Protecting the new generation of cars against cybercriminals

CyberSec-ITSC2020 Workshop: Advanced Cybersecurity Approaches for Connected, Automated and Electric Vehicles

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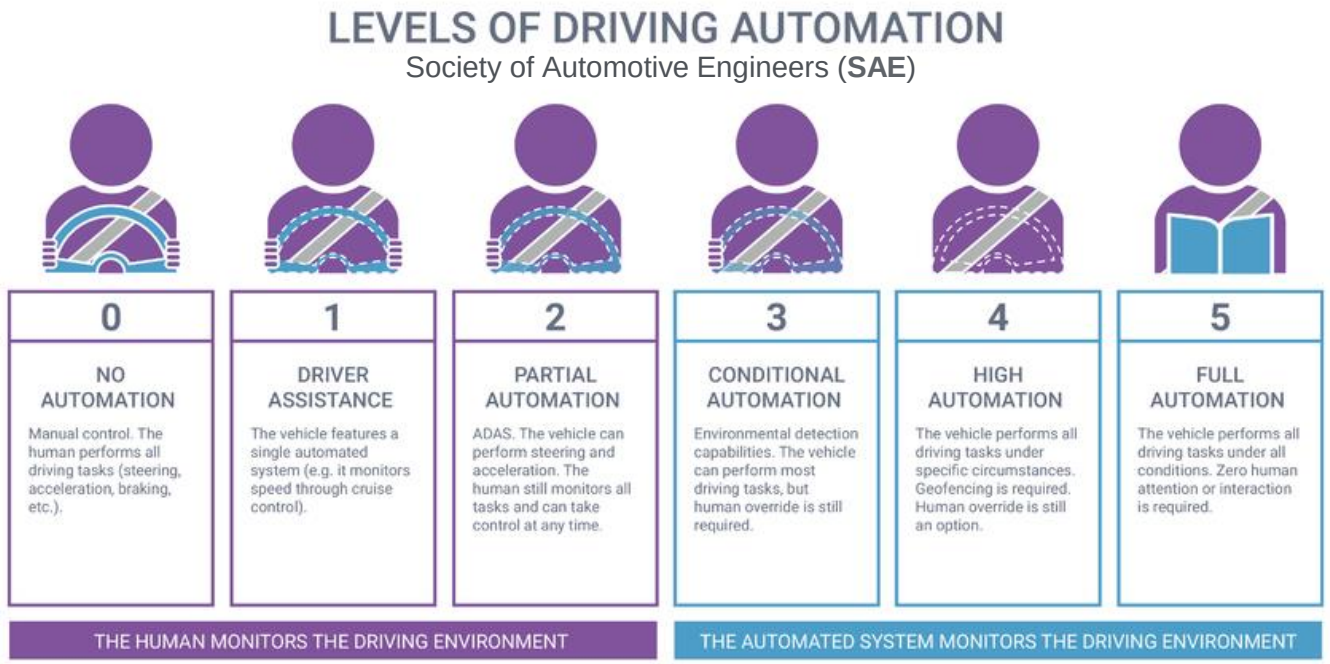
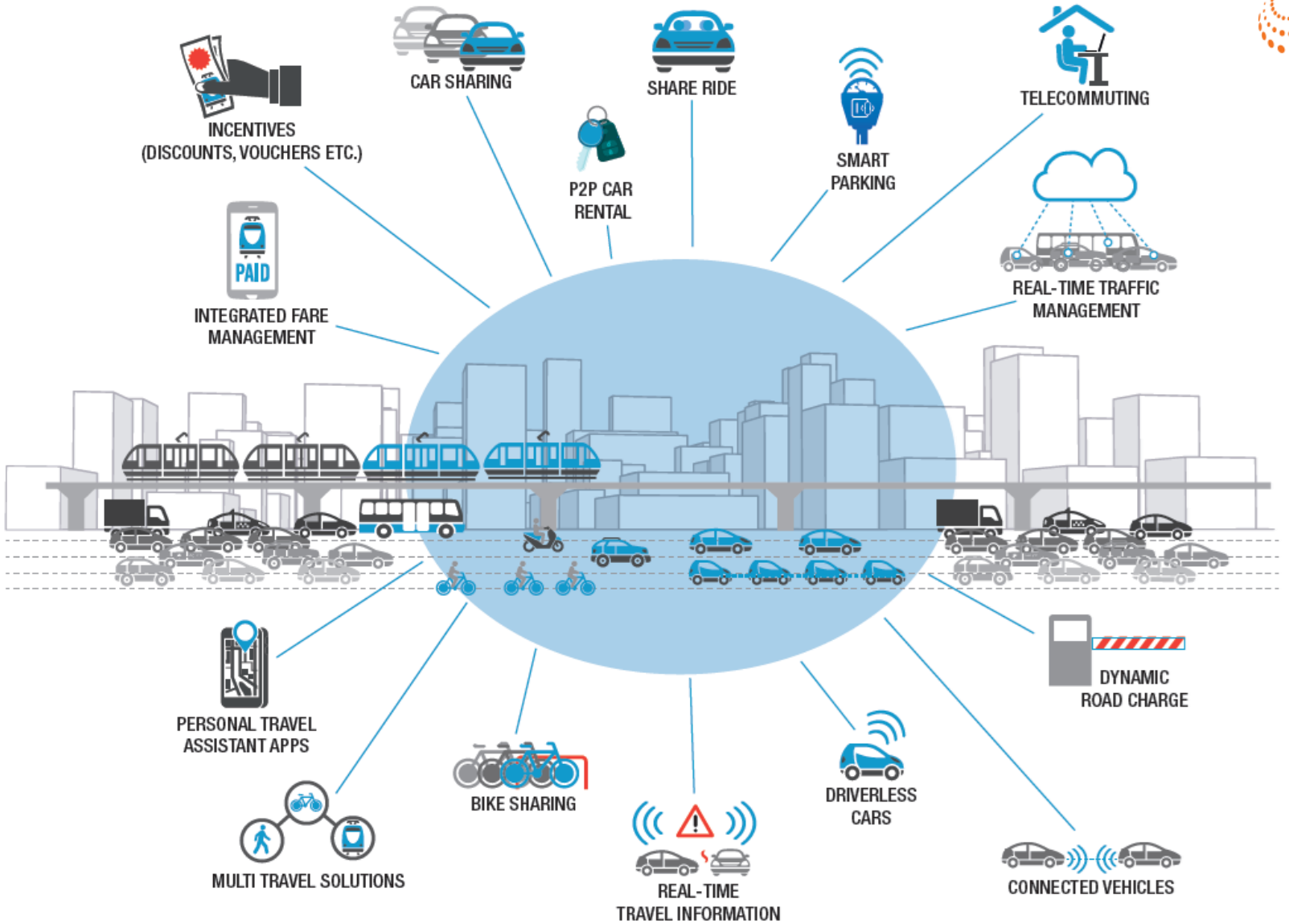
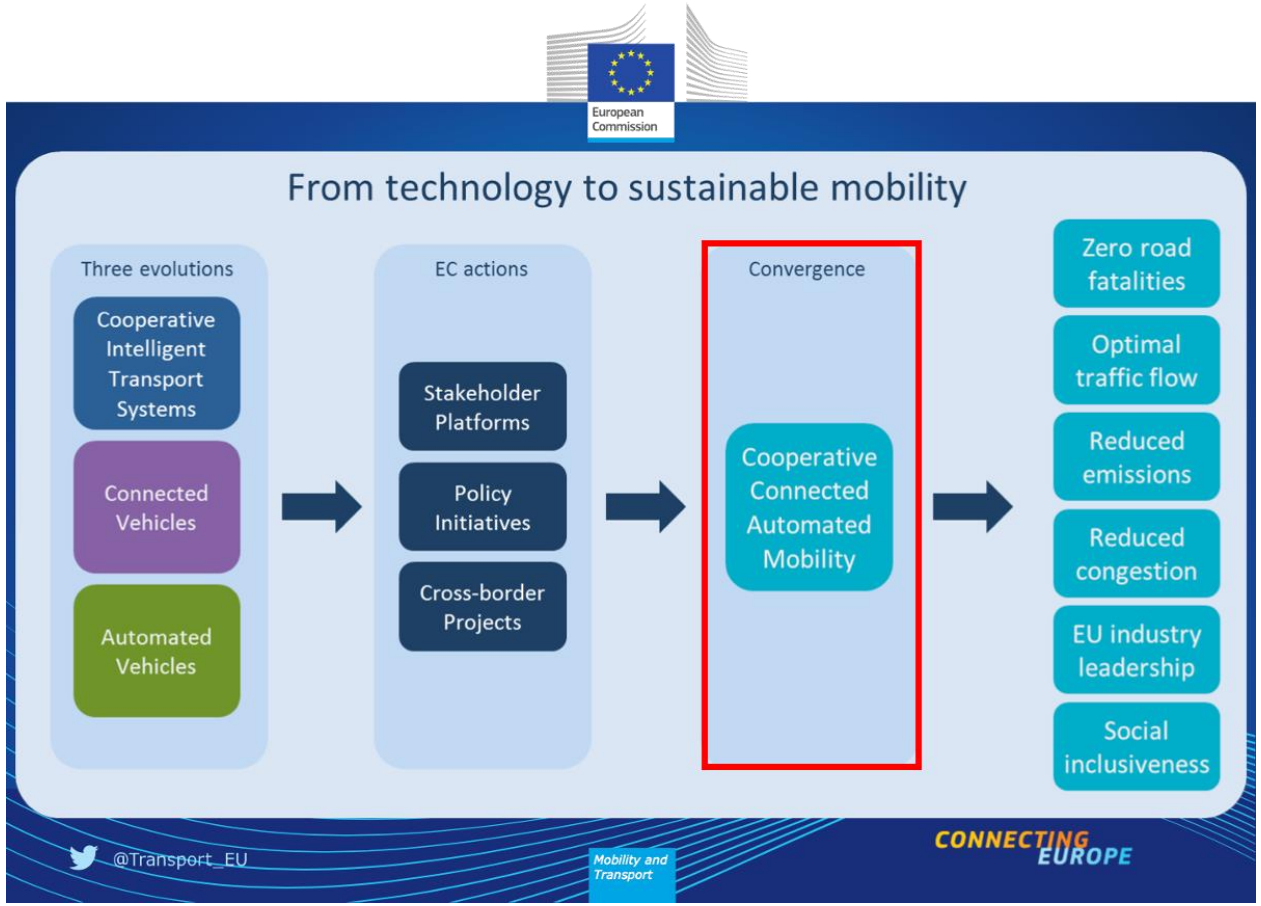
Levels of Driving Automation




INCENTIVES (DISCOUNTS, VOUCHERS ETC.)
CAR SHARING
P2P CAR RENTAL
SHARE RIDE
SMART PARKING
TELECOMMUTING
PAID
INTEGRATED FARE MANAGEMENT
REAL-TIME TRAFFIC MANAGEMENT
PERSONAL TRAVEL ASSISTANT APPS
BIKE SHARING
DYNAMIC ROAD CHARGE
MULTI TRAVEL SOLUTIONS
REAL-TIME TRAVEL INFORMATION
DRIVERLESS CARS
CONNECTED VEHICLES

CCAM and Europe's 5G Corridors

- **Connected mobility:** A service provider using telecommunication services (mostly driven by cellular technologies, cloud service provision and web applications today) to bring information inside the vehicle, or collecting vehicle data information to support mobility services (including services such shared driving, mobility as a service, insurance, remote diagnostics, charging stations).
- **Cooperative mobility (C-ITS):** sharing information on the road and traffic conditions around the road users (driven by Day 1 C-ITS services based on short-range communication). It does not necessarily include a service provider.
- **Automated mobility:** Replacing the driver in a vehicle for dynamic driving tasks (braking, steering, environment monitoring). Can include cooperative/ connected mobility services with a higher level of integrity/redundancy.



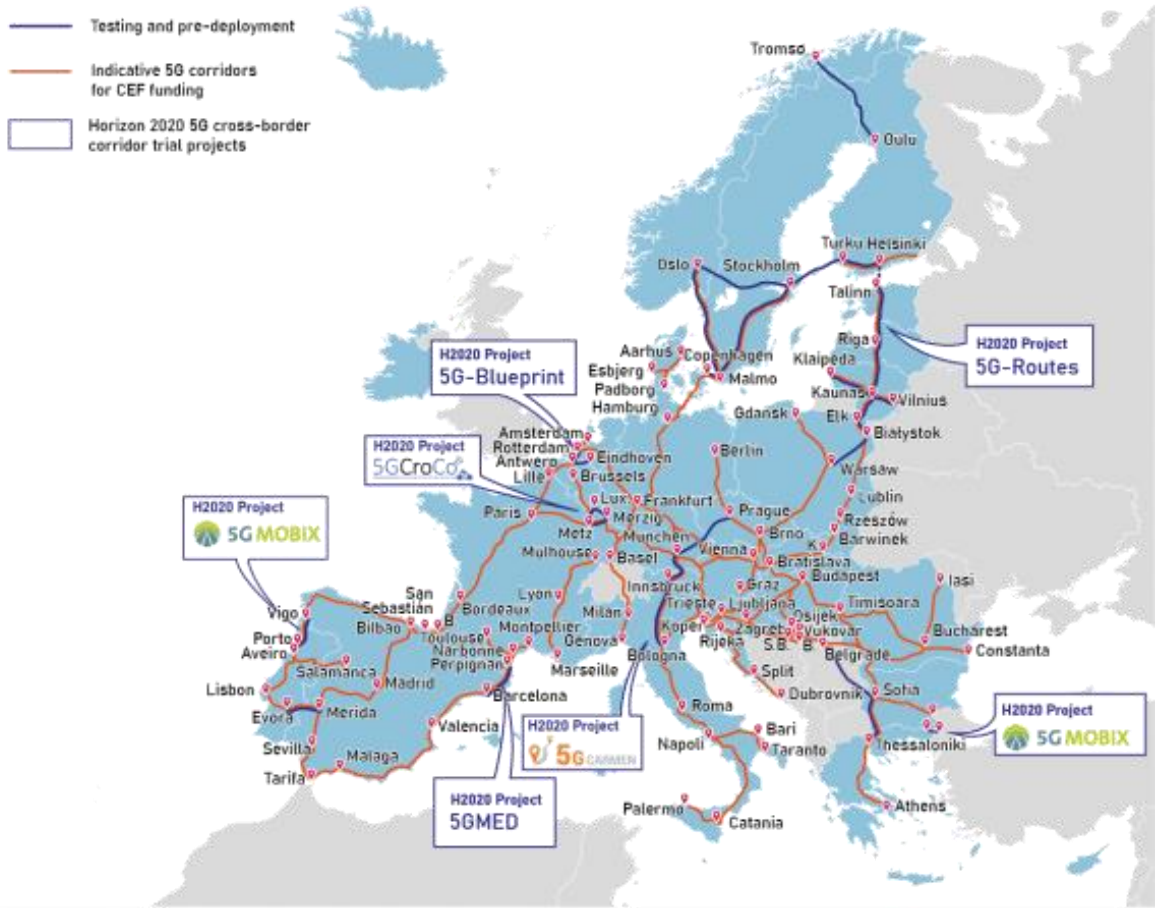
connectedautomateddriving.eu

Technological Enablers

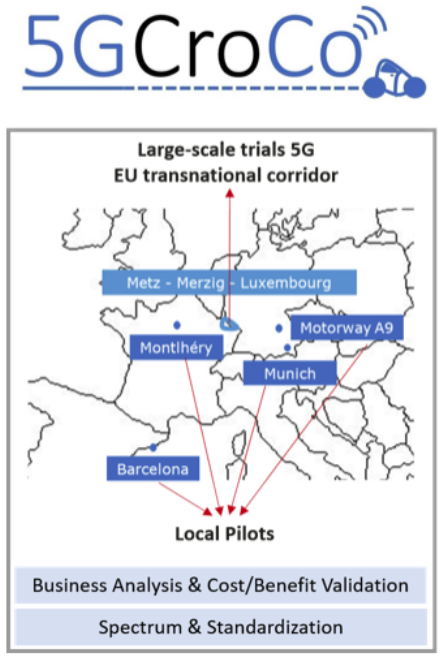
- Mobility and Automotive
- Telecom and Road Infrastructure
- IT enabled Services (ITeS)

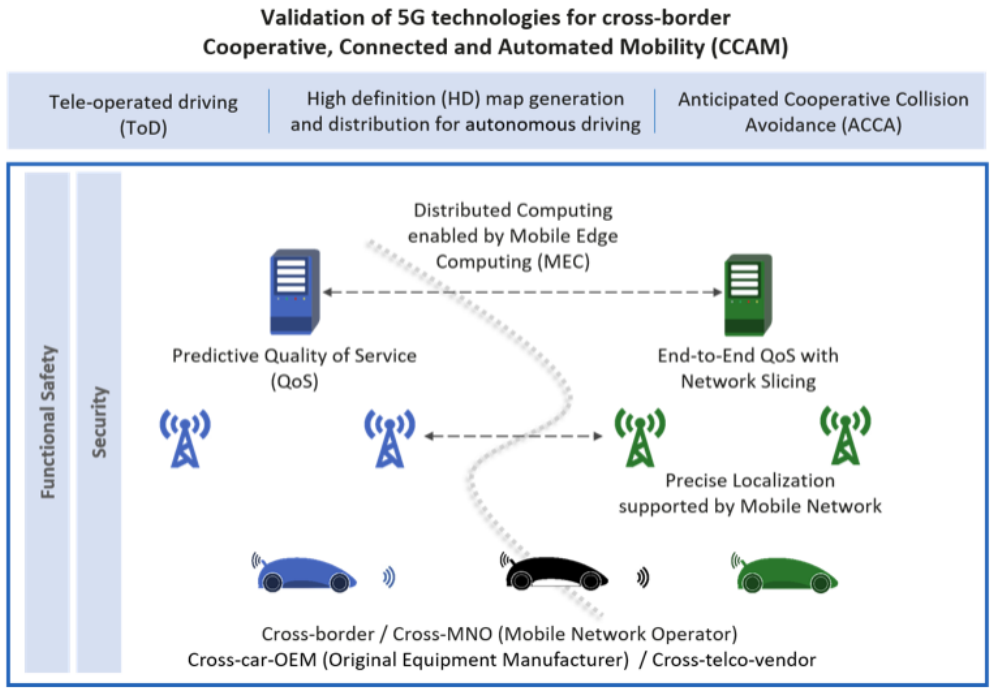
Legenda:
Hard activity test area | Soft activity test area | Hard activity test corridor | Soft activity test corridor

European Commission | **5G Cross-border Corridors for Connected and Automated Mobility**



5G Cross Border





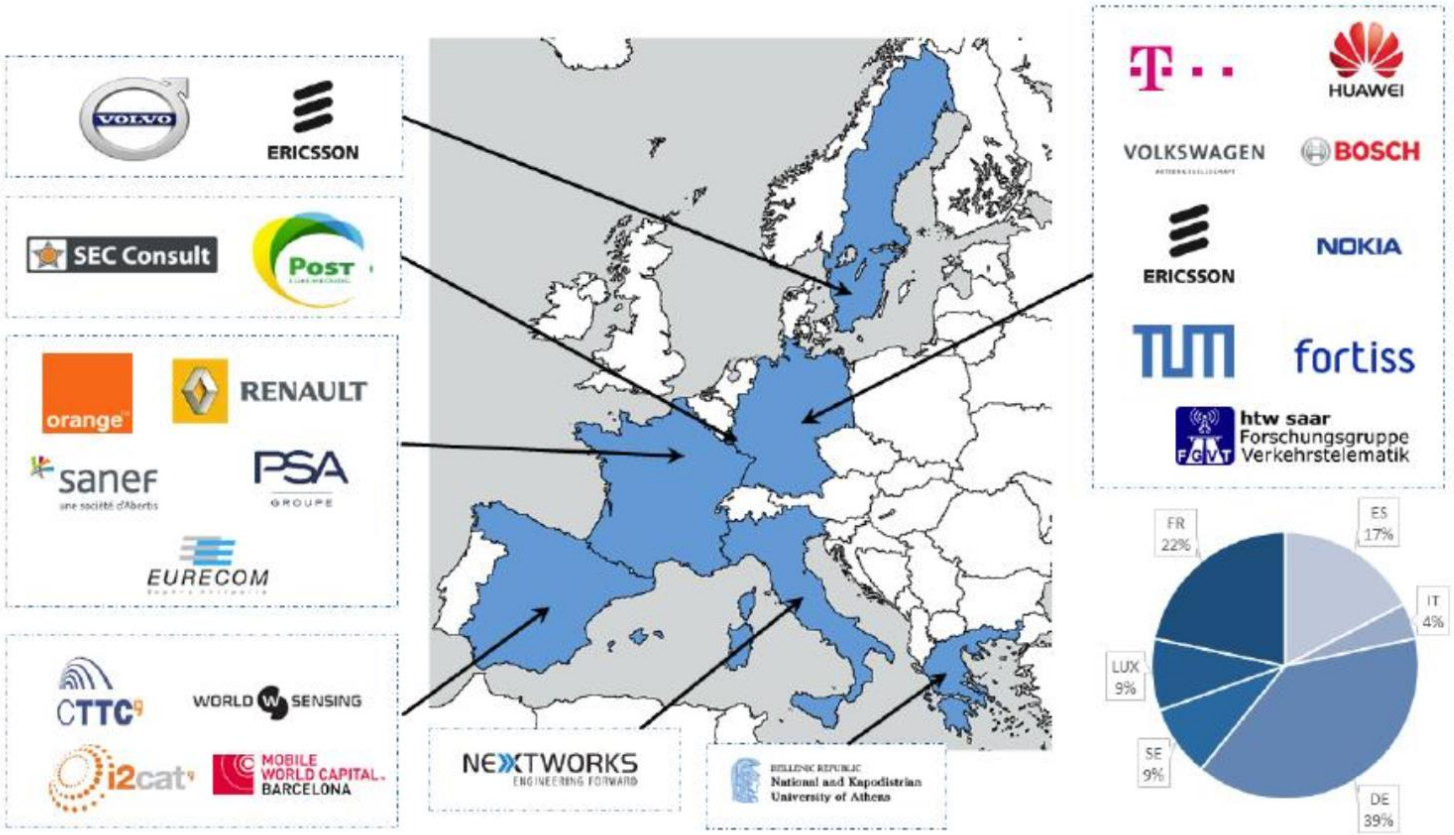
- 24 partners from 7 European Countries
- Total project budget ≈ 17M€
- Expected EC contribution ≈ 13M€
- Project duration: 36 Months
- 3 CCAM key use cases to be demonstrated

The project leading to this application has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 825050

Focus of the innovation

- **5G Technology** features
  - Cross-border/MNO/vendor/generation Operation
  - Distributed Computing enabled by Mobile Edge Computing (MEC)
  - New Radio
  - Network Slicing
  - Predictive QoS
  - Improved Positioning
- Recommendations for **Regulation** and **Spectrum**
- Identification of **new business model** opportunities
- Impact on **standardization** (3GPP, ISO, ETSI, SAE, …)

5G Cross Border



5G Cross Border

5GMED

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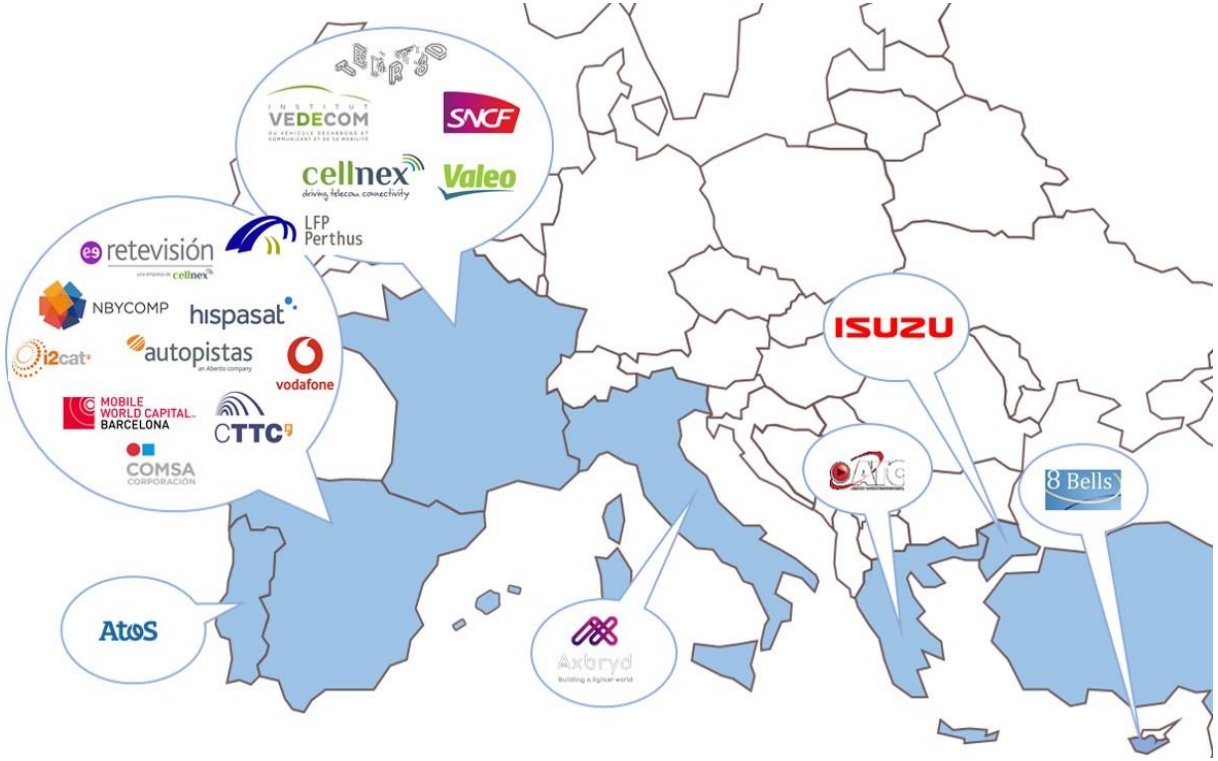
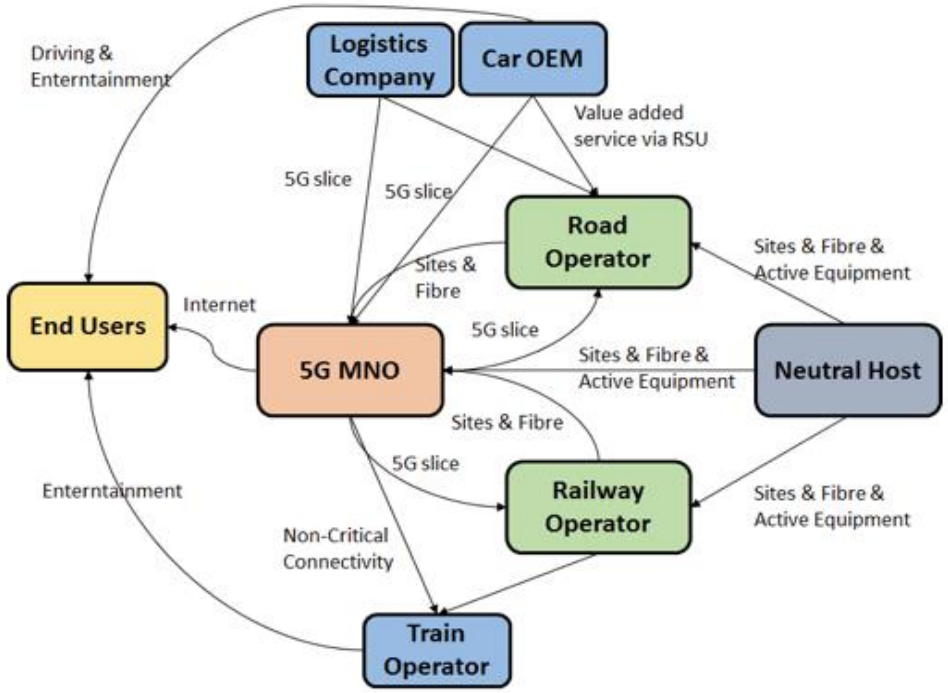
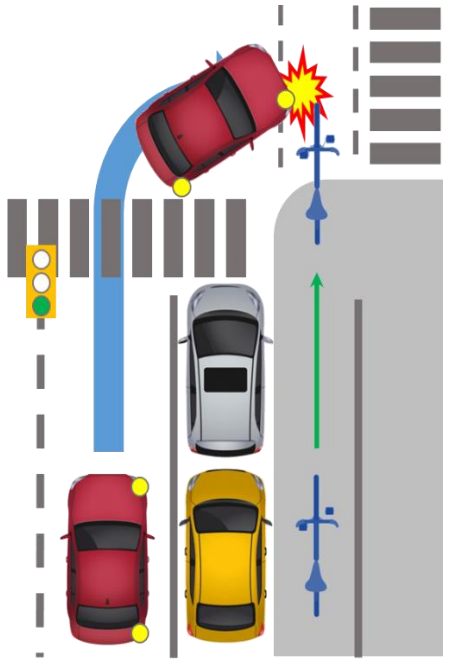
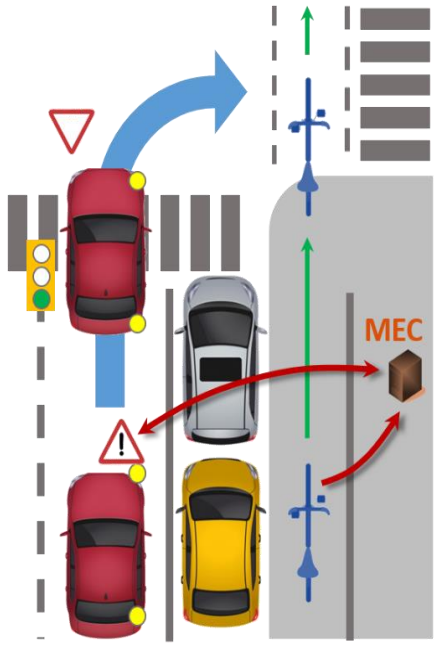




5GMed is a € 15.7 million project that received close to € 11.9 million contribution from the European Commission

MEC-enabled Vulnerable Road User Protection





EU Vision & Expected Impacts For Society

Safety: Reducing the number of road fatalities and accidents caused by human error;

Environment: Reducing transport emissions and congestion by optimising capacity, smoothening traffic flow and avoiding unnecessary trips;

Inclusiveness: Ensuring inclusive mobility and goods access for all;

Competitiveness: Strengthen competitiveness of European industries by technological leadership, ensuring long-term growth and jobs.

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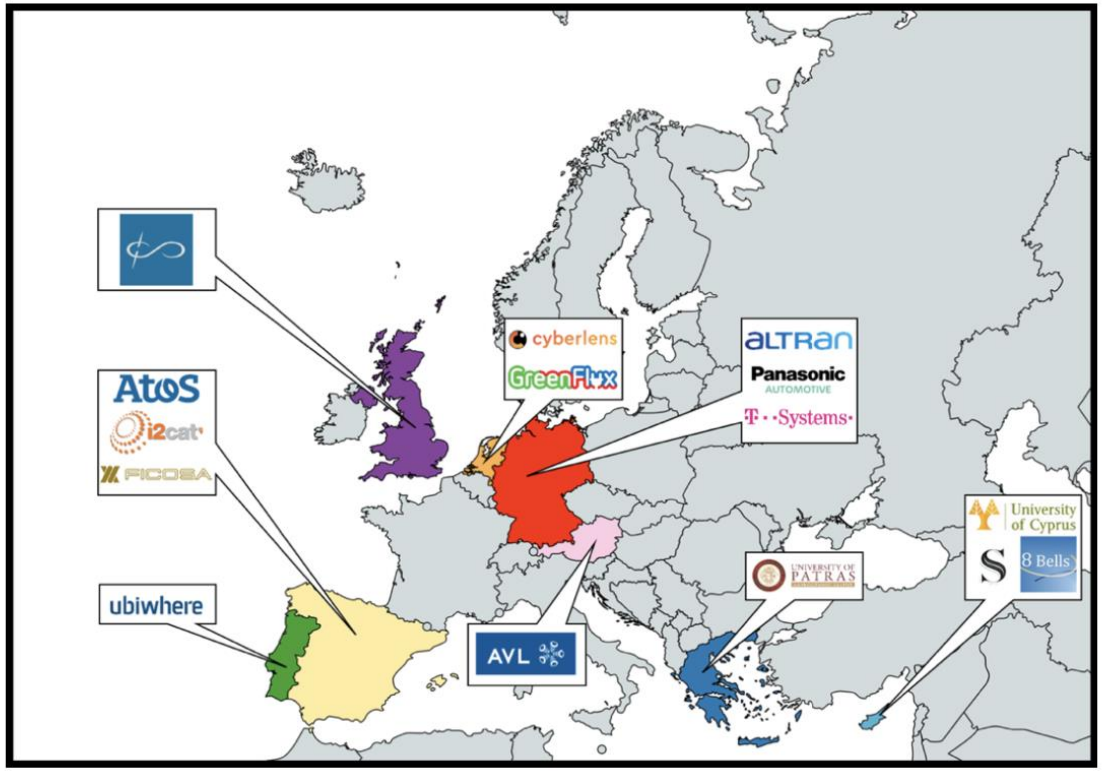
CARAMEL

https://www.h2020caramel.eu

@caramel_Project

CARAMEL Promo



European Commission

CARAMEL

cyberwatching.eu
The European watch on cybersecurity & privacy

CARAMEL is a € 6.6 million project that received close to € 4.9 million contribution from the European Commission

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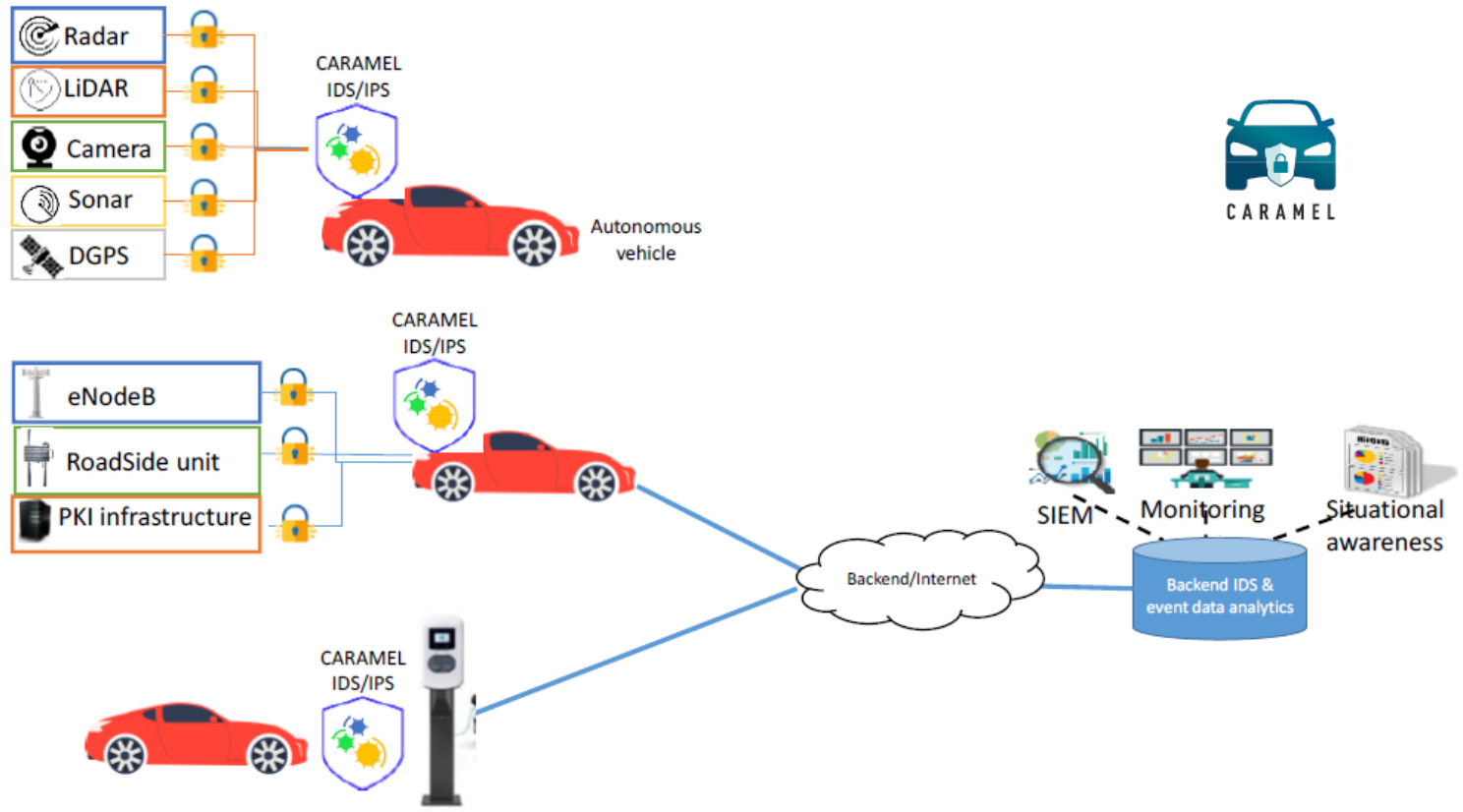
Autonomous Vehicles

Connected Vehicles

Plug-in Electrical Vehicles



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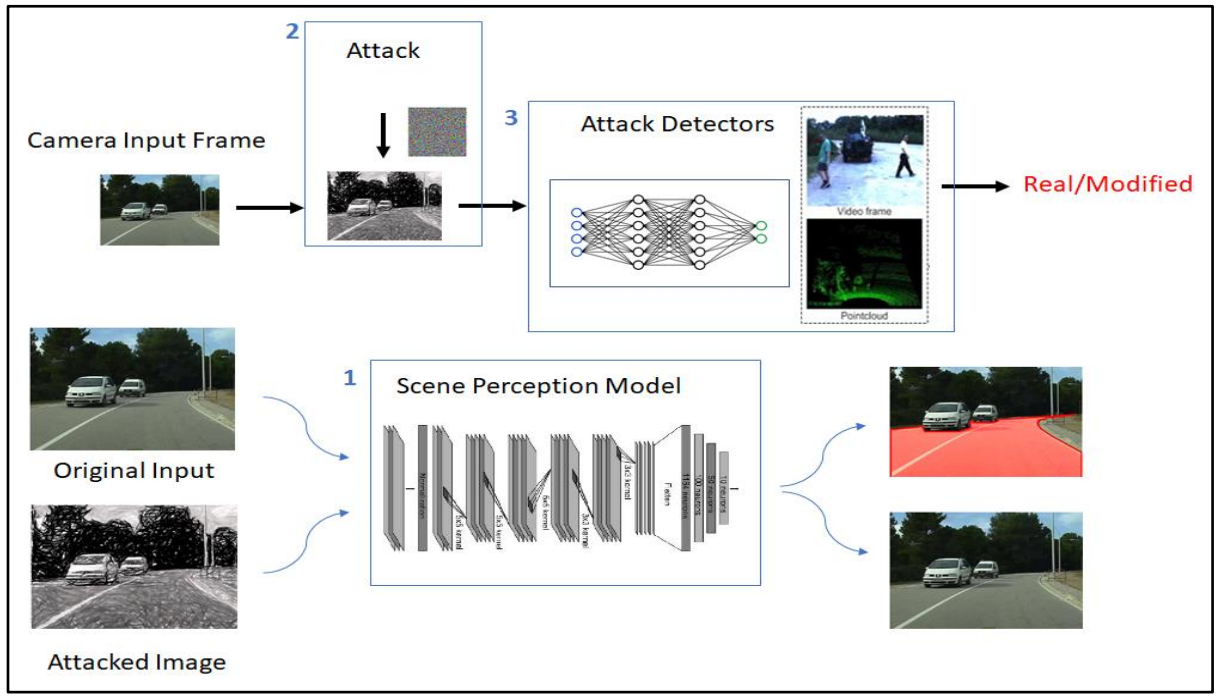
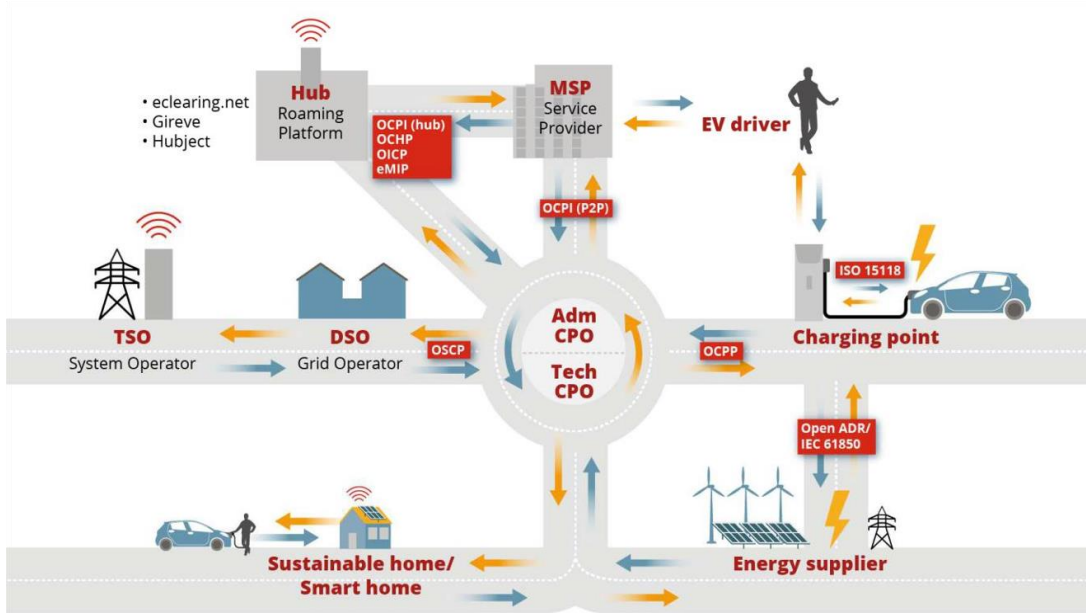
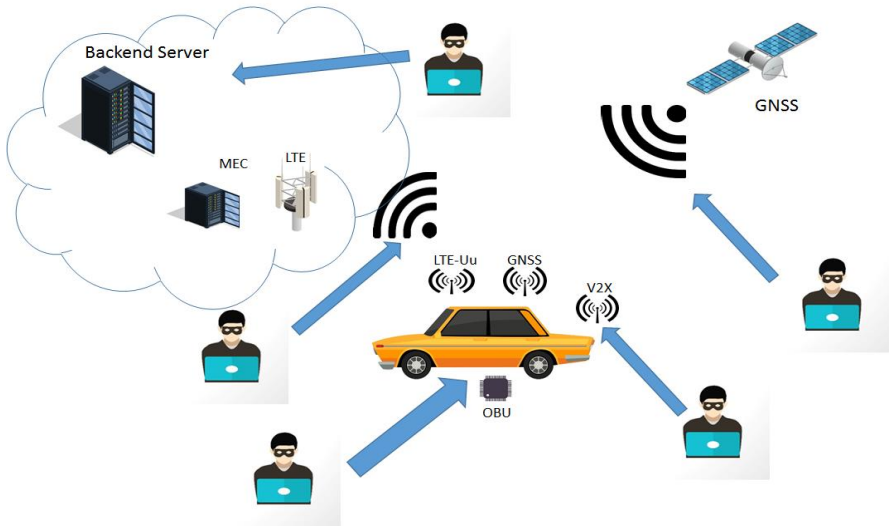


CARAMEL





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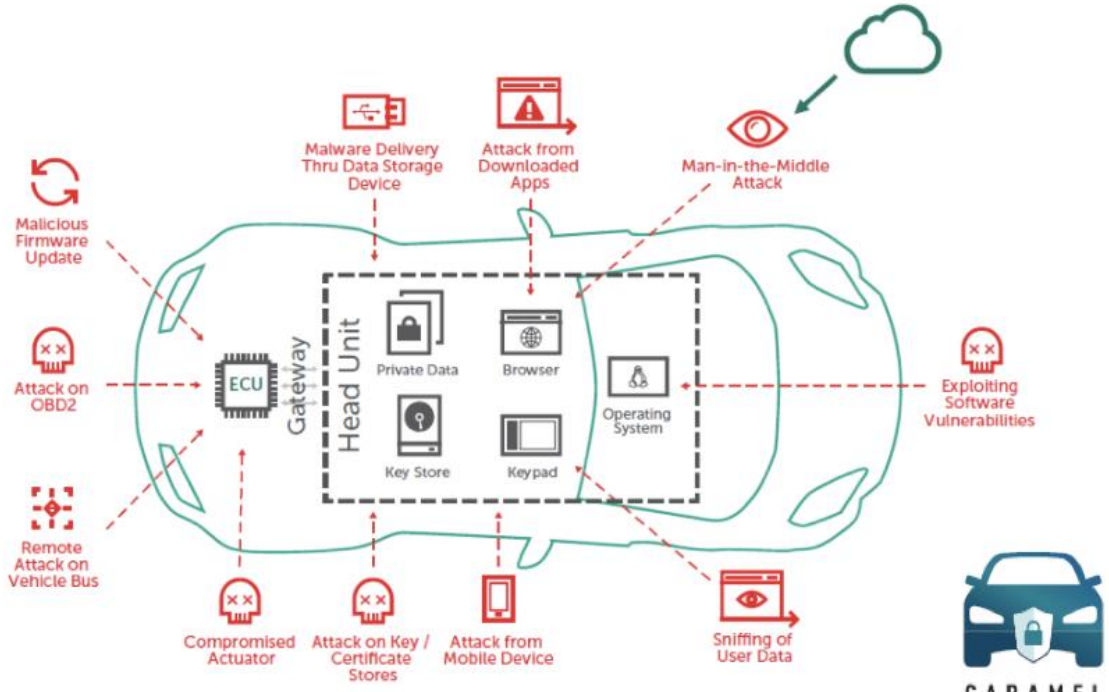
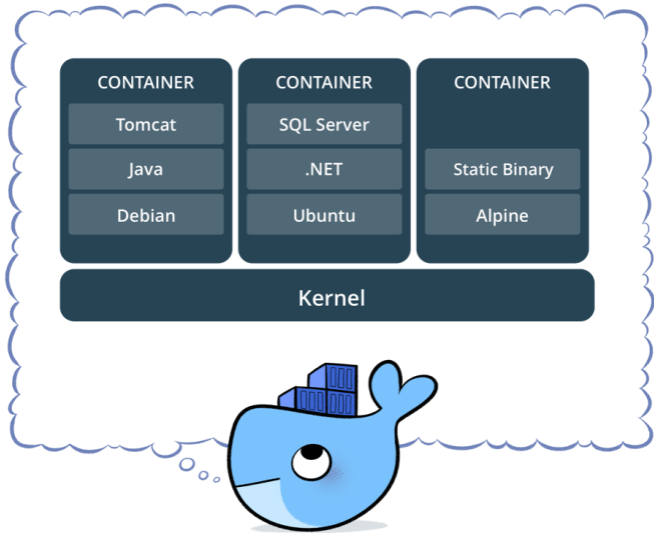
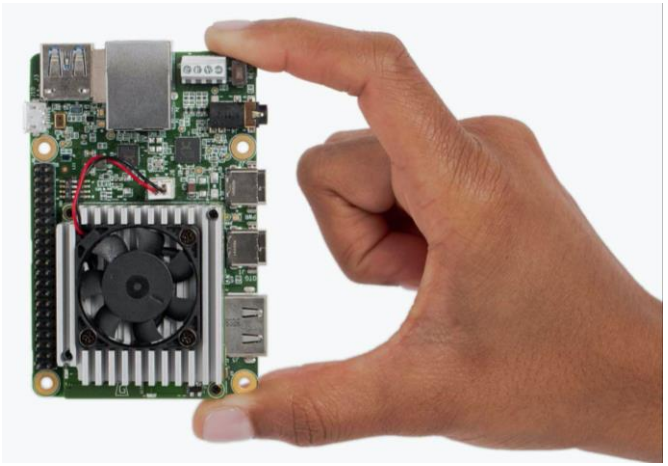


Anti-hacking IDS/IPS device





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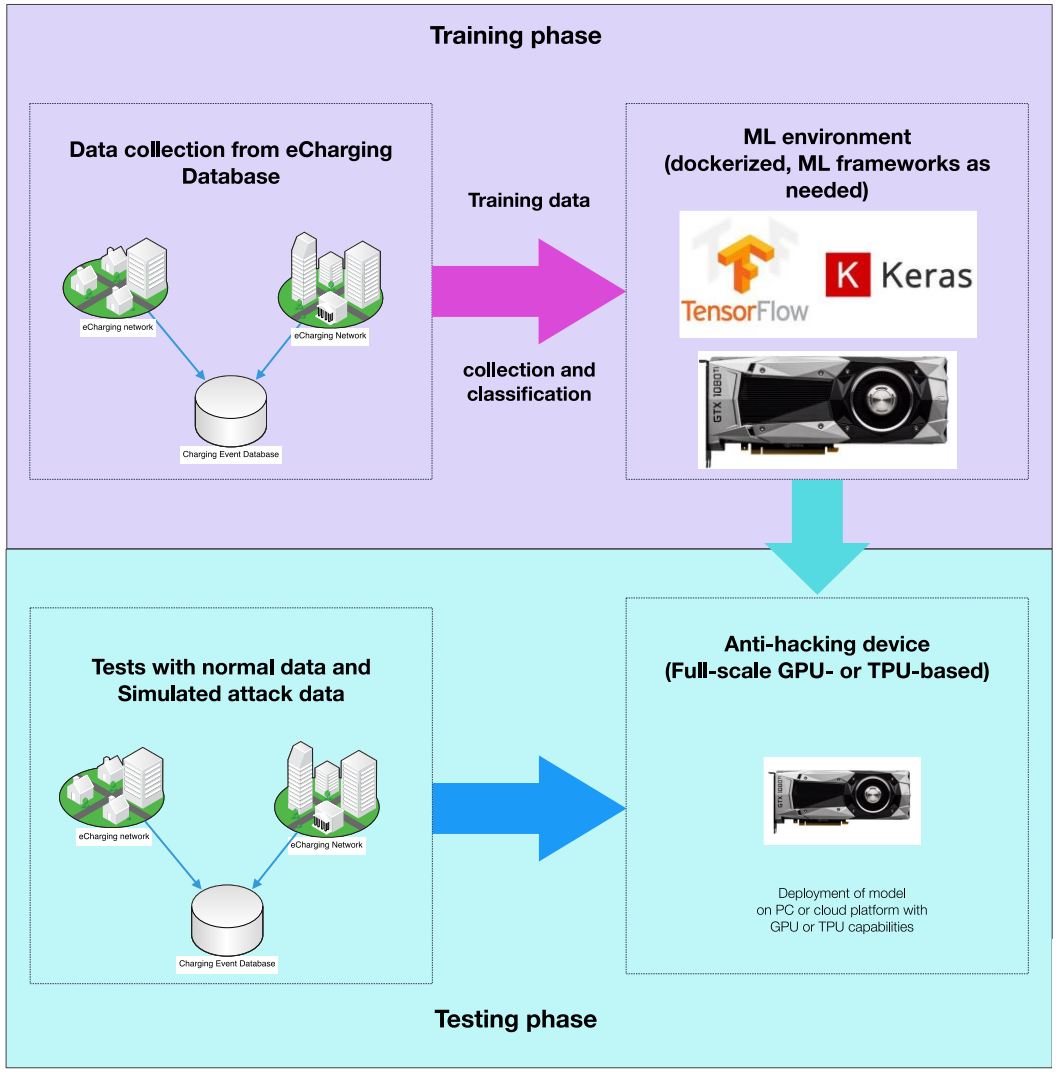

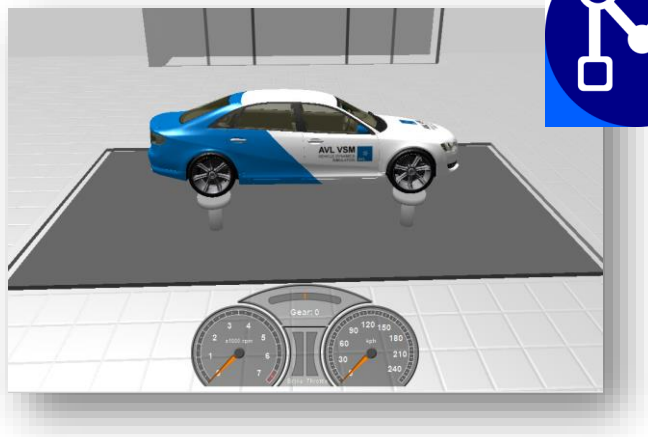

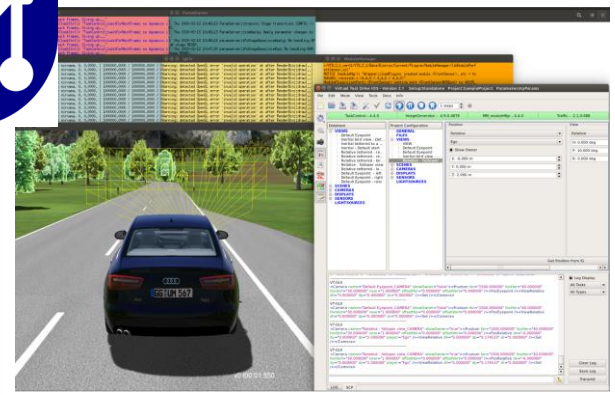

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THANK YOU

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