Digital Infrastructure for Future-Proof Mobility (DITM)

European sovereign digital Infrastructure based on a multi-layer map and navigation technology

Funded by the European Union
NextGenerationEU

BRAINPORT DEVELOPMENT

rai AUTOMOTIVE INDUSTRY NL

Agenda

- Short introduction DITM program
- Short recap on the map and traffic management activities over the past 4 years
- Presentation concepts relevant for future EU sovereign ecosystems
  - Cross-Sector Map Production Ecosystem
  - Advanced Data Sharing Environment for CCAM applications
  - Open Architecture concept for AI-Enabled and Software-Defined Cloud-Edge systems
- Transition path to EU deployment: AUTOEDGE-EU initiative
- Questions

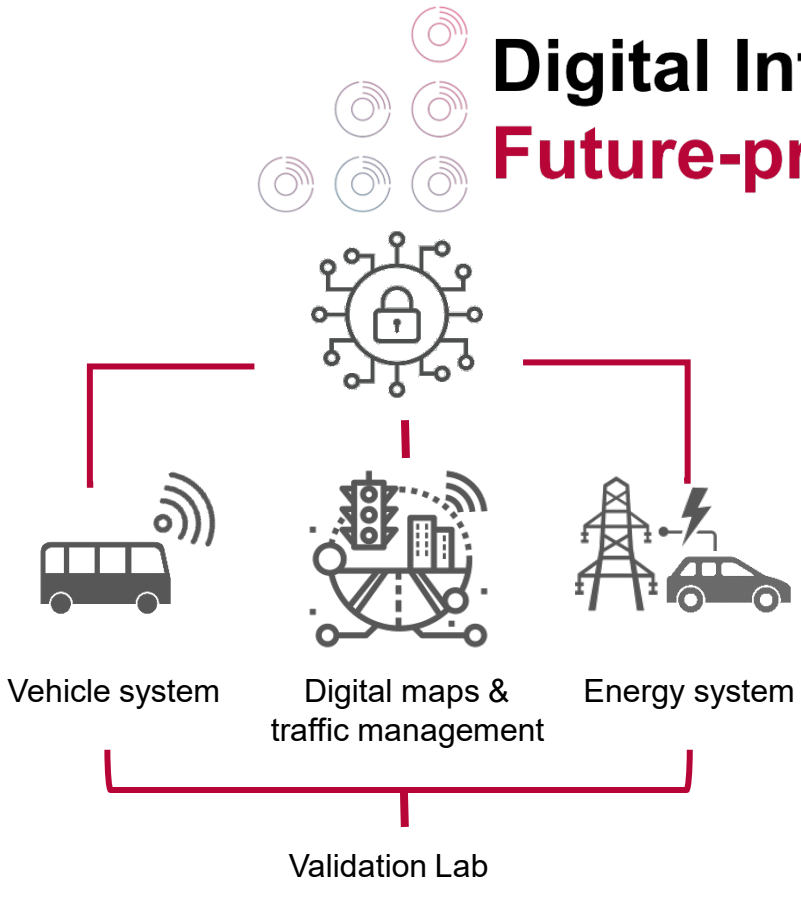
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Goal: increase positive impact of vehicle automation

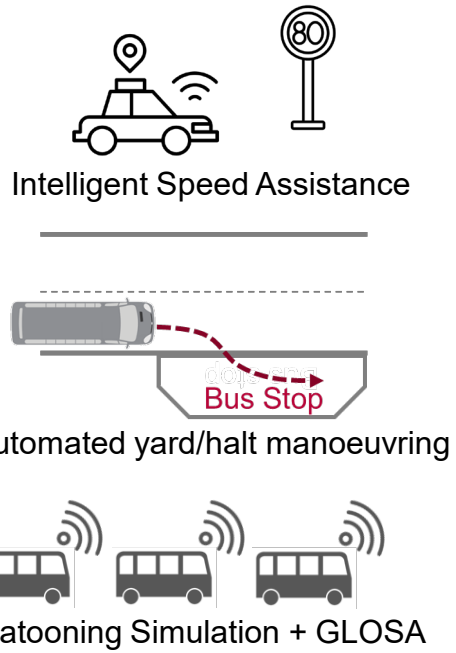
Lead partner: BRAINPORT DEVELOPMENT economische ontwikkelingsmaatschappij

18 Partners **16 Companies**

Digital Infrastructure for Future-proof Mobility



Use cases



Intelligent Speed Assistance

Automated yard/halt manoeuvring

Platooning Simulation + GLOSA

tomtom, VDL, heliox, TNO innovation for life, NXP, monotch, GEOMAAT, Elaadnl, NKL, TU/e Eindhoven University of Technology, SIOUX Technologies, SIEMENS, Infiniot, v-tron, INQUISITIVE, BRAINPORT DEVELOPMENT economische ontwikkelingsmaatschappij, rai Automotive Industry NL

Supported by:

Funded by the European Union NextGenerationEU

Rijkswaterstaat Ministerie van Infrastructuur en Waterstaat

The DITM project is made possible by the Ministry of Infrastructure and Water Management (I&W). DITM is funded by the European Union-NextGenerationEU and DITM partners.

€ 52 million

1 Oct 2022
1 Oct 2026

Website link

Public-private cloud-edge ecosystem for Connected, Cooperative and Automated Mobility built from Dutch Industry-leading technology platforms



Partners

tomtom
Maps,Traffic and Navigation platforms
Automotive sector

GEOMAAT
Map platforms
Public Sector

TNO innovation for life
Data sharing platforms
Public-private sector

SIEMENS
Simulation tools
Automotive sector

monotch SMART MOBILITY PLATFORMS
Data sharing platform
public-private sector

v-tron YOUR WAY IN INFOMOTIVES
Cooperative ITS
platforms

NXP
Hardware technology
Automotive sector

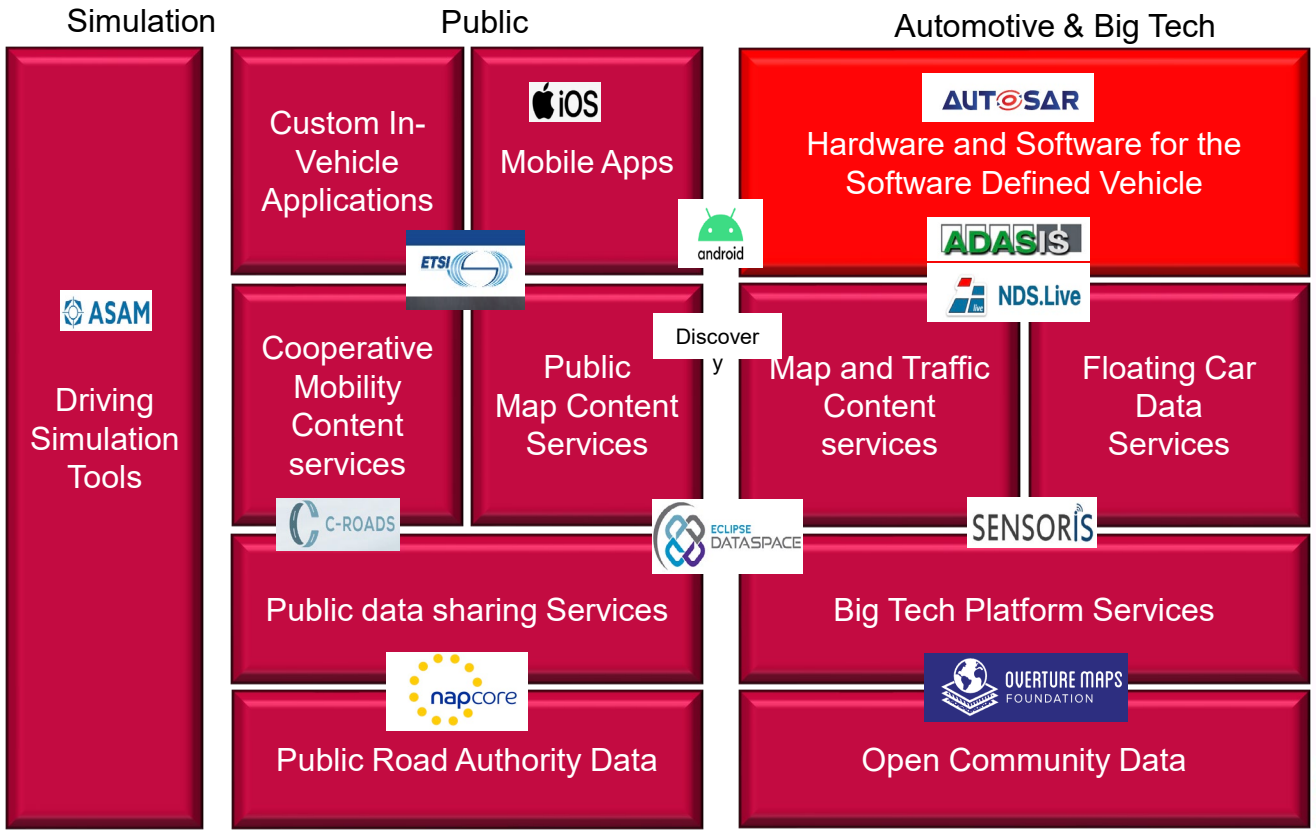
Starting point Oct 2022	Outcomes Oct 2026
Partner platforms operating in separate ecosystems	An interoperable and integrated public-private ecosystem
Custom solutions for OEM vehicles	Modular and open architecture for Software-Defined Vehicles (SDVs).
Support road-level cooperative ITS applications	Support for lane-level and cross border cooperative-ITS applications
Support road-level navigation applications	Support lane-level and context-aware Navigation and ADAS applications
Content production relied on labour-intensive manual processes.	Automated content production
Separate maps for navigation and automated driving on highways	Unified, continuously updated map content for all roads
Cloud-services based on proprietary interfaces	Cloud services interconnected through open industry standards
Validation relying on field operational testing.	Validation in digital-twin and simulation environments.
Separate mapping ecosystems for public and private maps	Integrated map production system
Separated ecosystems for research and industry developments	Open platform enabling technology transfer and validation in a shared ecosystem
Separate reference systems for sharing mobility data.	Global entity reference system across the cloud-edge ecosystem.

DITM transformation:

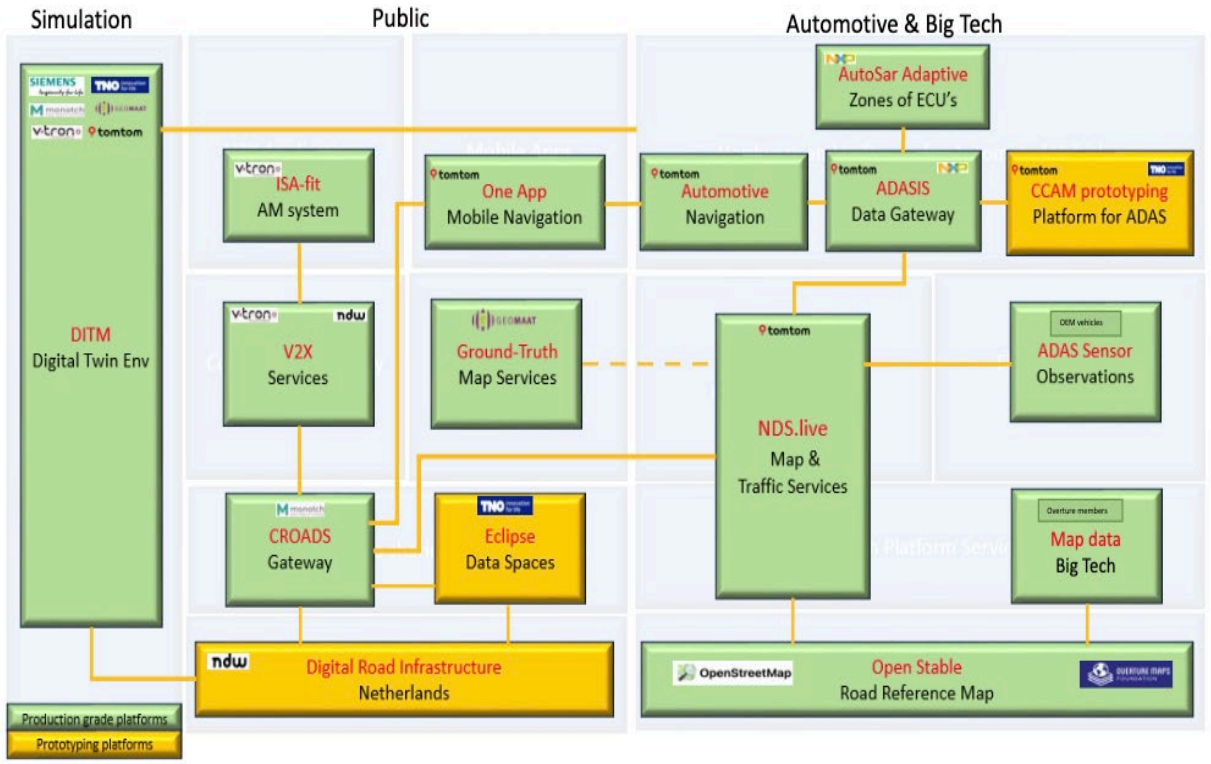
DITM has evolved from fragmented public and private ecosystems toward an integrated, automated mobility ecosystem at TRL-8

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Public and Private Platform suppliers united by open, scalable and industry-standard interfaces



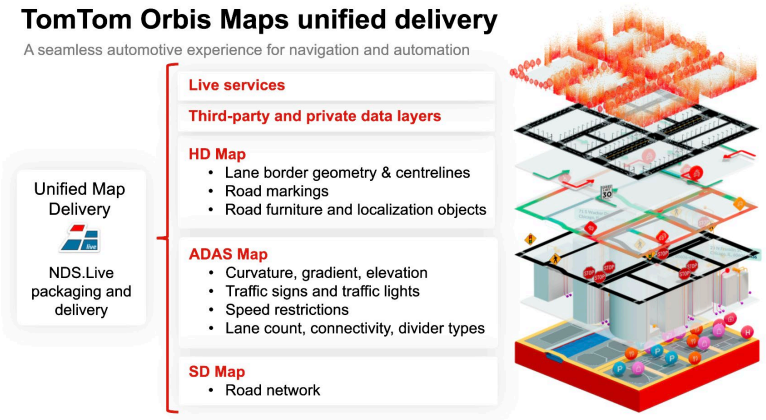
Ecosystem deployment ready for large scale deployment



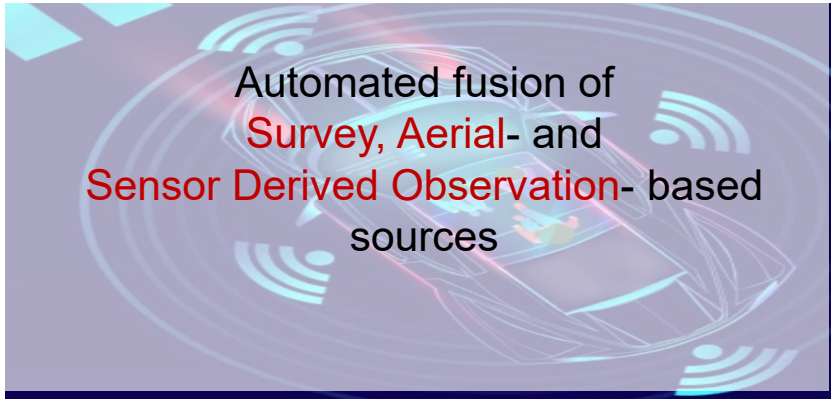
Deployment next generation maps for Automated mobility and prepared for dual-use Defence



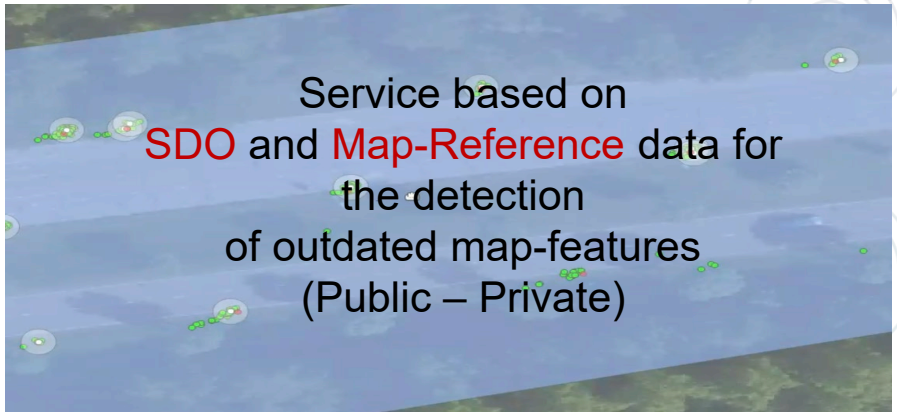
Completeness and Coverage



Scalability and Openness



Accuracy (survey grade sources) and Actuality (Sensor derived observations)

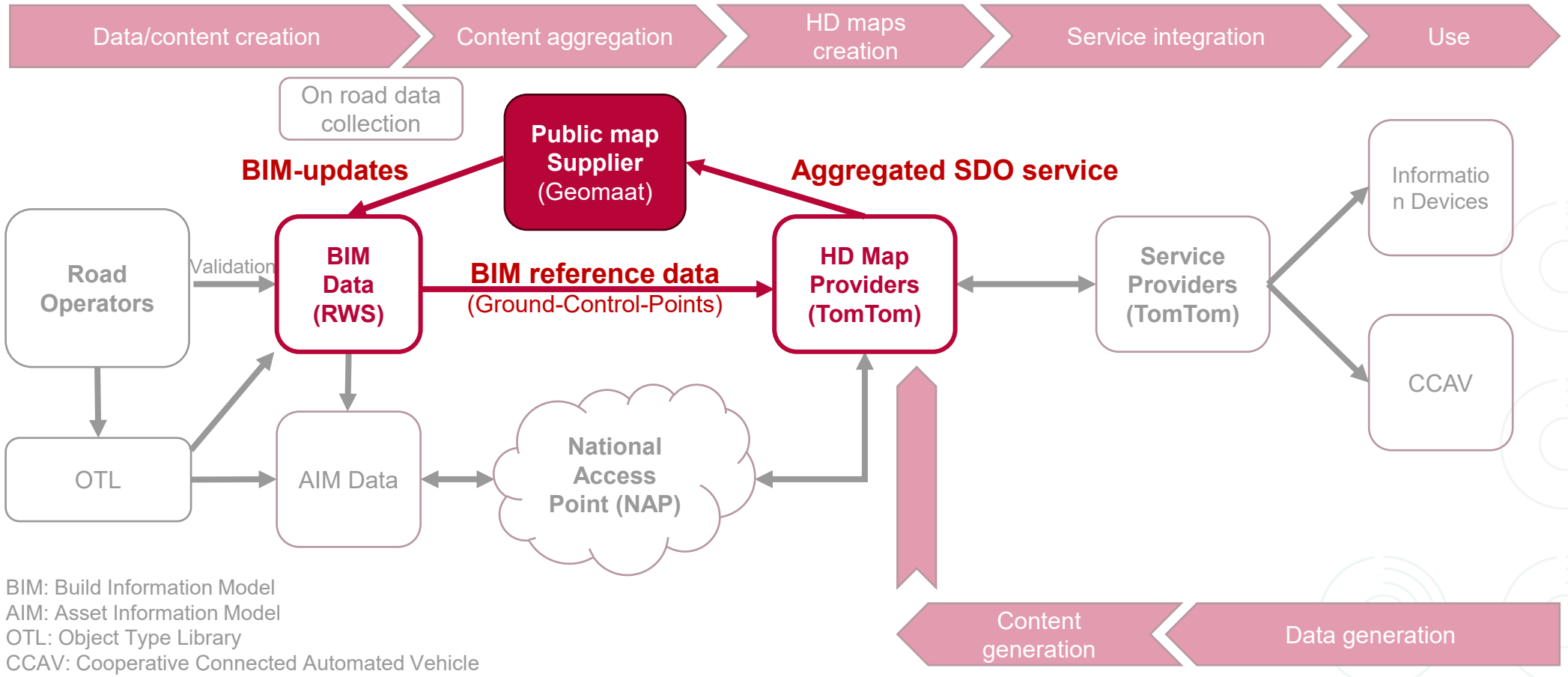


Short reality-to-map time

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Cross-Sector Map Production Ecosystem for Automotive and Public Mobility

(Geomaat & TomTom)



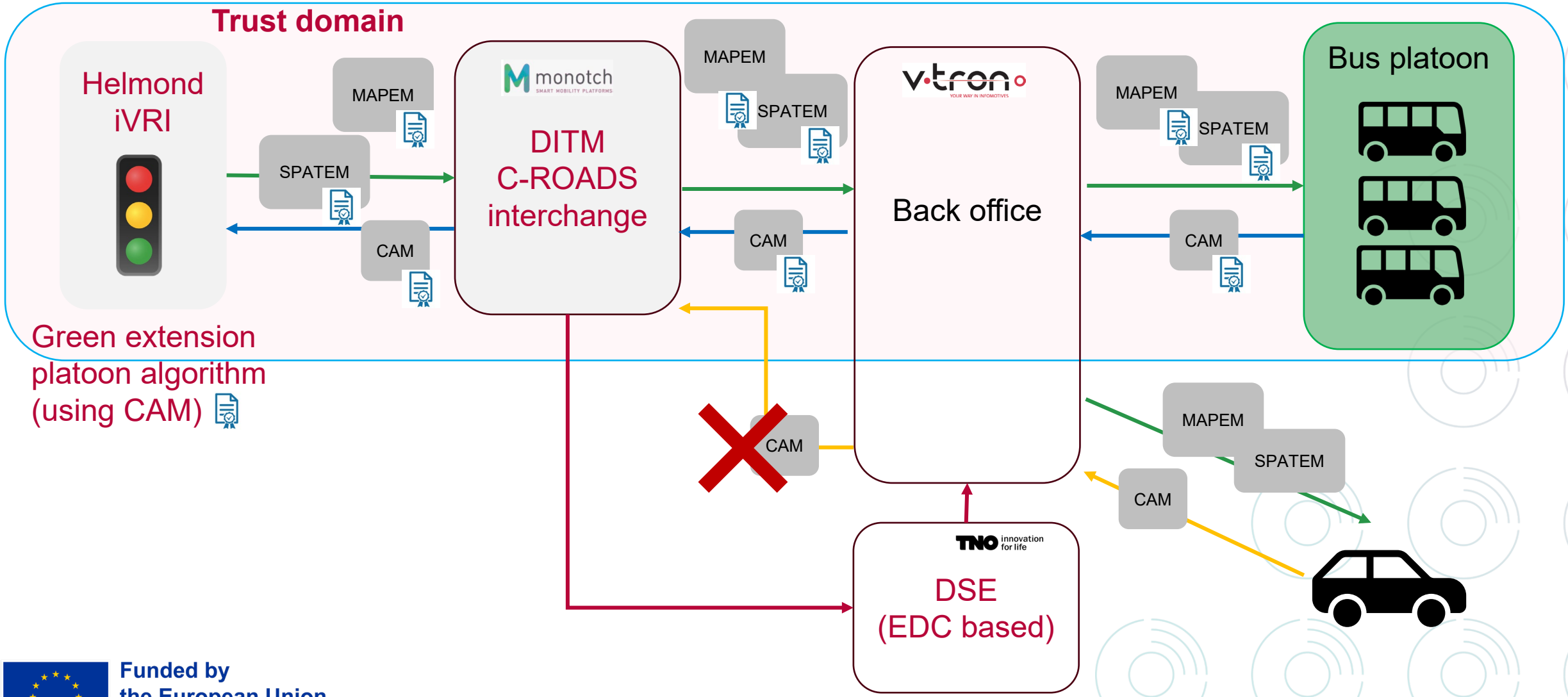
BIM: Build Information Model
AIM: Asset Information Model
OTL: Object Type Library
CCAV: Cooperative Connected Automated Vehicle

Radics model for BIM information reuse (DROIDS)

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Advanced data sharing environment for CCAM

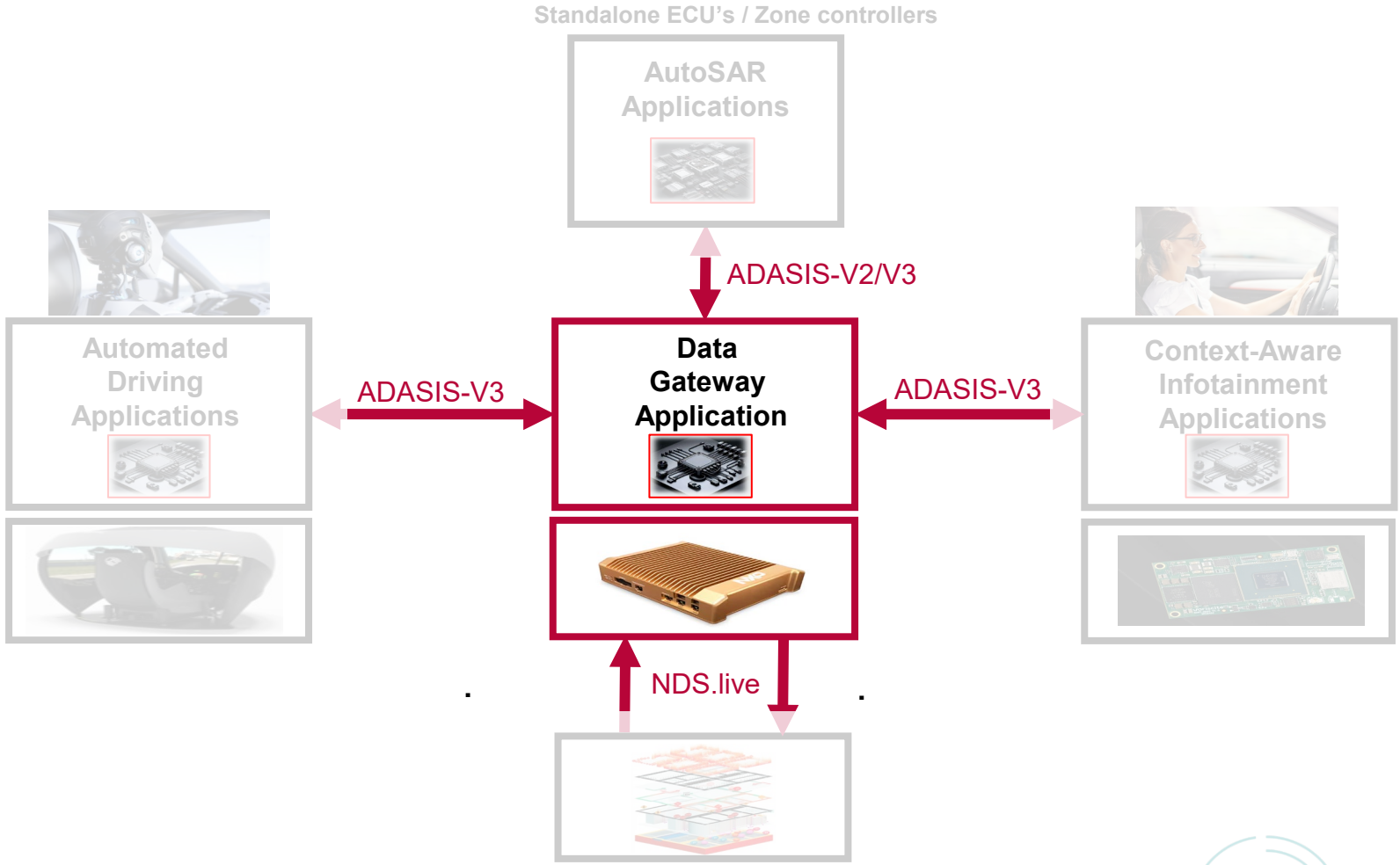
Priority request traffic light for bus platoon based on **long-range trust** communication



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Introduction Data Gateway for software-defined cloud-edge systems

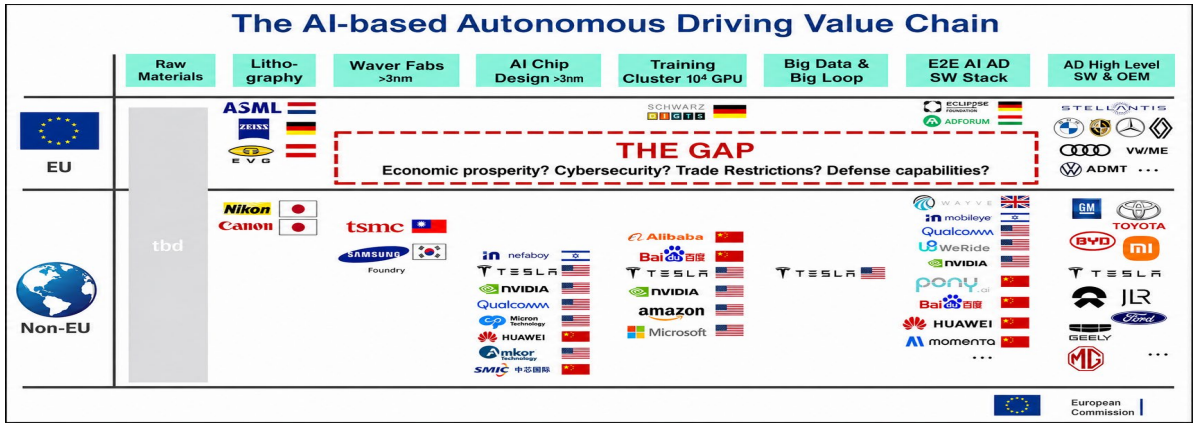
Open alternative to non-sovereign suppliers monopolizing the sensor-observation data in the ADAS ecosystem



NDS.live: Industry standard defined by the NDS association clou-edge communication
ADASIS: Industry standard maintained by Ertico by for in-vehicle communication

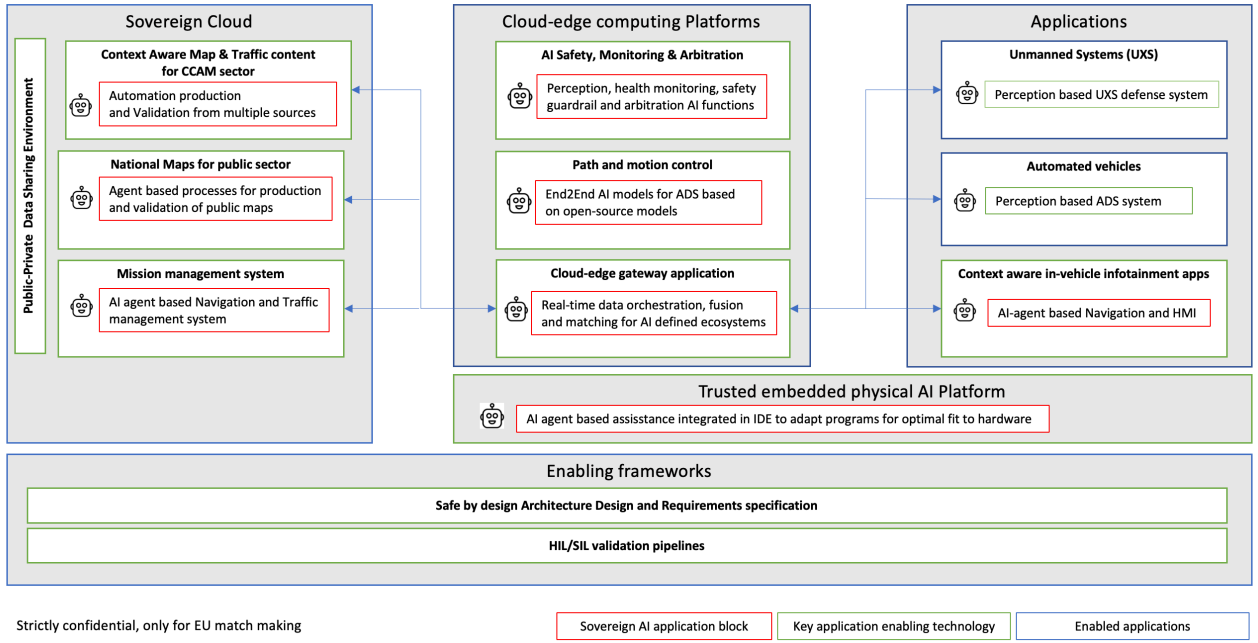
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AUTOEDGE-EU initiative – Transition DITM technology platforms in EU ecosystem programs



IPCEI-AI: Project concept for AUTOEDGE-EU

'OEM' 'SME'



Strictly confidential, only for EU match making

Sovereign AI application block | Key application enabling technology | Enabled applications

Context

- The European automotive and defence industries are heavily reliant on Automated Driving/Mobility software and hardware and implementation layers (e.g., AI foundation models), coming from the USA and China.
- This represents a critical gap for European AI sovereignty and requires the development and scaling of domestic (EU) automated driving technologies that can always ensure safe and available functioning and can capture a unique control point for the European automotive industry.

Project Concept

- AUTOEDGE-EU researches and develops sector-specific dual-use AI application blocks for automated mobility, in the domains of defence, mobility and logistics.
- The core innovations include:
  - Safe-by-design architectures for dual-use application domains.
  - Cloud-based context-aware mapping and mission management solutions.
  - Infrastructure and vehicle-based perception modules.
  - Cloud-edge communication gateways, based on open industry standard interfaces from the public and private sectors for software-defined systems.
  - Edge-deployed End-to-End (E2E) Automated Driving/Mobility models.
  - Health & Safety Monitoring and Safety Guardrail functions deployed on sovereign edge computing platforms.
  - Validation pipelines and deployment platforms.
- **The project aims to achieve a sovereign sector-specific AI-based automated mobility functionality and validation platforms.**

IPCEI: Important Projects of Common European Interest

Questions to the audience

- Would OEM's be interested adopting the centralized data gateway concept?
- Should we follow-up on the concept of a Ground-Control-Point layer in a public-private collaboration setting?
- Should we regulate open access to cooperative perception data?
- Is there interest of EUCAD partners to connect to the AUTOEDGE-EU initiative?

Strictly confidential, only for EU Matchmaking