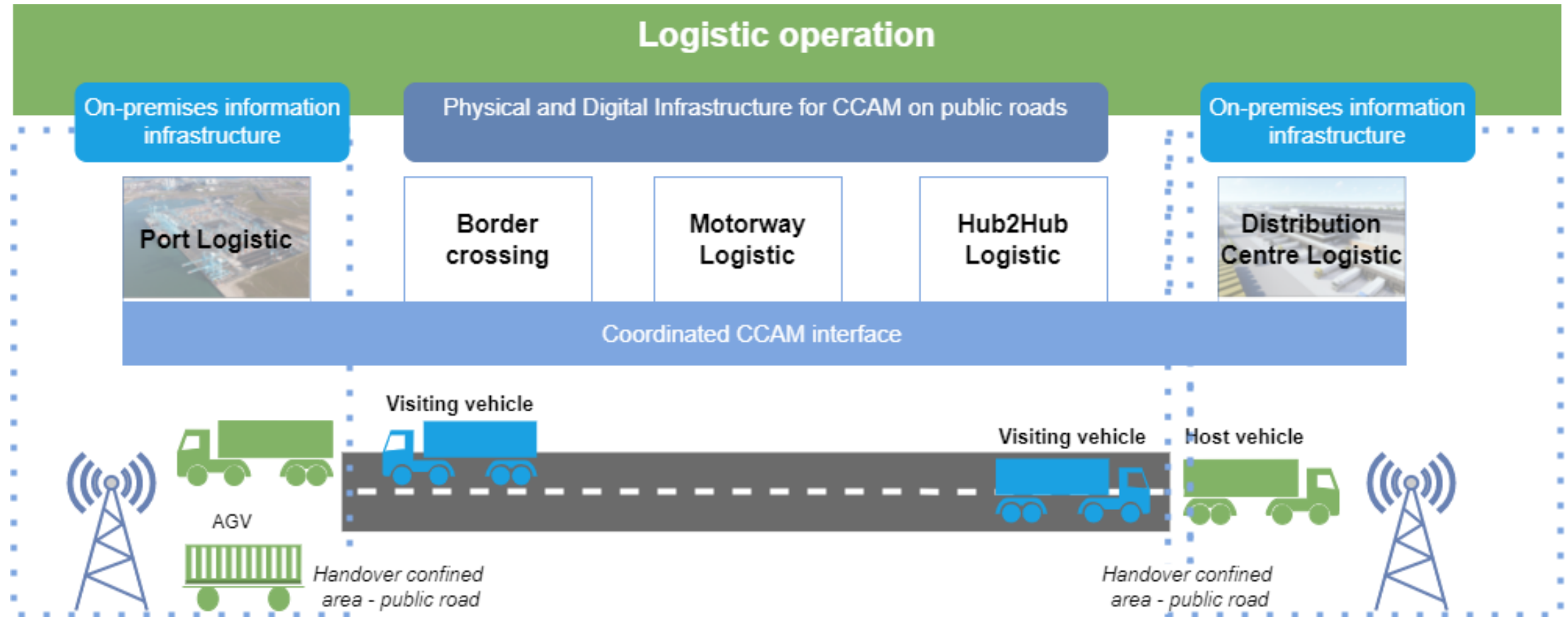
- **Demonstrate business models and partnerships for the application of CCAM vehicles in logistics.**

0.4

- **Perform technical & socio-economic impact assessments and communicate them in the context of the best practices of the MODI L4 CCAM solutions and systems for real-world conditions.**



# Technical Concept



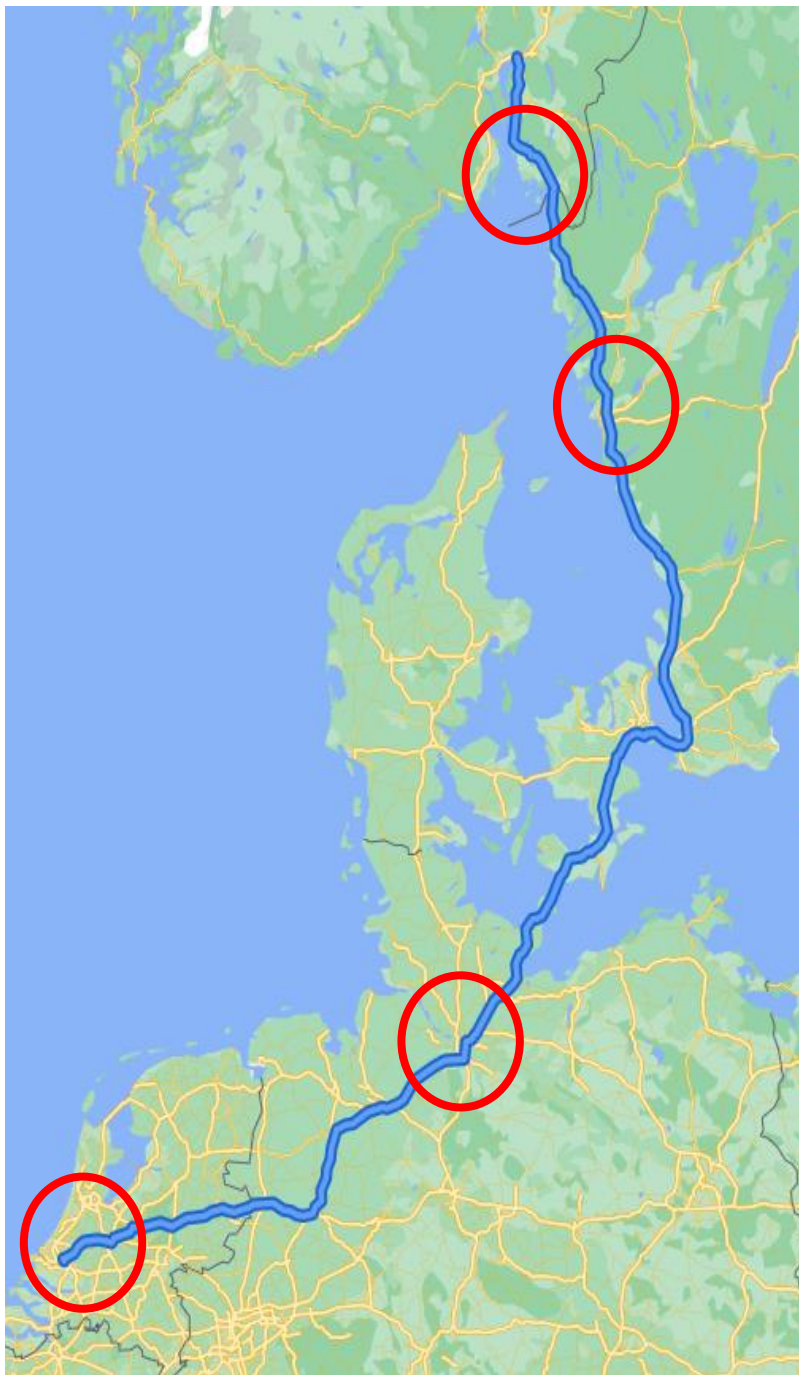


## Use cases

# CCAM test corridor: From Rotterdam to Oslo

Source: Shutterstock





Norway: Border to port



Sweden Hub-to-hub



The Netherlands: Port operations



Germany: Motorway to closed area





# Key results



## R1. Heavy duty vehicles at TRL7

Heavy Duty Vehicles (HDV) suitable for demonstration for the selected use cases along the motorway corridor between Norway and The Netherlands.

## R2. Interface between CCAM vehicles

Interface for the coordination of vehicles inside and outside confined areas, while adding more benefits to the use of CCAM vehicles thanks to the increased efficiency achieved with coordination.

## R3. Design of Physical and Digital Infrastructure

Set-up of Physical and Digital Infrastructure (PDI) validated and created in co-design by relevant stakeholders for the use of L4 trucks on motorways.

## R4. New business models

New sustainable business models and tools, which include CCAM vehicles in the logistics chain.

## R5. Impact assessment report

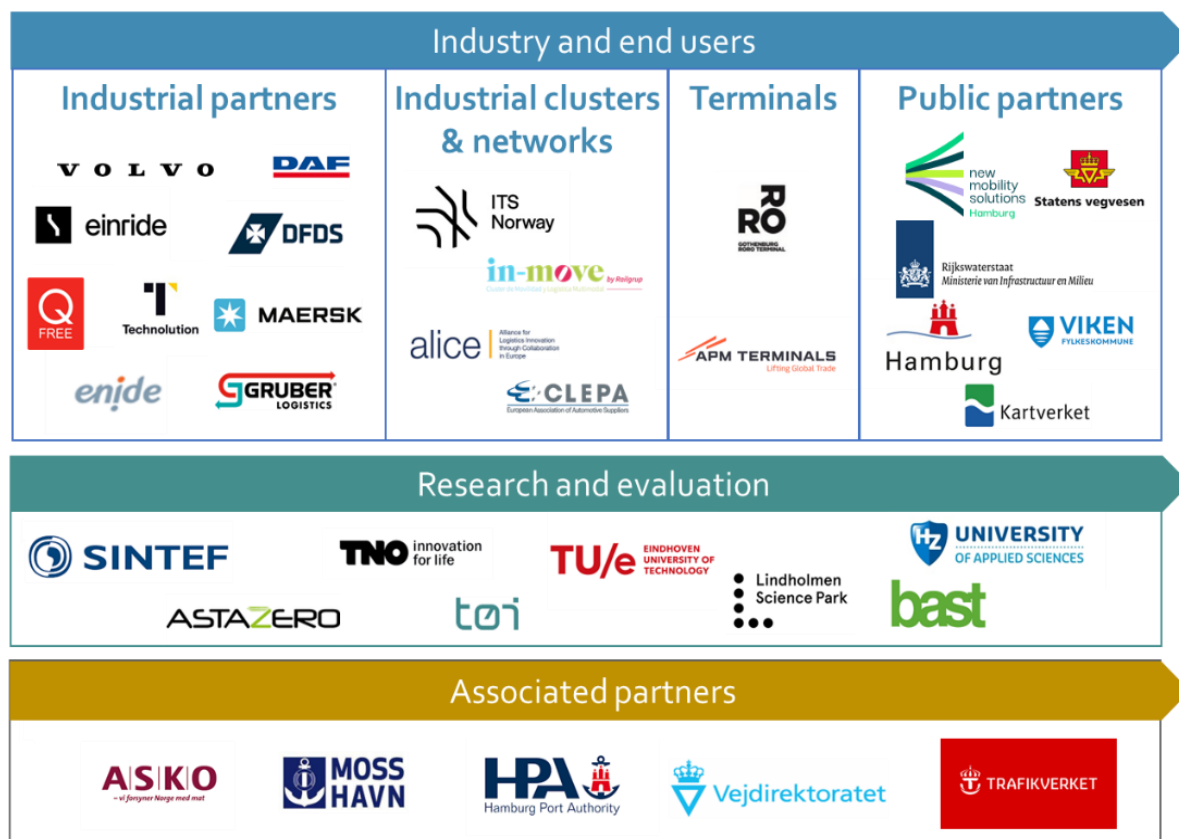
Impact assessment report, recommendations, and best practices in the field of CCAM applied to Logistics.

## R6. Book of recommendations

To disseminate lessons learned and accelerate CCAM adoption in Logistics by contributing to Harmonisation, Standardisation, and Infrastructure readiness.

# Consortium

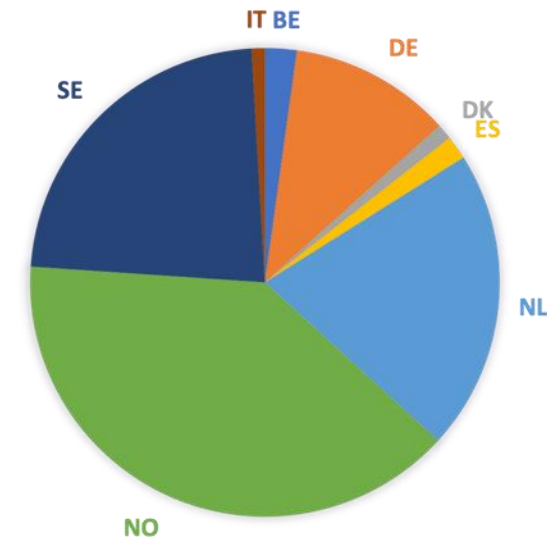
34 organisations from 8 countries: 27 participants, 2 Affiliated entities and 5 Associated partners





# Facts

- 34 partners: Norway, Sweden, Denmark, Germany, The Netherlands, Belgium, Italy, and Spain
- Coordinator: ITS Norway
- Duration: 42 months
- Budget total: 28 061 999 Euro
- EU-contribution: 23 031 671 Euro
- Norwegian partners: 8 649 405 Euro (38%)



Norwegian partners: ITS Norway - Q-Free – SINTEF – TØI - Statens vegvesen – Kartverket - Viken  
Norwegian Associated partners: Moss Havn - ASKO

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# Thank you for your attention



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