49th ASECAP DAYS

Decarbonizing Road Infrastructure : Challenges, Perspectives and Actions in Tough Economy

ASECAP DAYS
BRUSSELS 2022

Hotel Marriott Grand Place, Brussels

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BRUSSELS 2022

C-ITS Slovenia – organizing the system for maximum efficiency

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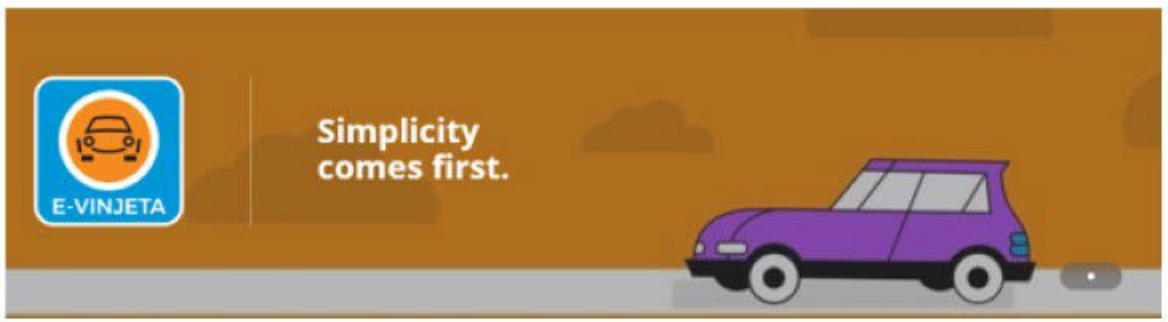
DARS

Digitalization in DARS

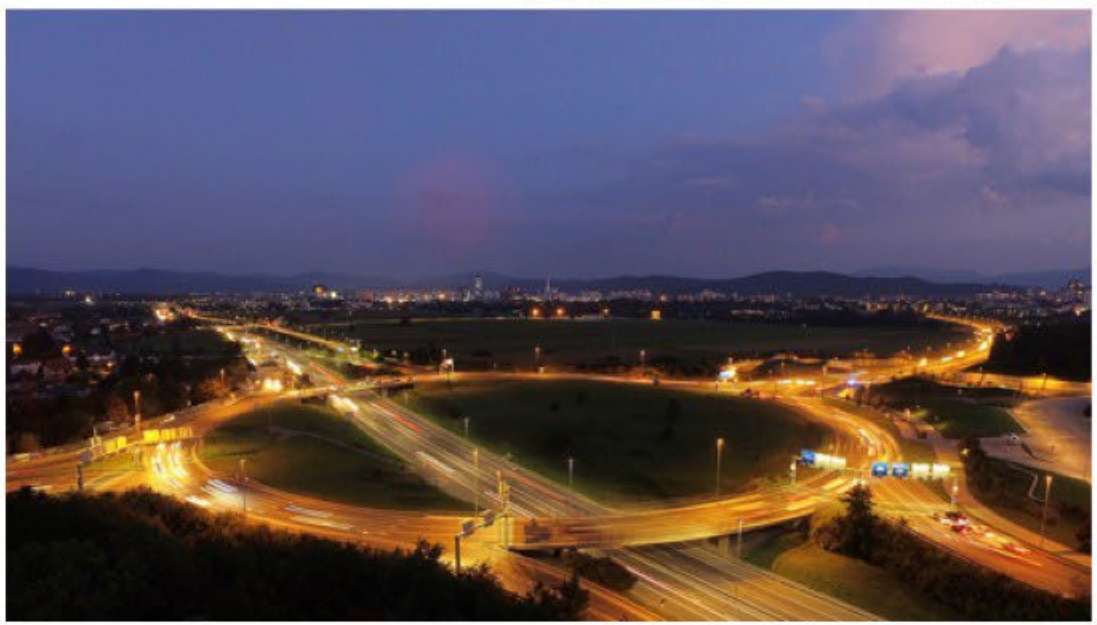
Running on several areas:

- Toll collection
- Maintenance
- Back office support
- Motorway and traffic management



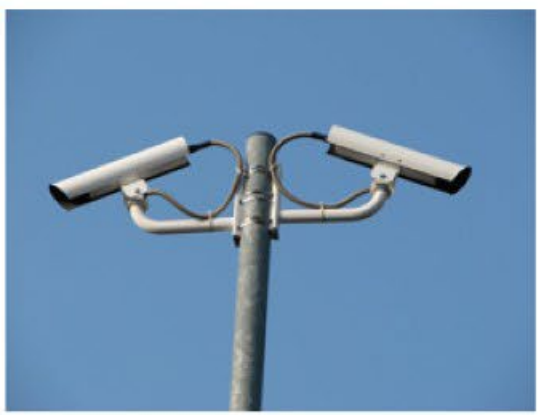
DARS operates…

- 623 km of motorways and expressways
- 146 km of junctions
- 22 km of interchange junctions
- 51 km of other roads



DARS operates…

- 216 VMS
- 1550 cameras
- 237 traffic counters
- 65 weather stations
- Microwave detectors



Digitalization in traffic management

3 basic systems:

- Traffic Management for open road
- Tunnel Management
- Traffic Information

PIC @

C-Roads Slovenia

- Basic facts EU:
  - Includes over 30 countries and 50 cities
  - 1 mio vehicles in EU equiped with C-ITS
  - 20.000 km of roads in EU equiped with microwave (G5) C-ITS technology
  - Hybrid C-ITS technology implemented on 100.000 km of roads in EU

- Basic facts SLO:
  - Pilot implementations within C-Roads I in II
  - G5 technology – A1 motorway section Postojna - Divača
  - Cellular technology – whole motorway network
  - Hybrid solution
  - Project duration: 2016-2021

- C-ITS advatages:
  - Increas of traffic safety and efficiency
  - Real time traffic information
  - Congestion and pollution reduction
  - Crossborder interoperability
  - Preparation for next levels of autonomous driving

C-Roads Slovenia CITS-G5

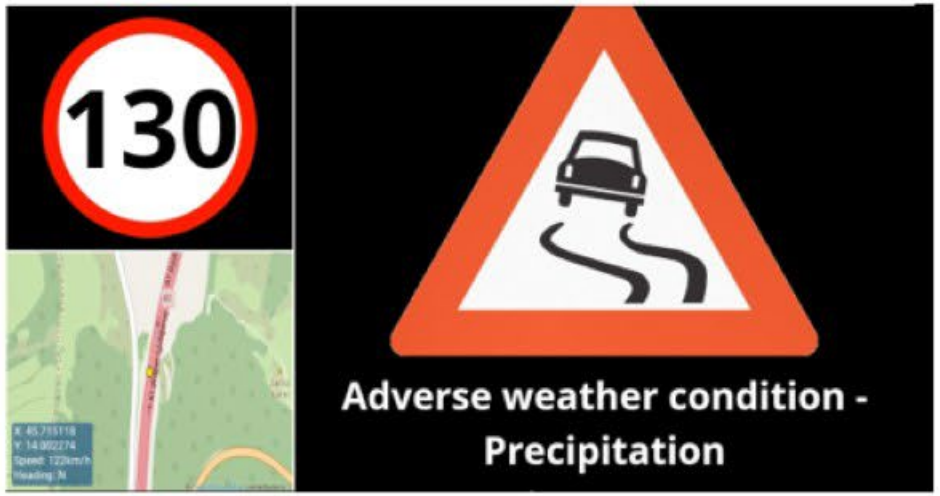
Area of implementation: section Postojna – Divača (30 km)

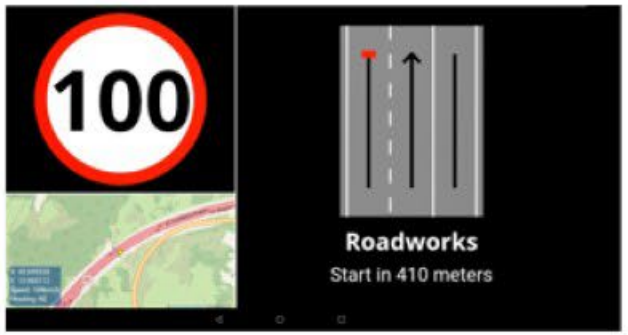
C-Roads Slovenia C-ITS – G5

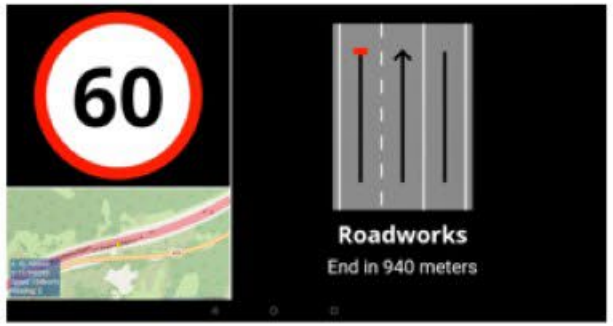
Equipement for C-ITS – G5 pilot

C-Roads Slovenia CITS-G5

In-vehicle messages - example

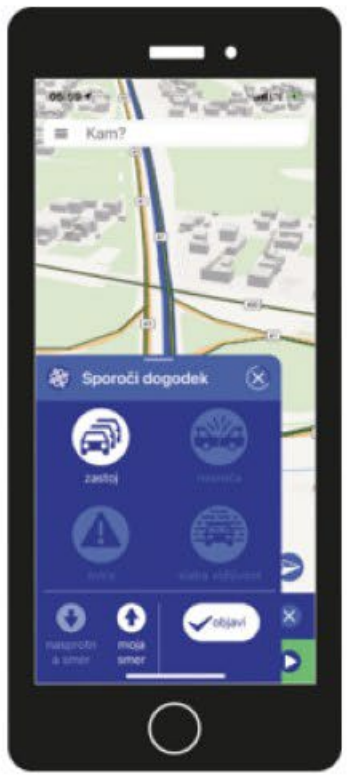






C-Roads Slovenia – cellular

Area of implementation: whole motorway network in Slovenia Connected to mobile app Promet+



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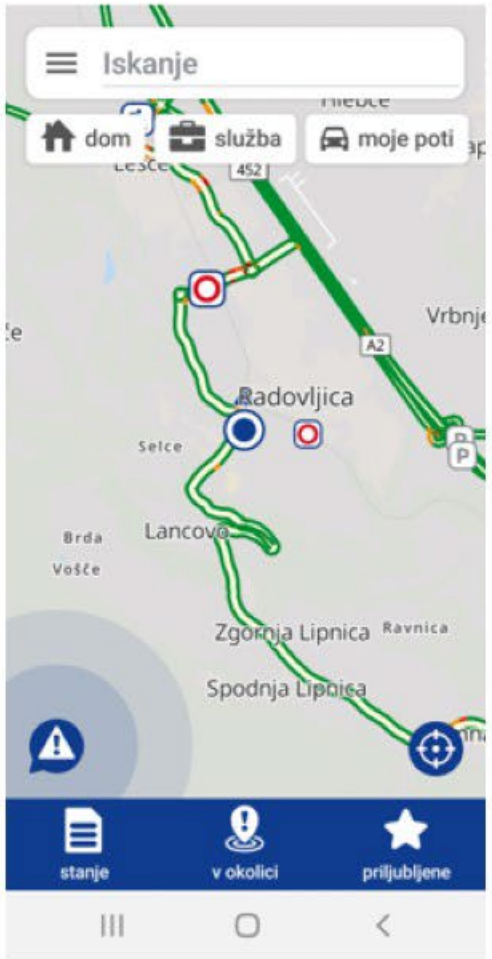
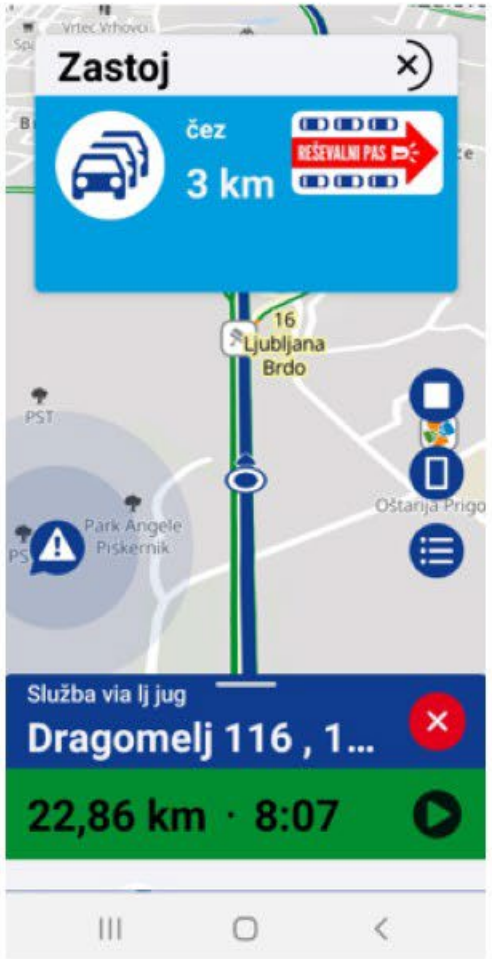
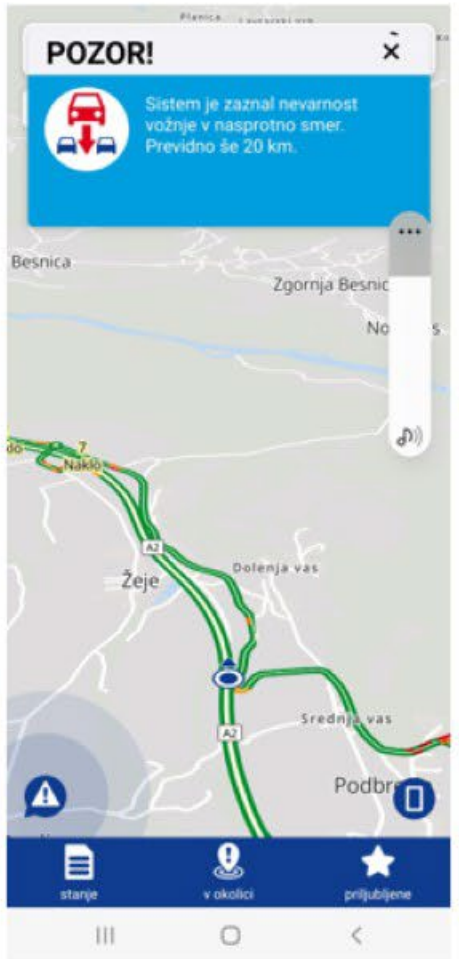
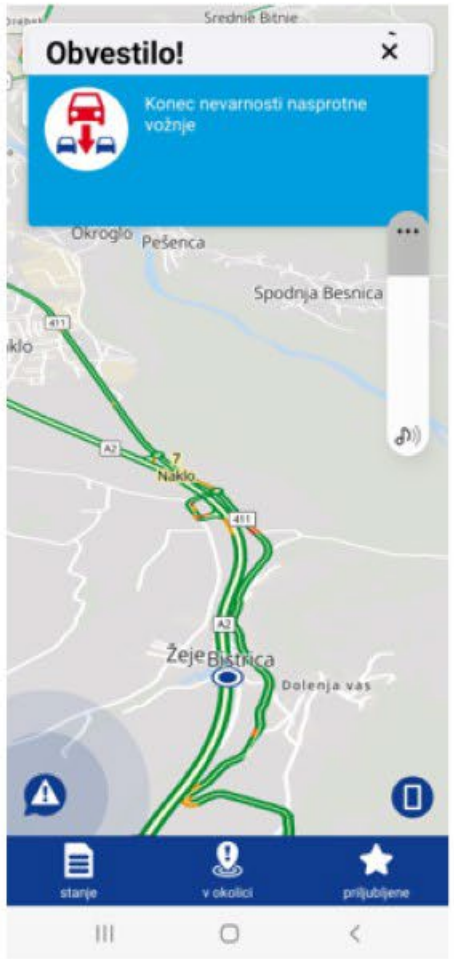
MINISTRY OF INFRASTRUCTURE

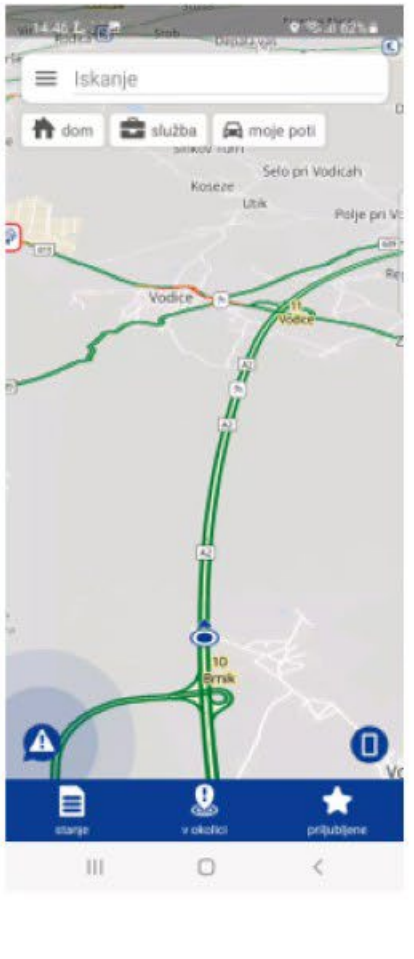
Digitalization in traffic: app Promet+ as C-ITS on board unit (OBU)



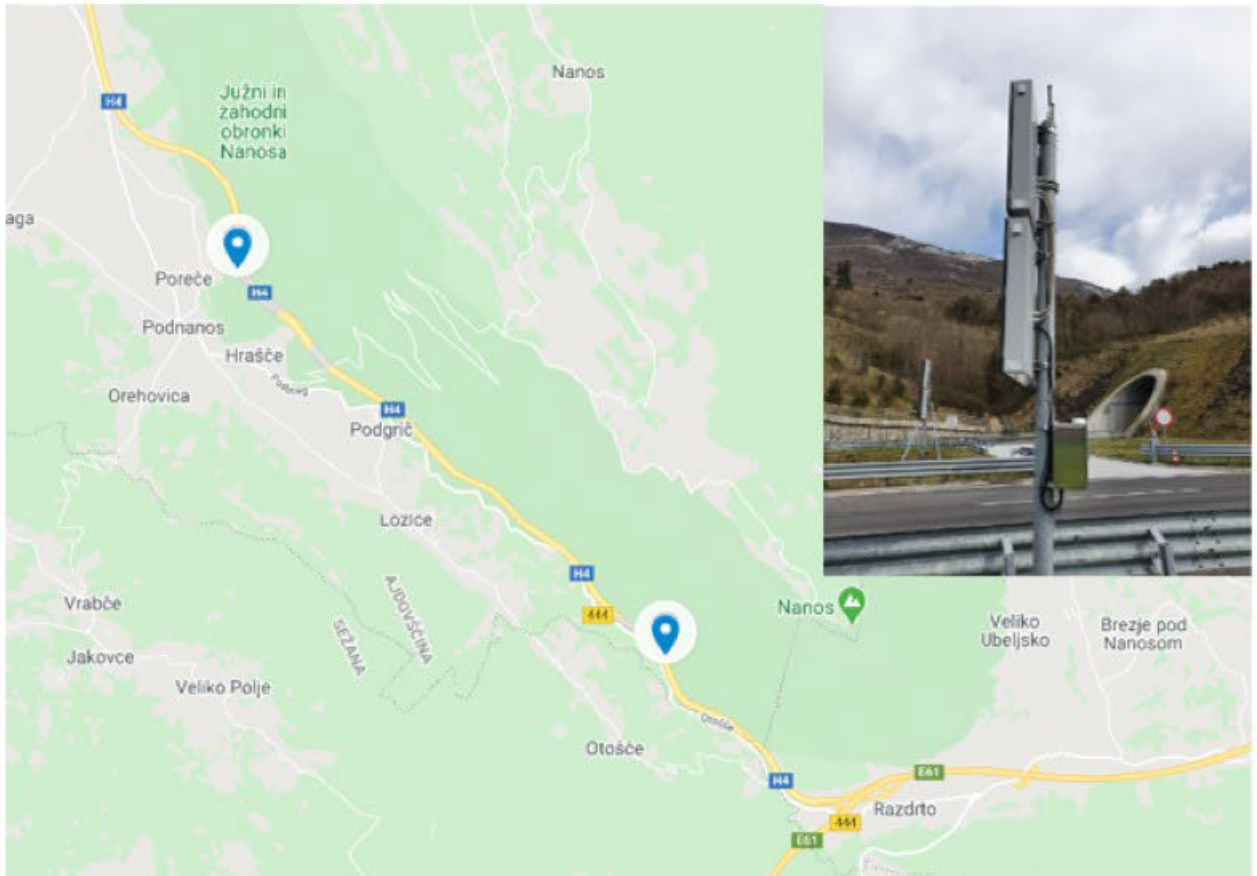








C-ITS in tunnels – connection of tunnel systems to C-ITS

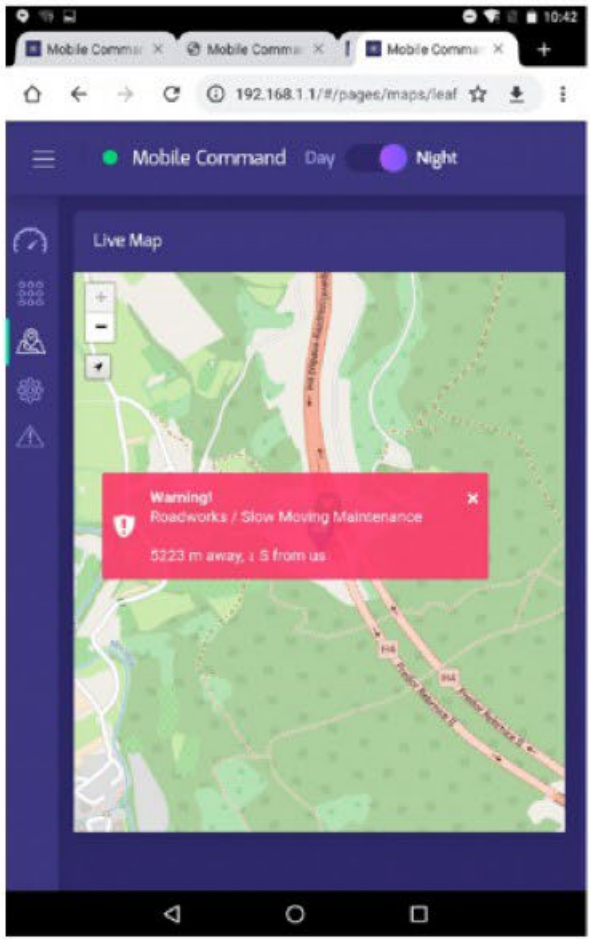


Use cases:

- Wrong way driving
- Exceeded vehicle height
- Stopped vehicle
- Roadworks in tunnel
- Fire in tunnel
- Low visibility (fog, smoke)
- Tunnel closure
- Strong wind (exceeded values of air conditions in tunnel)

C-ITS in tunnels

In-vehicle messages - example



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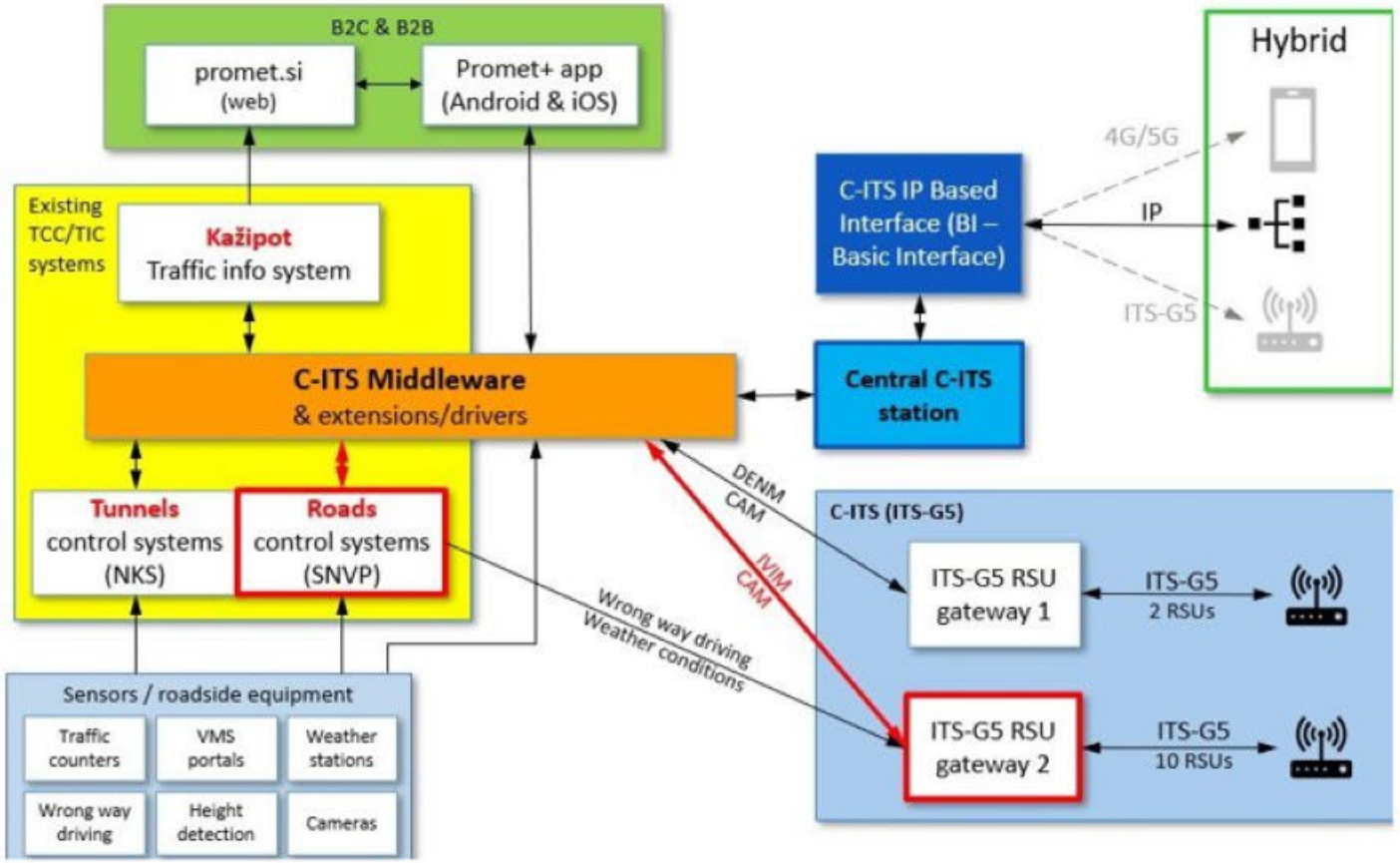
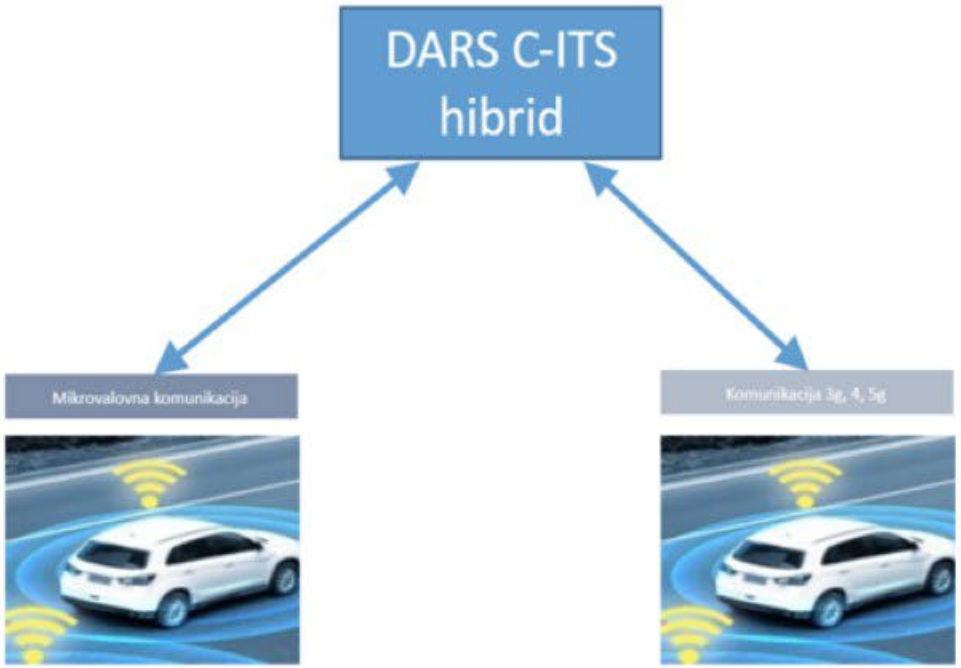
Digitalization in traffic: the road to hybrid C-ITS

- Example of hybrid system
- Central C-ITS station
- National TMC



Implementation of hybrid C-ITS



Slovenia was the first country within C-Roads (WG2, TF4) that succesfully connected its hybrid solution with all members of the C-Roads that developed hybrid systems mature enough to connect with others.

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THANK YOU FOR YOUR ATTENTION

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