Smart and sustainable technologies for the mobility of the future

Movilidad 2030: Summary

Start

• Novemver 1, 2020

Duration

• 44 months

Coordinator:

• Indra

Budget:

• 8,7 M€

CDTI financing:

• 5,9 M€

Call for proposals:

''Misiones CDTI''

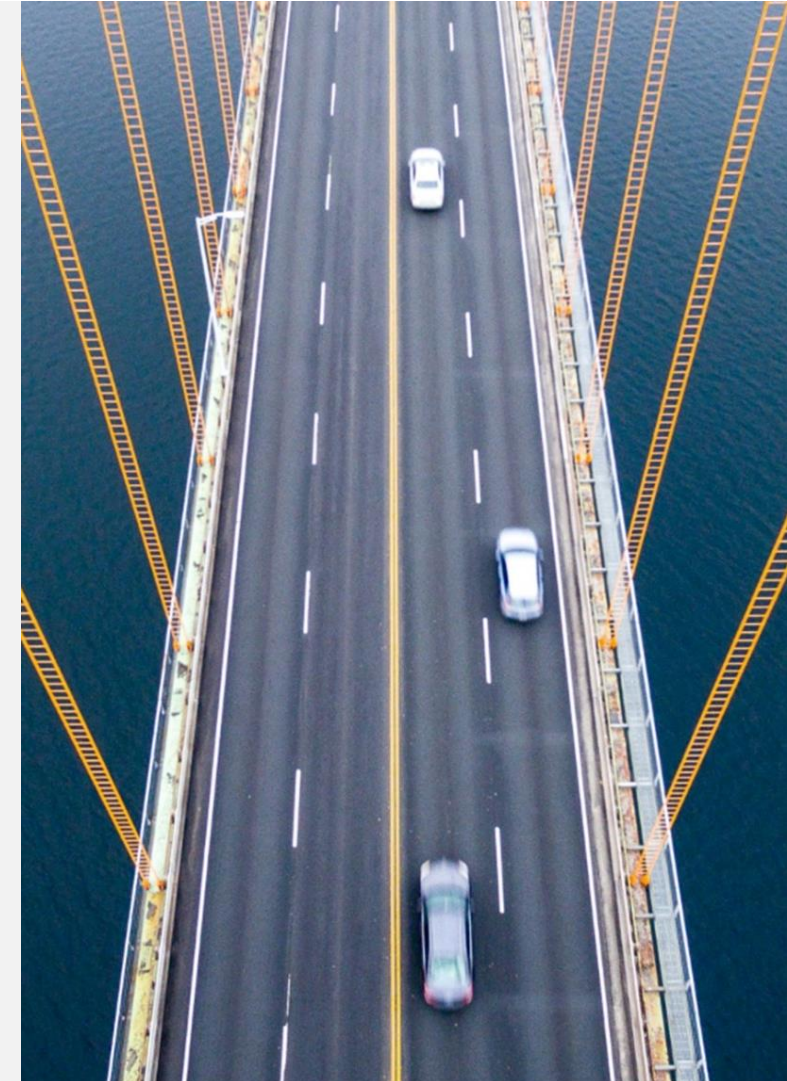Consortium formed by 6 technology expert partners from different mobility fields.

Driving smart and sustainable technologies for tomorrow's mobility

Movilidad 2030 develops the technologies of future "as a service" mobility for the safe, efficient and large-scale deployment of highly automated and connected vehicles (CAVs)

On-board

On-board systems for deployment of CAVs

- Trajectory planning systems
- Control systemsV2X communications systems
- Energy efficiency control systems
- Safety systems

Sustainability

Designing the sustainable mobility model of the future

- Wireless charging systems
- Autonomy prediction and route recommendation system

Infrastructure

Infrastructure technologies for intelligent mobility

- Vehicle classification and detection system
- Estimation of individual ecological footprint
- Payment systems Day 2" and "Day 3" C-ITS services
- Behavior prediction and identification

Regulation

Analysis, regulation, operation and control for new mobility

- Validation and evaluation scenarios
- Interoperability and use of data

Project Objectives

Smart mobility as a service

- Transformation of mobility habits towards a more efficient, sustainable and safe system, involving the main actors of the mobility value chain

1. Management systems for coexistence between CAVs of different levels of automation and conventional vehicles.

2. Development of a revolutionary prototype system for safe wireless charging of a light electric vehicle (EV)

3. Development of a new breakthrough model of scalable and elastic infrastructure data management architecture

4. Research and development of advanced "Day 2" and "Day 3" C-ITS services

5. Optimization of electric fleet and charging infrastructure management

6. Research of new requirements for mobility policies

Validation and Evaluation Scenarios (VES)

- Experimentation that responds to the reality that the developed technology aims to modify, improve and understand

- 6 VESs that carry out the validation and evaluation of the technologies, trying to reach a TRL 4 maturity

- Data and validations will be recreated in adapted and simulated environments, but always keeping the focus on the final deployment environment, its particular and most representative conditions.

VES 1. Management of cooperative incidents

- On-board perception systems

- V2X communication (sending of CPM messages)

VES 2. E-Valet Parking

- Free space detection

- Pedestrian detection in parking lots

- V2X communication (free recharging points)

VES 3. Monitoring of CAVs behavior

- RSS mathematical model

- V2X communication (sending CAM messages)

- LIDAR characterization

VES 4. Efficiency optimization of fleets and electric vehicle routes

- Route planner

- Vehicle perception

- Infrastructure-vehicle communication

VES 5. Intelligent automated inductive charging

- Wireless charging

- Detection of metal objects and living beings

VES 6. Access control management

- Low Emission Zones

- Ecological footprint per Passenger

- Smartphone payment

Conclusions

Movilidad 2030 will advance the design of a sustainable mobility of the future, safer and more respectful of people and the environment, through the development of new on-board vehicle systems, infrastructure technologies and traffic regulation, analysis, operation and control systems, with an integrated vision.

It will thus contribute to the objectives set out in sustainable mobility for 2030 at both national and international level, such as those included in the UN Sustainable Development Goals.

Movilidad 2030 seeks to improve the quality of life of the population using technology in road transportation systems.

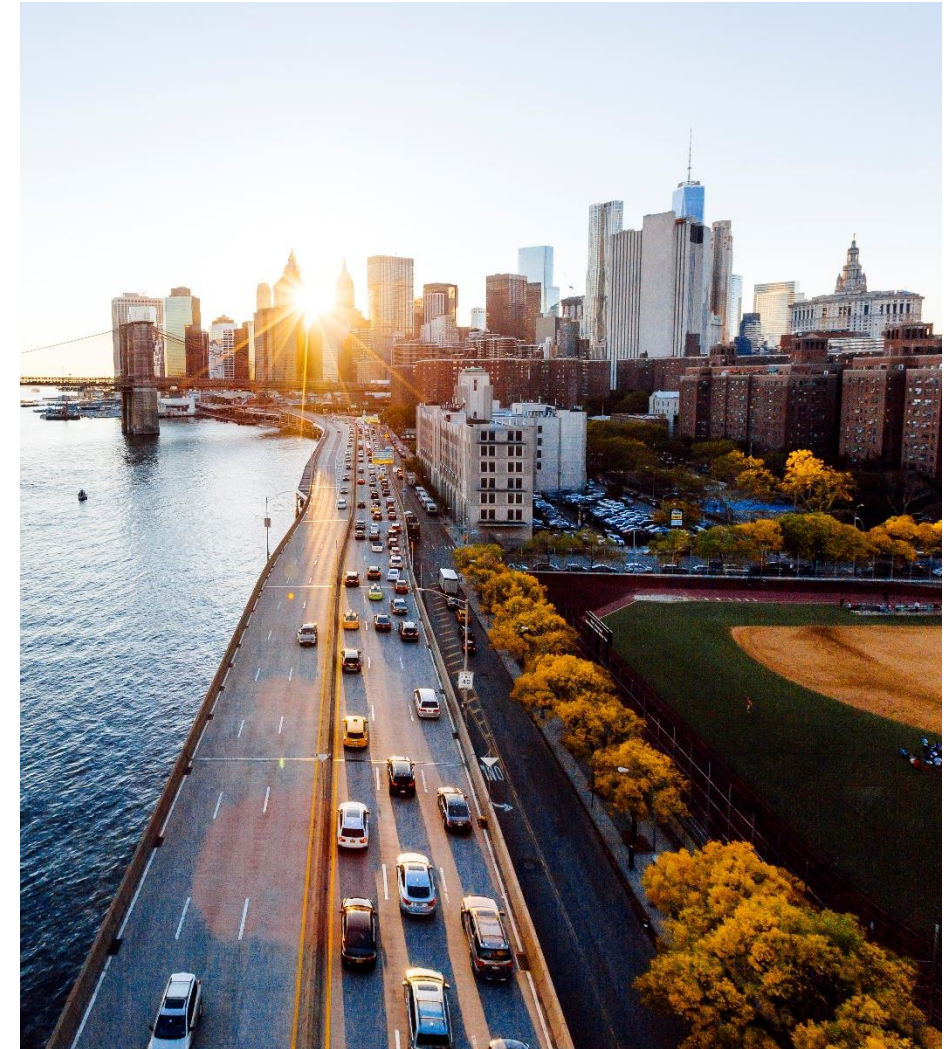## Key technologies in the project

C-ITS	IoT	Deep learning	Big Data	LIDAR	Inteligencia Artificial