

ASECAP DAYS



MILANO 2024

 **Beyond Roads**
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Challenges & opportunities in achieving net-zero

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Demonstrate the ability to reduce congestion, accident risk and pollution by influencing drivers' behavior in a real setting with
real customers



Road Safety - Reduce traffic accidents.

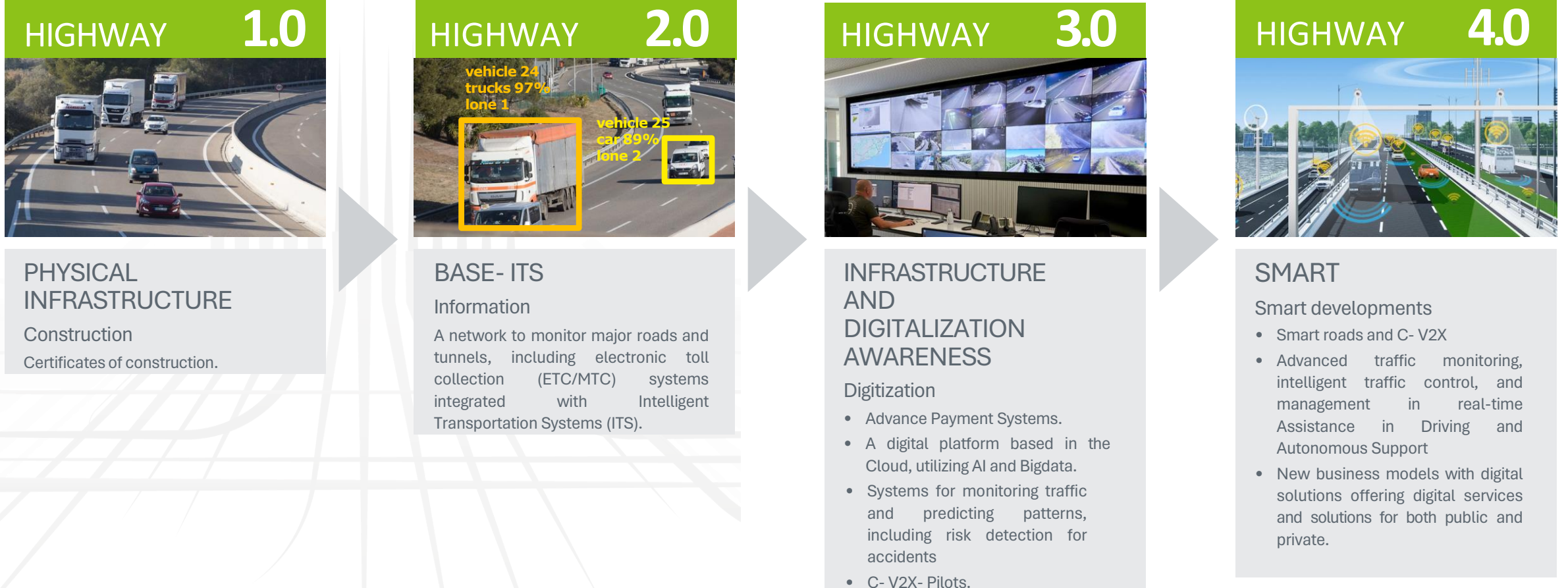


Traffic efficiency - Prevent congestion and improve mobility.

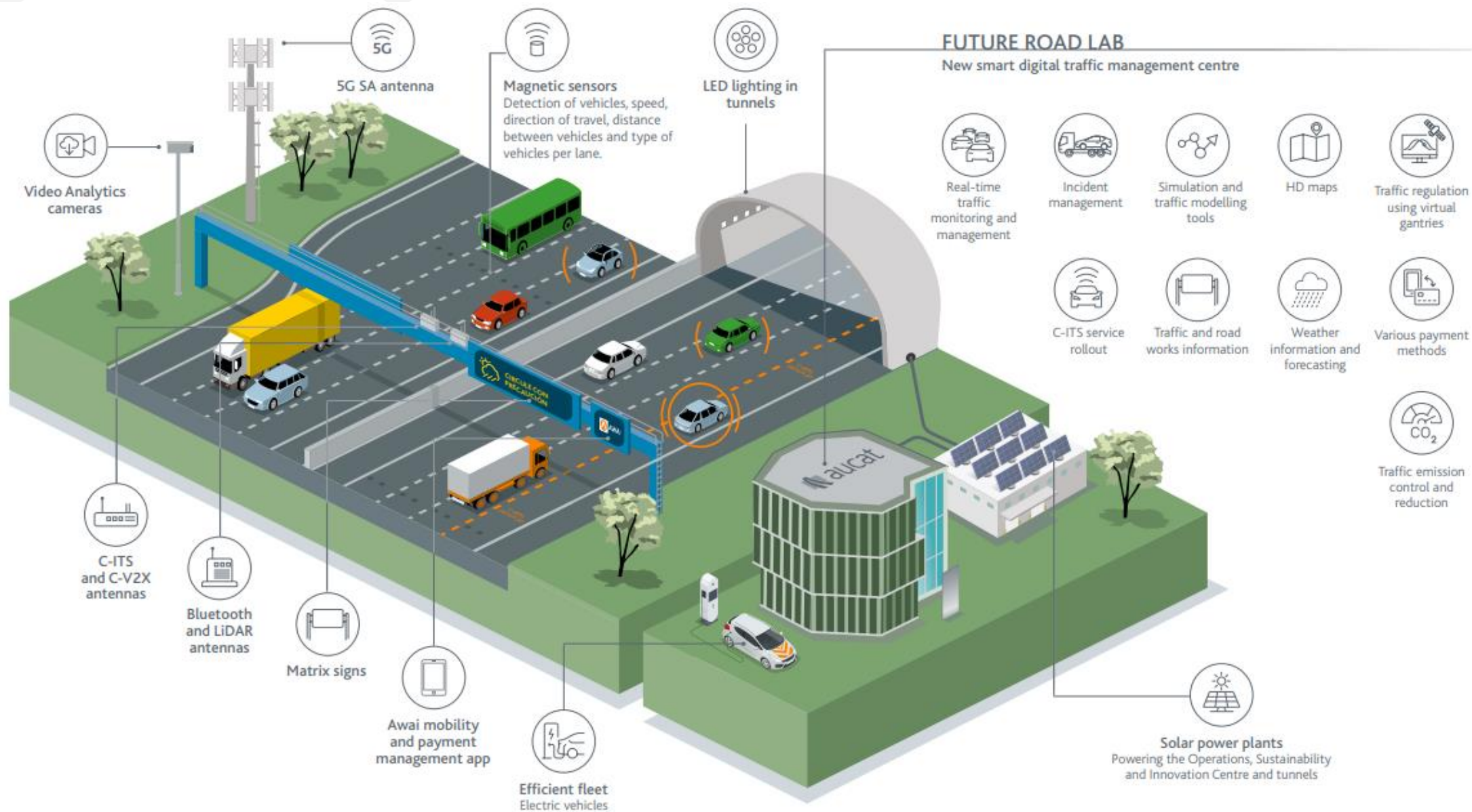


Environment – Reduce pollution and comply with current air quality legislation.

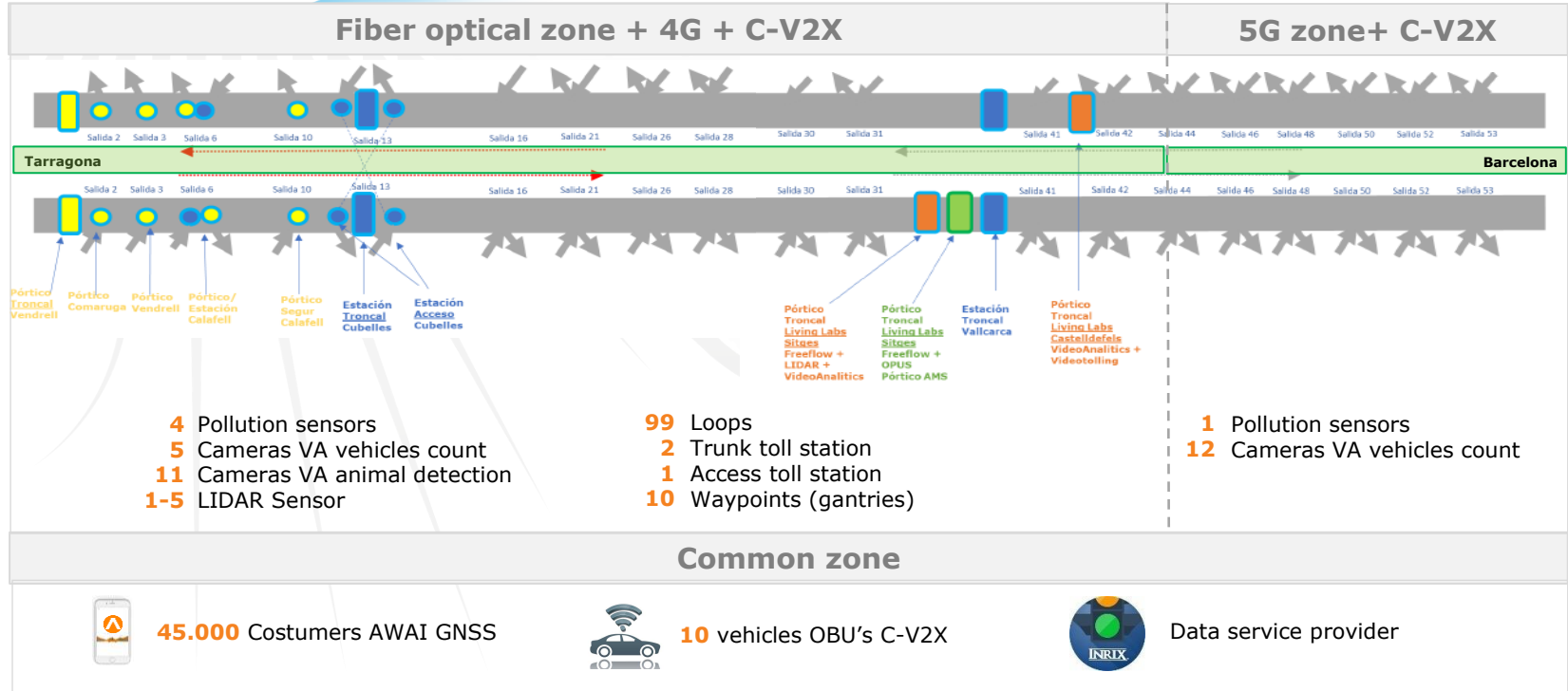
Transitioning from infrastructure operator to mobility operator



Future Road Lab

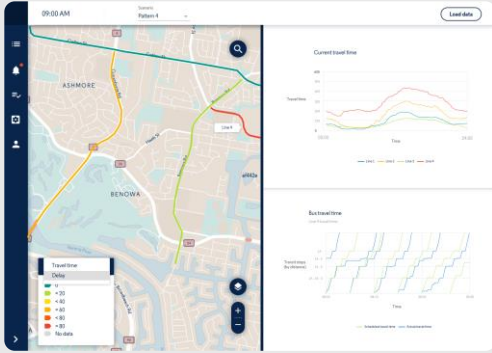


Future Road Lab: Spanish Lab



Future Road Lab

Understand



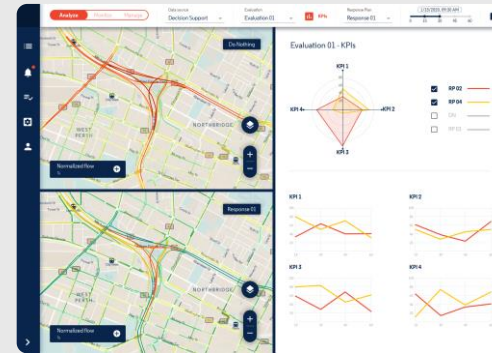
Understand the performance and mobility of the transport network. Identify problems as early as possible.

Predict



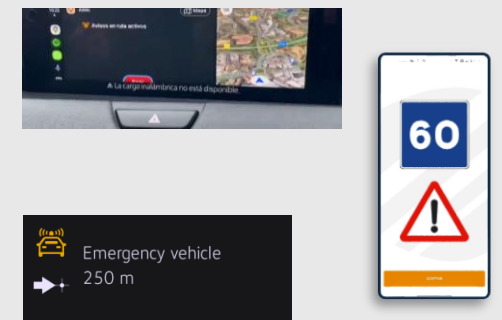
Forecast what will happen to anticipate impacts instead of reacting to them.

Decide



Decide the best way to react and achieve a better future outcome than expected

Communicate

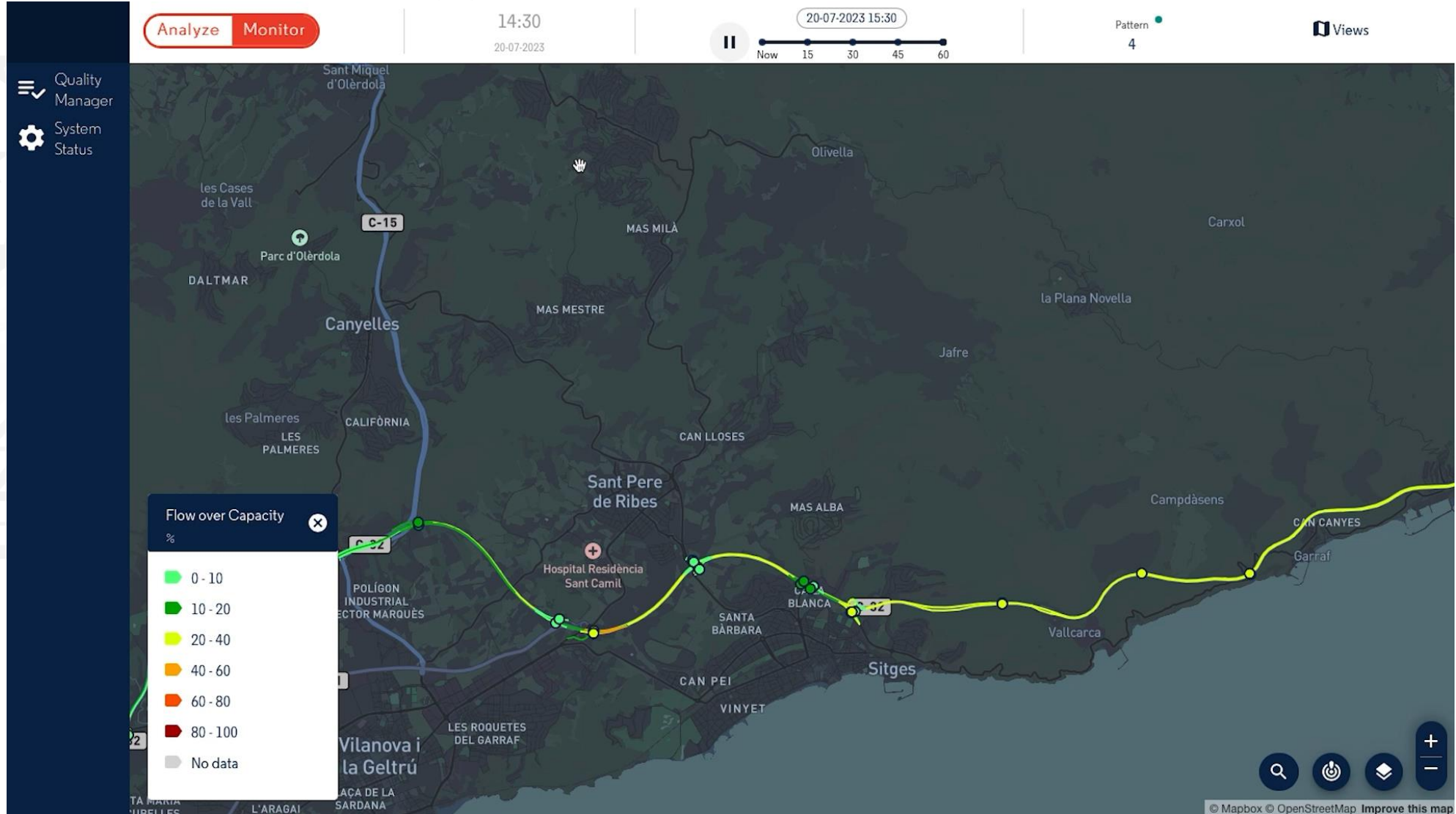


Transmit traffic strategies to connected vehicles and VMS. Group of them or individual

- **Monitoring** traffic in real time.
- **Monitoring** emissions of CO₂, NO₂ and NO_x in real time.
- **Predicting** future traffic scenarios (congestion and risk accidents)
- **Automatic detection** of objects, animals, or vehicles on the road.
- **Adverse weather conditions:** heavy rain, strong wind, etc.

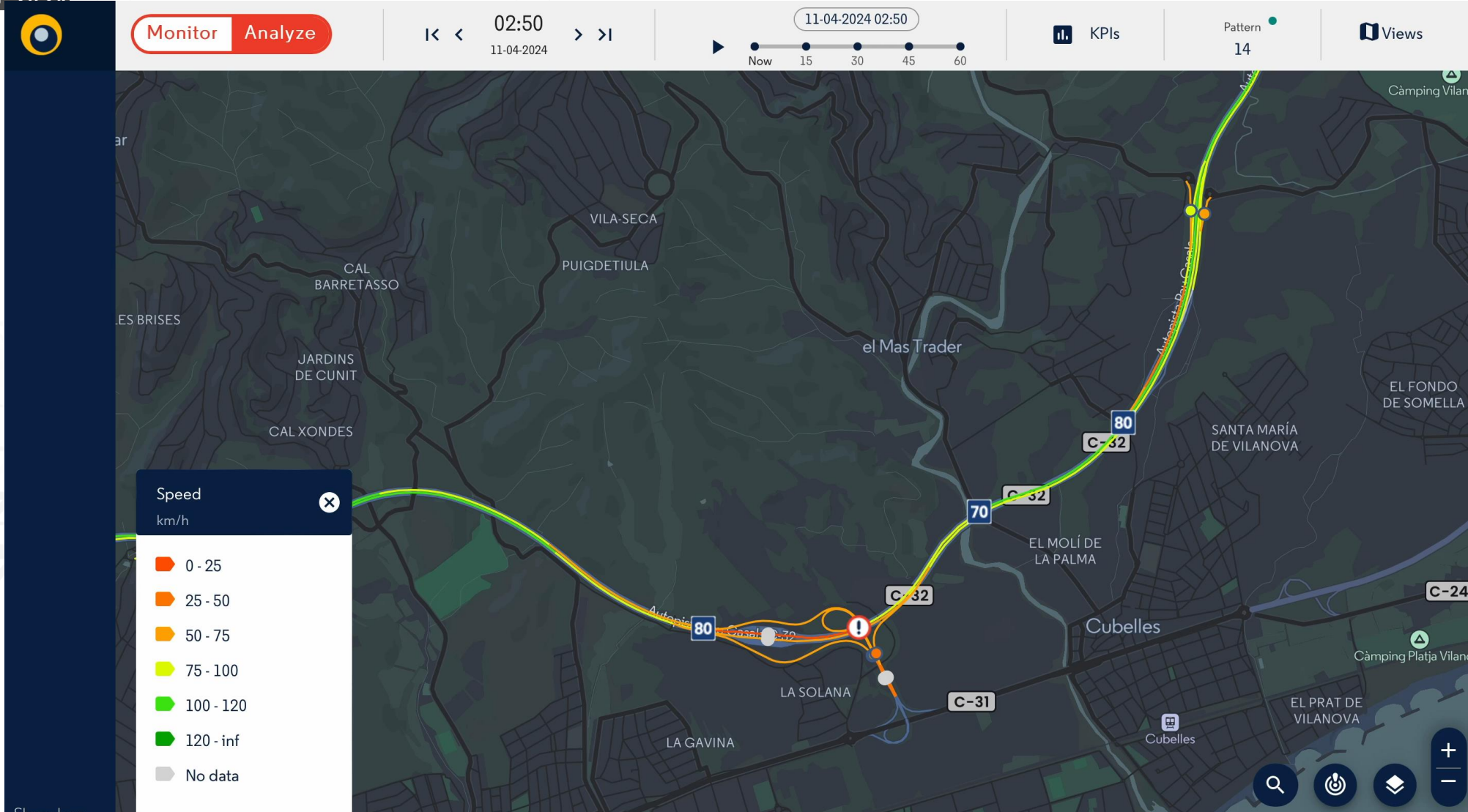
- **Propose strategies** to enhance mobility and road safety
- **Communicate** strategies to drivers and connected vehicles
- **Speed recommendations** to reduce accident risk, improve traffic flow, or avoid exceeding NO₂ and NO_x emission limits.
- In case of pay-per-use, **incentivize** users to improve mobility or charge based on the **vehicle's emissions**

Understand Flow and velocity prediction



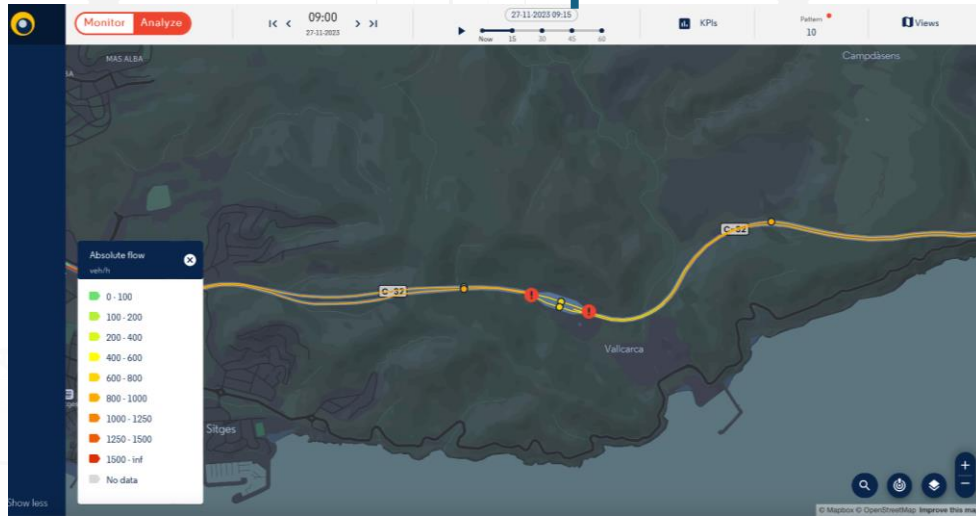


Incident detection and speed recommendation



Other Cases

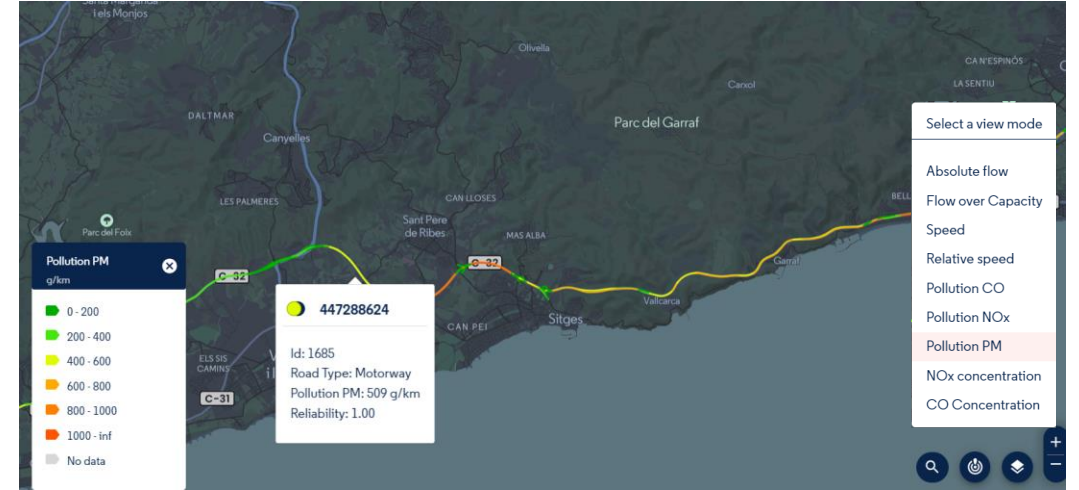
Accident risk prediction



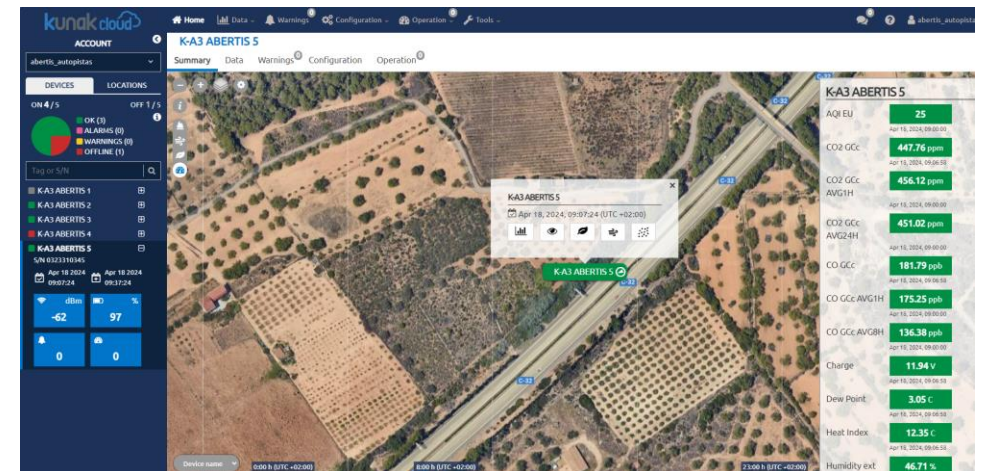
Automatic detection of animals



Traffic emissions



Environmental pollution

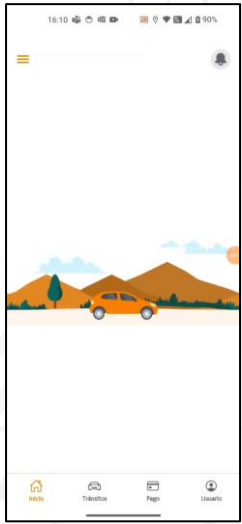


Communicate with drivers

AWAI APP

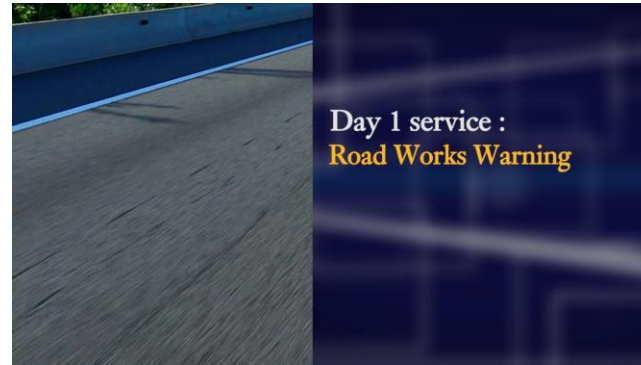


Speed Recommendation



Android Aut. & Apple Car

Connected Vehicles



VMS



Relevant projects

CRETA

- Based on pollution algorithms and risk accidents, the recommended speed will be determined and, depending on its **compliance**, a discount will be made on the toll tariff.
- Sending at the **recommended speed**, based on pollution algorithms and risk accidents.
- Detection of the speed, category acceleration and emissions of each vehicle to generate a **variable pricing** system in the section based on the intensity of the traffic and the real emissions of each vehicle. Generation of alerts for highly polluting vehicles.
- Replicated as much as possible using **CV2X** communications deployment (RSU/OBU).



Deploy an intelligent road based on the digitization of physical infrastructure, with a 5G communication network and C-V2X on critical road infrastructure such as **tunnels**, offering **CCAM services**.

This aims to enhance traffic flow, improve safety, and reduce the environmental impact generated.

Three use case

- Prediction and incident management
- Reduction of emissions
- Emergency vehicle priority



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**THANK
YOU**

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