

# A port operation use case from the EU project MODI involving SAE Level 4 automated driving

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**KEY WORDS:** automated driving, logistics operation, CCAM (cooperative, connected, and automated mobility)

The EU project MODI aims to accelerate the introduction of SAE Level 4 automated freight vehicles by demonstrating their use in real-world logistics operations across Europe. It focuses on resolving technical, regulatory, and infrastructural barriers that hinder

large-scale deployment of connected, cooperative, and automated mobility (CCAM) solutions. The project validates both technical feasibility and operational integration within logistics processes through five use cases along a logistics corridor from Rotterdam to Oslo.

A primary objective of MODI is the standardization of an interface to control automated vehicles in logistics environments. This interface has been validated in one of the five use cases, carried out at the Rotterdam harbor in The Netherlands. Within this use case, an unmanned automated truck navigates the

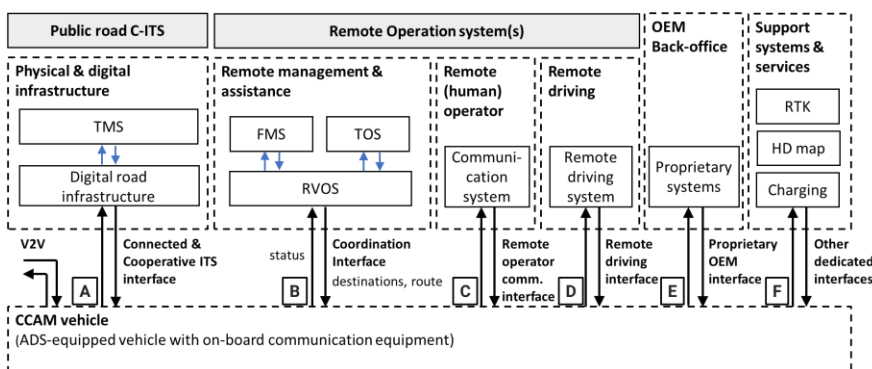


Fig. 1 MODI high-level generic system architecture and CCAM interface A-F

port terminal to pick up and deliver containers. As the truck operates without a driver, both vehicle operation and interactions with the logistics systems are fully automated. MODI has developed an architecture wherein truck coordination is managed through a combination of a Remote Vehicle Operation System (RVOS) and standard C-ITS protocols.

In the paper the developed CCAM interface (Fig.1) is discussed. Furthermore, the design and implementation of the coordination system for the port use case (Fig.2) is explained. It is also described how the interface was validated and demonstrated (Fig.3).

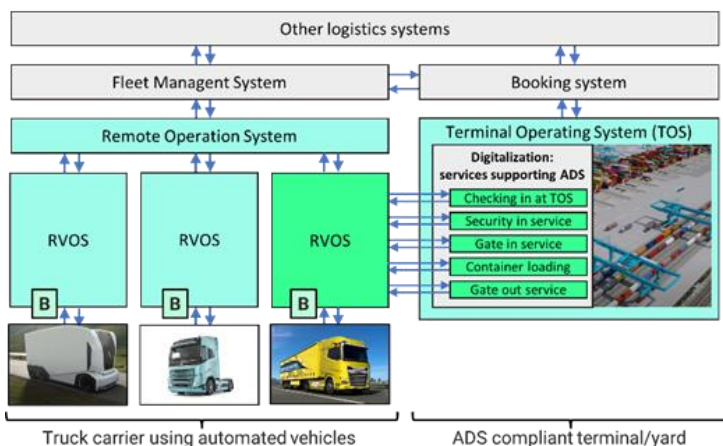


Fig. 3 System framework



Fig. 2 CCAM test vehicle operating at the port terminal, courtesy of DAF