



Serveis i Innovació pel Vehicle Connectat i Autònom

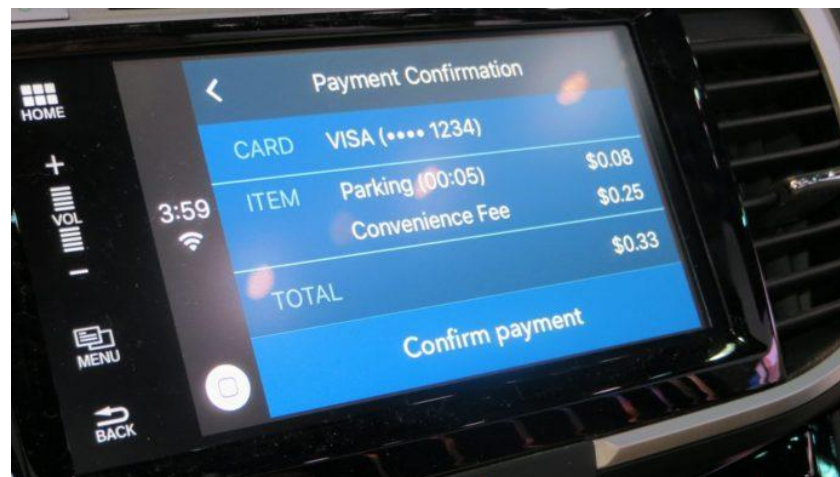
II FORUM DEL VEHICLE AUTONOM I CONNECTAT

Què ens aporten els sistemes cooperatius i autònoms?



Reducció accidents

- 26.000 morts/any a UE
- 1% PIB
- Congestió generada



Seveis connectats

- Parking
- Combustible
- Diagnosi remota



Millor gestió trànsit

- Detecció immediata incidents
- In-vehicle signals (congestió, obres...)
- Temps de viatge acurat

SERVEIS



Diagnosi
Remota



Informació
Trànsit
Temps
Real



App

INNOVACIÓ



BRIDGING GAPS FOR THE ADOPTION OF AUTOMATED VEHICLES





43 European cities

Starting with C-ITS deployment in urban areas

By 2019

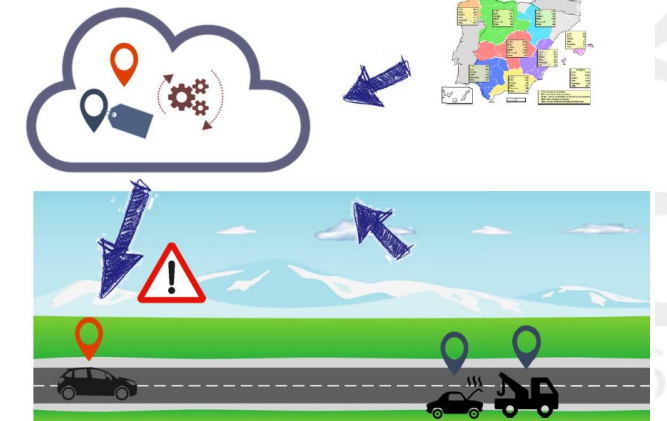
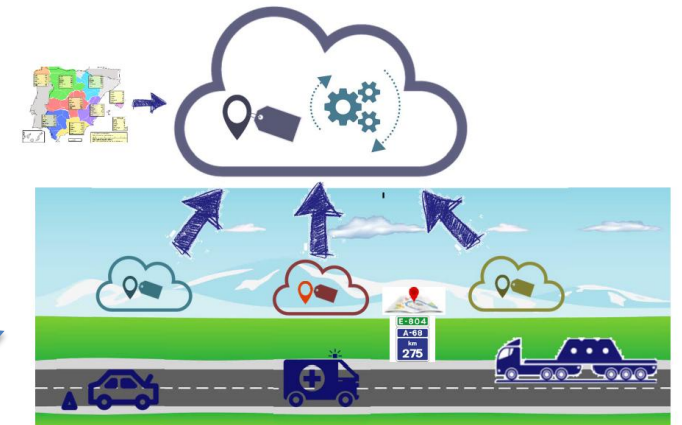
6,000 km of European road sections
will be equipped with C-ITS equipment

By 2019

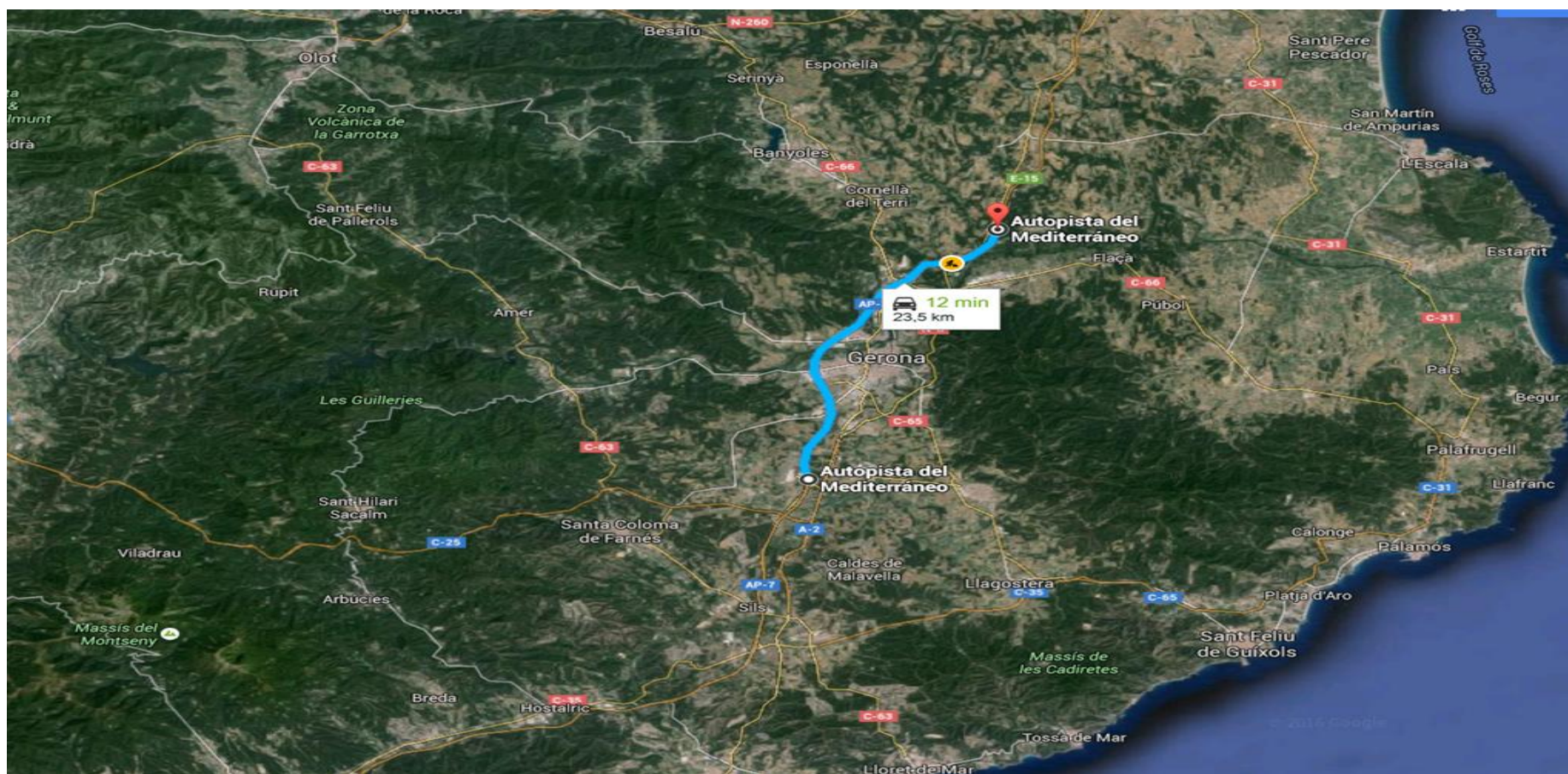
100,000 km of European roads in total
will be covered by C-ITS services

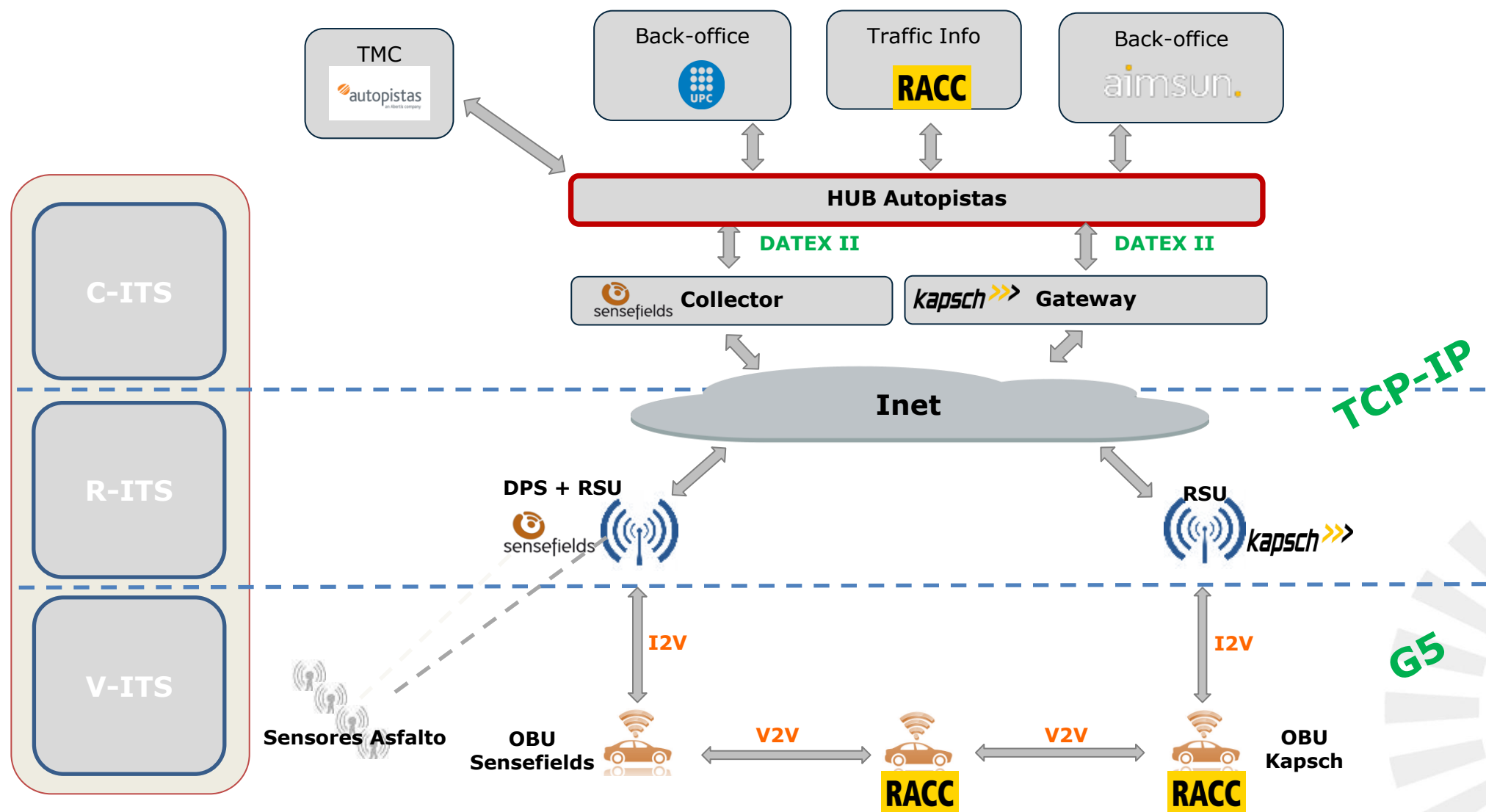


DGT 3.0



Test-site: 35 km





G5





C-ITS Day-1 services

Road Works Warning

Vehicle aturat

Shockwave damping

Condicions clima

Límits de velocitat (in –vehicle)



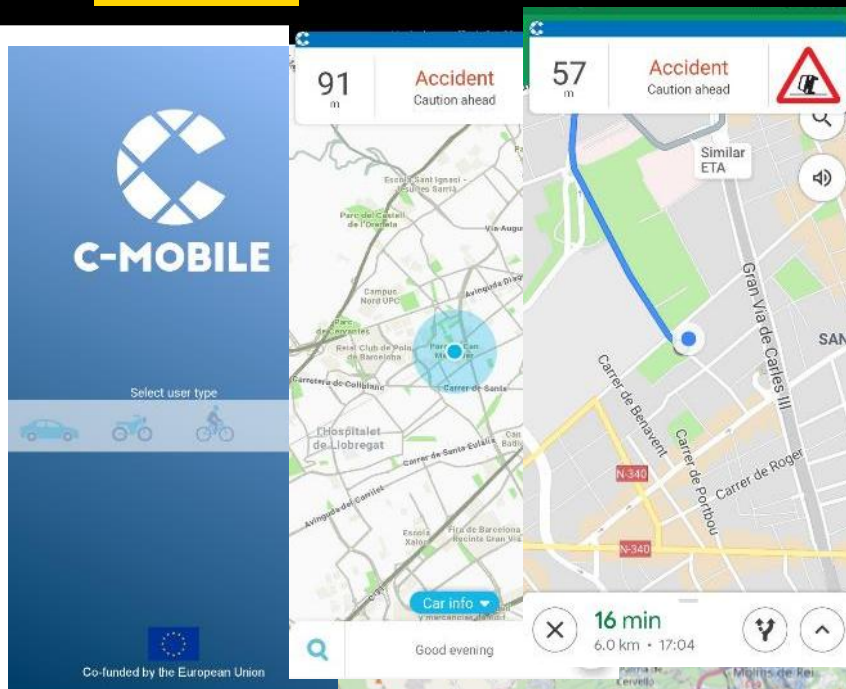
- / Barcelona
- / Copenhagen
- / Thessaloniki
- / Bilbao
- / Vigo
- / Newcastle
- / Bordeaux
- / North Brabant



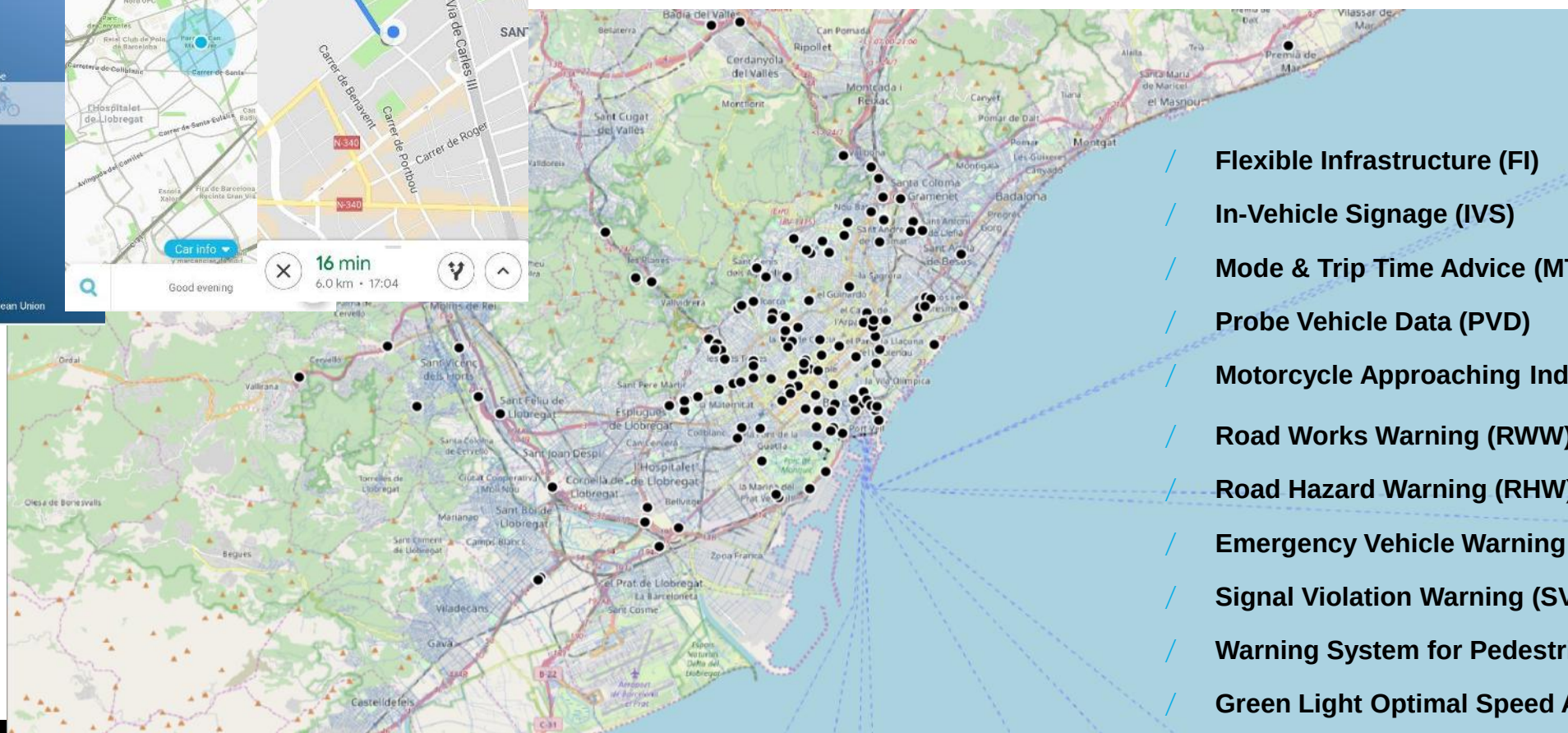
Summary

- / 11 C-ITS services
- / Android app
- / First stage (50 users) → validation
- / Second stage → large-scale operation (+700 users)





- Incidents reportats via app



- / Flexible Infrastructure (FI)
- / In-Vehicle Signage (IVS)
- / Mode & Trip Time Advice (MTTA)
- / Probe Vehicle Data (PVD)
- / Motorcycle Approaching Indication (MAI)
- / Road Works Warning (RWW)
- / Road Hazard Warning (RHW)
- / Emergency Vehicle Warning (EVW)
- / Signal Violation Warning (SVW)
- / Warning System for Pedestrian (WSP)
- / Green Light Optimal Speed Advisory (GLOSA)

- ✓ Millorar la seguretat i l'adopció en el mercat dels vehicles autònoms.
- ✓ Generar confiança i acceptació no només per part dels usuaris finals, sinó també per part de tots els actors involucrats (responsables de polítiques, organismes de homologació, certificadors, companyies asseguradores, autoescoles, etc.)

Això s'aconsegueix amb un enfoc multidisciplinari, **estudiant els requisits i expectatives dels conductors** i altres parts interessades al respecte de l'ús de vehicles autònoms.

Enfoc iteratiu basat en proves (entorns controlats i carretera oberta) i **centrat en l'usuari**, en tres etapes:

- Sistemes existents
- Prototips virtuals / simulació
- Prototips en desenvolupament

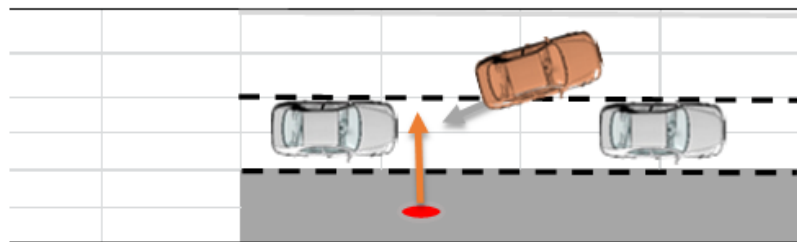


Use cases

AD & intentions Testing scenarios

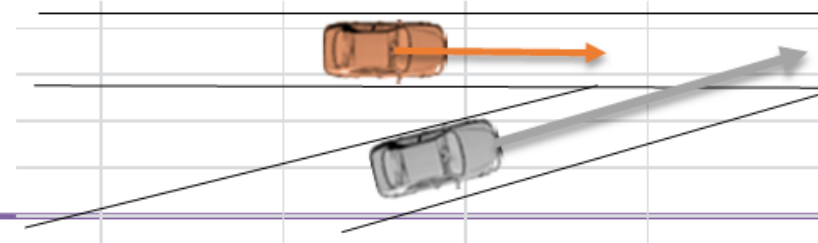
During auto-parking

little VRU-pedestrian proximity



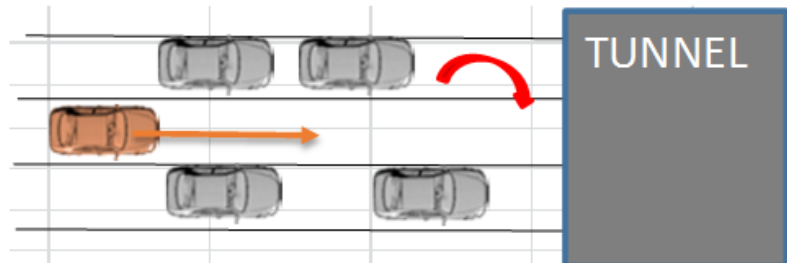
AD Capability to manage aggressive entering vehicles

2 scenarios : entering has priority or not



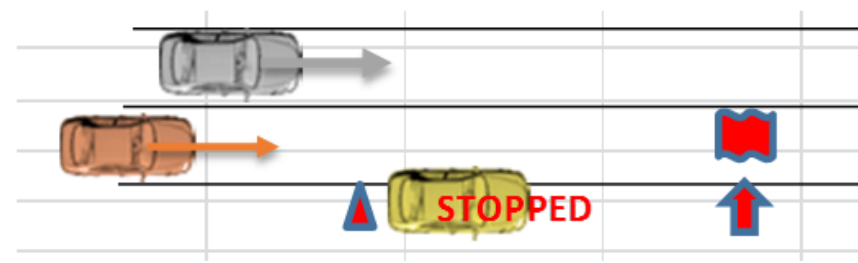
Suddenly difficult perception

caused by tunnels

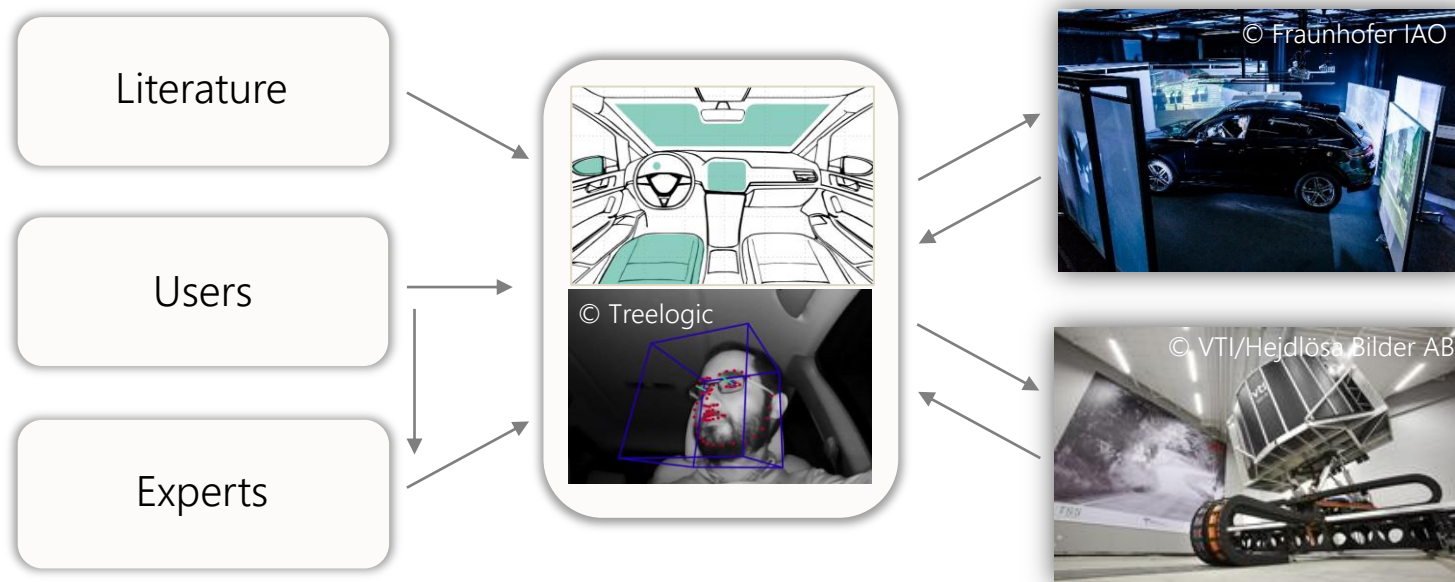


Maneuvers & transition

if obstacles



VEHICLE-DRIVER INTERACTION AND DRIVER MONITORING CONCEPTS



01 | REQUIREMENTS

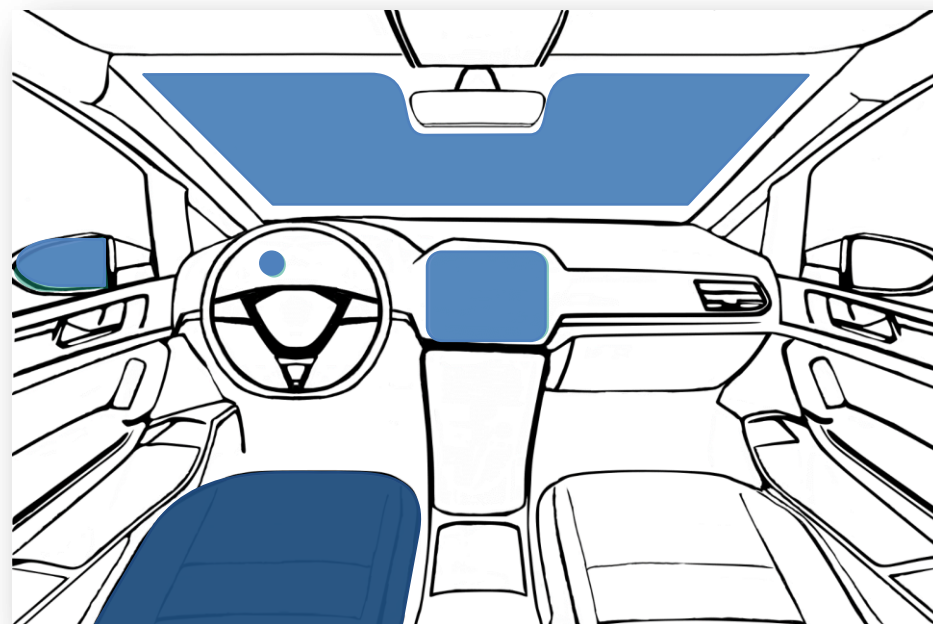
02 | CONCEPTS

03 | EVALUATION

VEHICLE-DRIVER INTERACTION CONCEPTS – HMI ELEMENTS

SIDE-VIEW MIRROR
detected objects in
blind spot

INSTRUMENT CLUSTER
Control light indicates
activity of the
automated system



SEAT VIBRATION
to re-engage distracted
drivers

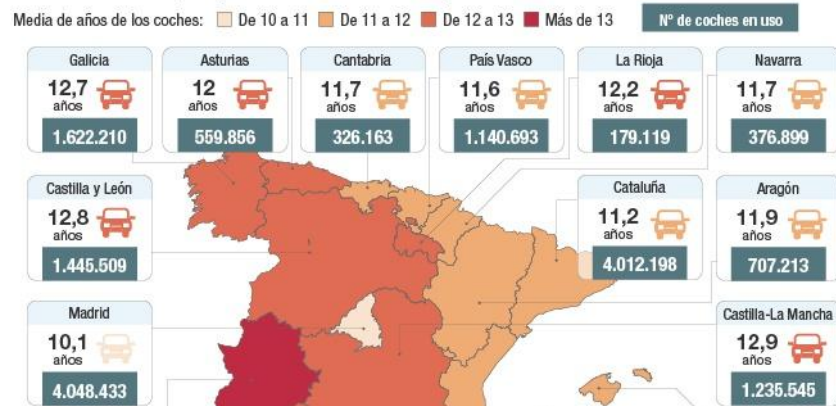
WINDSCREEN
augmented reality to mark
detected objects (e.g.
pedestrians)

CENTRE STACK
aerial view of the
vehicle's
environment

ACOUSTIC SIGNALS
should only be used in
case of emergency



Edad media del parque de vehículos en España

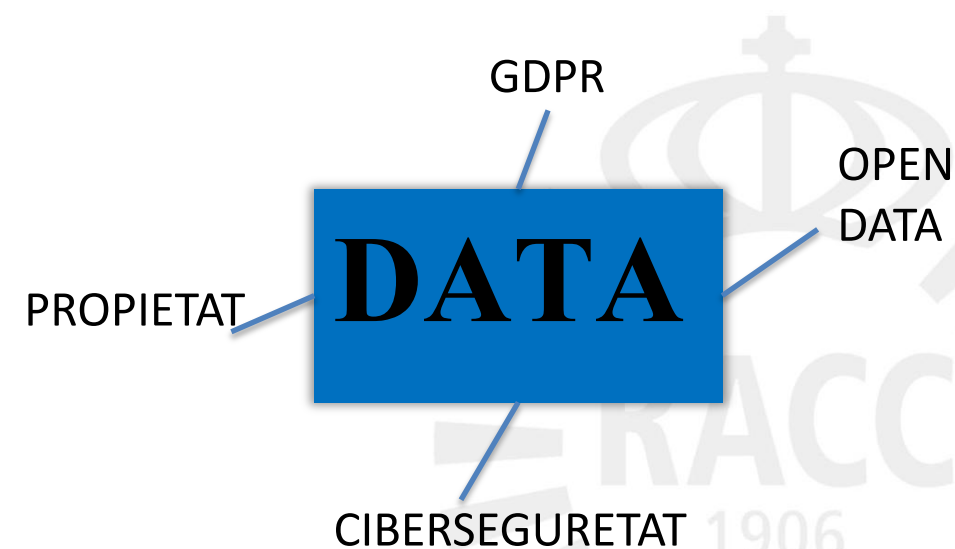


Parc envellit



Inversions

Estandarització
Protocol V2X 802.11p
5G





RACC

GRÀCIES