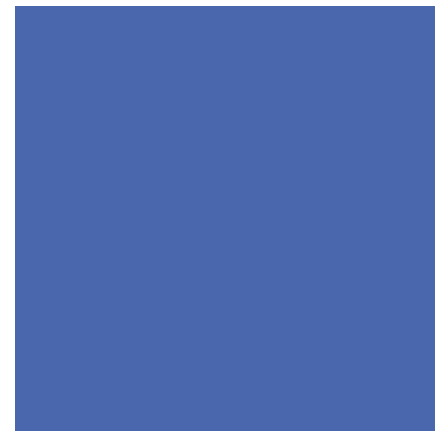
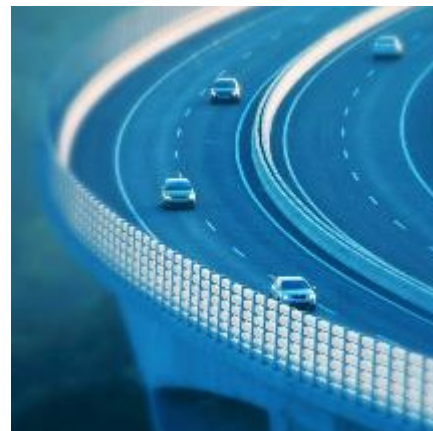


## S6: Road Safety in the Danube region with focus on infrastructure



**DARS**



### *Motorway safety - Slovenia case*

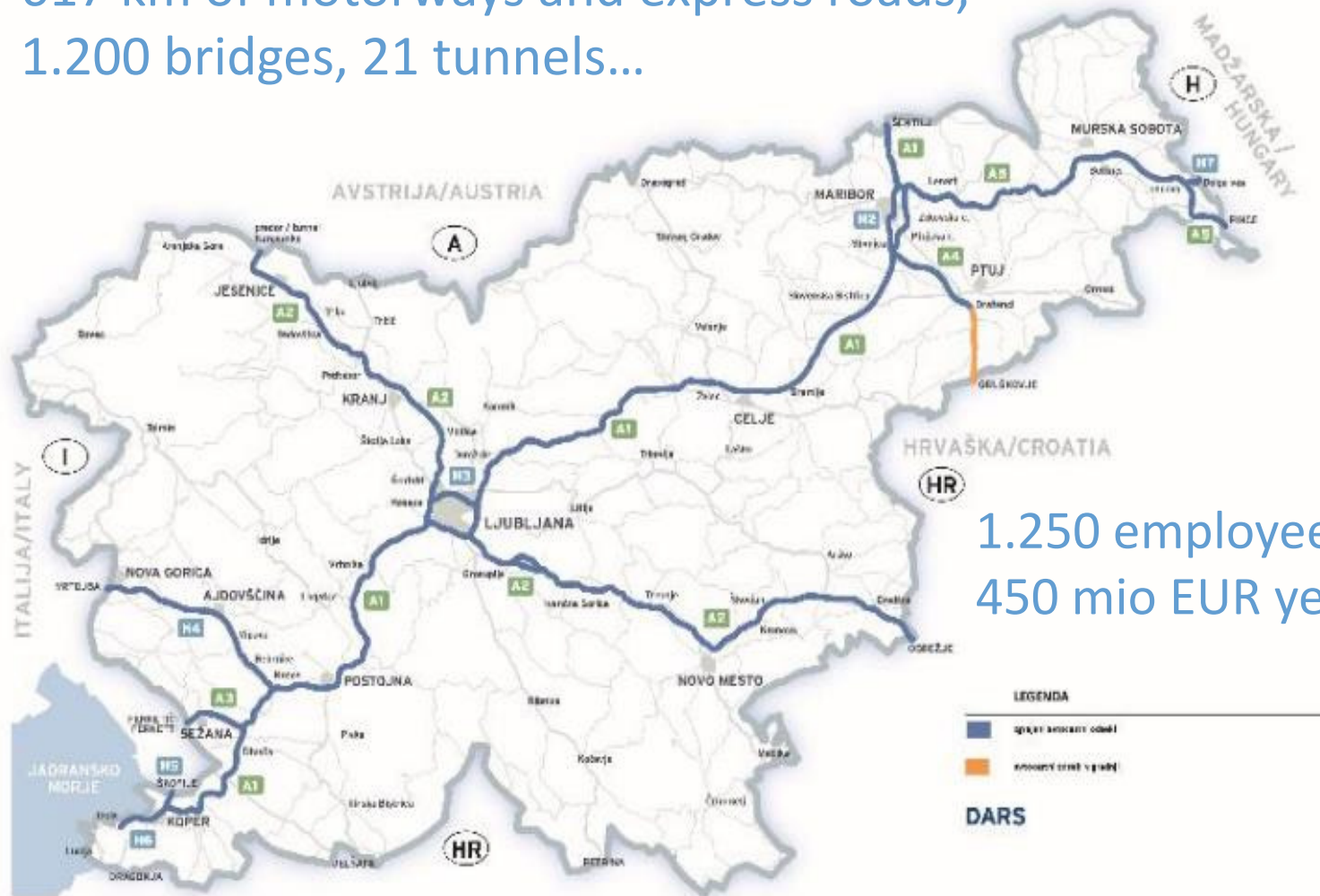
***Bojan Banfi, management director***  
***DARS, d. d., Slovenia***  
***Motorway Company in the Republic of Slovenia***

# Agenda

- DARS – Slovenian Motorway Company
- Toll Collection on Slovenian motorways
- Managing our Infrastructure in terms of safety
- Safety measures & Safety preventive actions
- Oriented to the future

# DARS - Slovenian Motorway Company

617 km of motorways and express roads,  
1.200 bridges, 21 tunnels...



1.250 employees,  
450 mio EUR yearly income

# A considerable traffic growth in the Republic of Slovenia from 2000 onwards

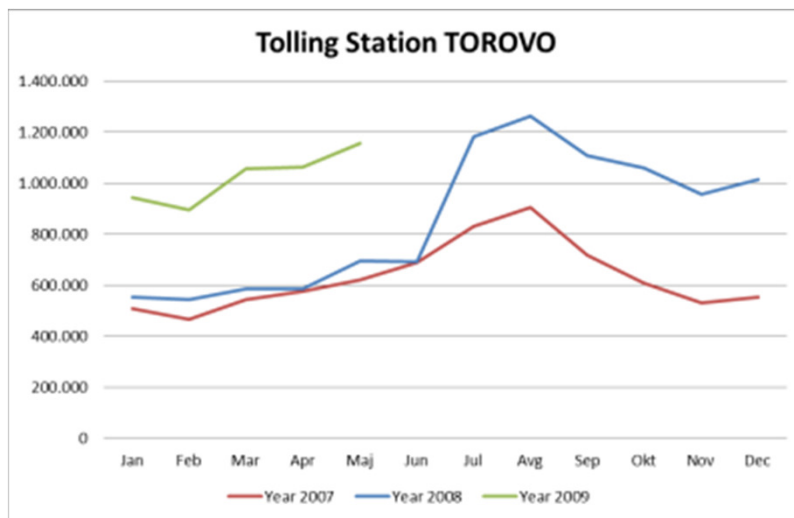
## Main reasons for traffic growth:

- Construction of MW and HW attracts additional traffic flows
- Accession of the RS to the EU in 2004
- Accession of the RS into Schengen in 2007
- Traffic growth in the neighbouring countries
- No alternative traffic connection through Slovenia

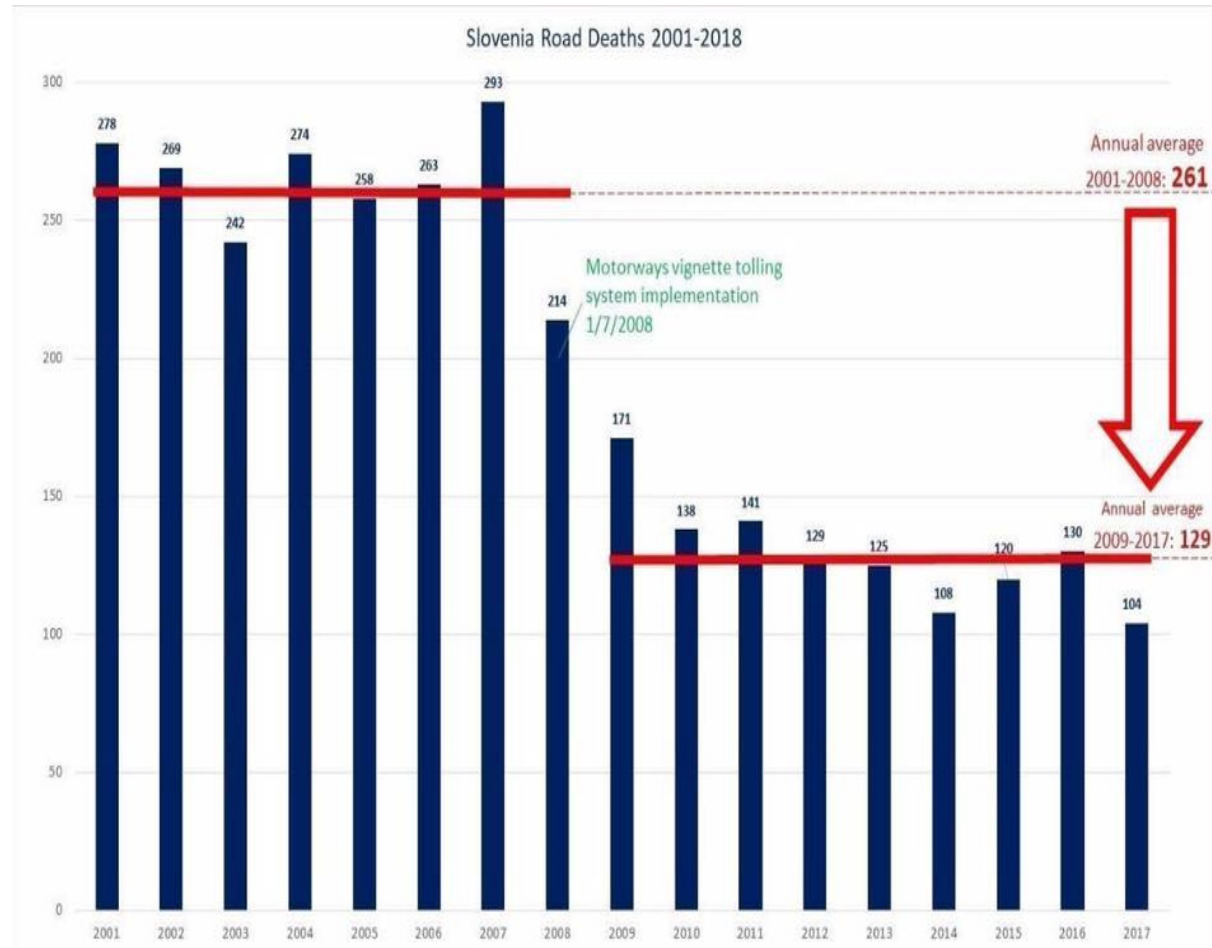
# Introduction of Toll Sticker (Vignette) for Light Vehicles

## OBJECTIVE

- *Better traffic flow*
- *Better traffic safety*



# Influence of the implemented vignette system (2008) on road fatalities in Slovenia





# Electronic toll collection system for heavy vehicles

## Phases

- Start 1.4.2018
- Interconnection EETS
- Removal of toll stations - 2 years

## Benefits

- Better traffic safety
- Better traffic flow
- Less Pollution, better Environment
- Lower costs for Economy, for our Customers



# Managing our infrastructure (PMS, BMS)

8

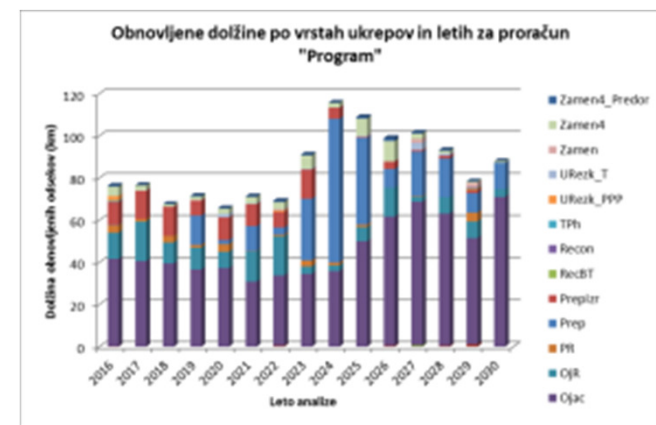
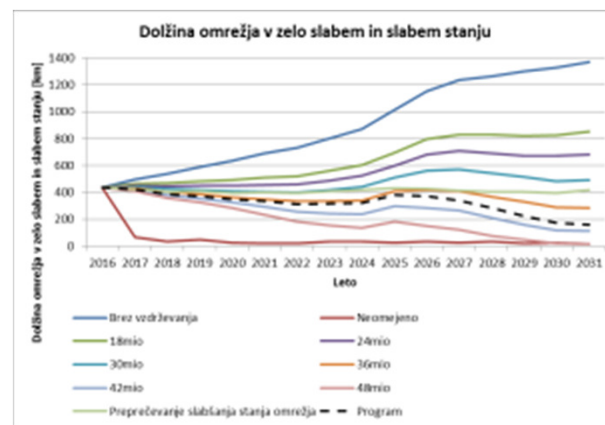
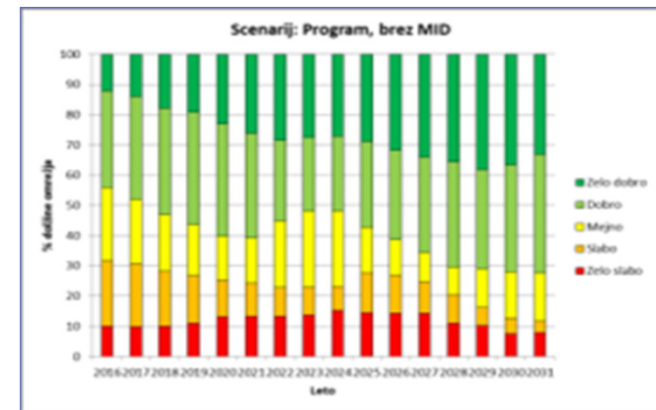
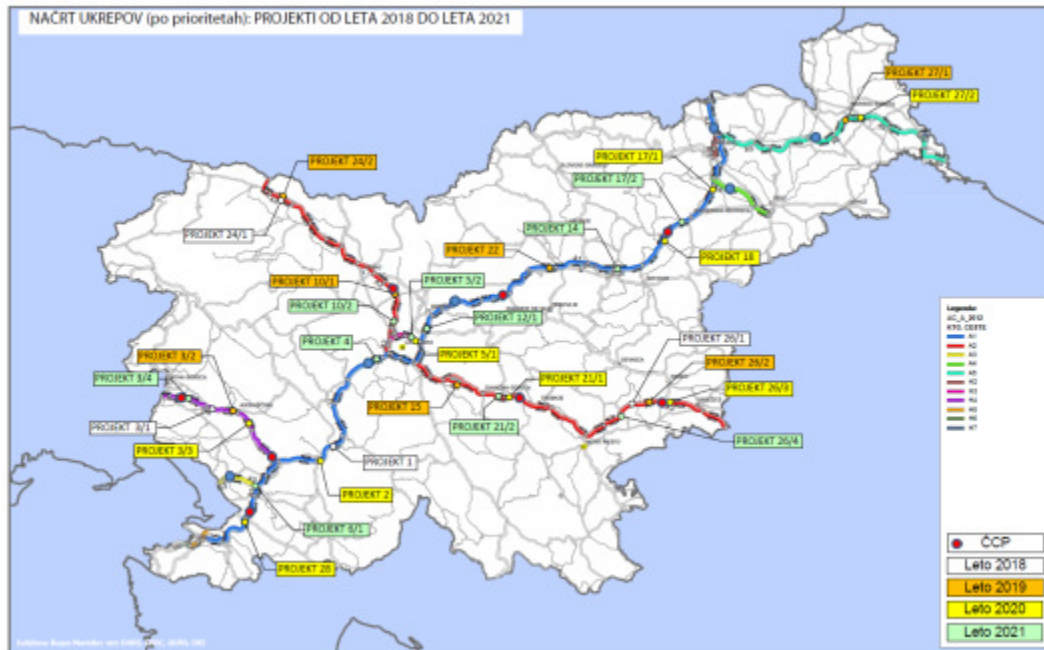
DARS

## Assets Management Systems in DARS

- Pilot Project for Pavement Management System (PMS) in 2002
- PMS - DARS introduced in 2004
- PMS - DARS upgrades (2006 – 2009, 2011 – 2014)
- 3 years Infrastructure Reconstruction plan (2016 – 2018)
- Introduction of Asset Management System for Electromechanical Equipment in tunnels (2015- 2016)
- Pilot Project for Bridge Management System (BMS) 2017 – 2019
- Implementation of BMS – DARS (1.200 bridges) 2019 - 2021
  
- All other Assets ....



# Reconstruction Plan 2018 - 2021 (Projects)



# Detailed inspections of bridge construction and rehabilitation

10

DARS





# Upgrade of the MW with the high focus on safety

11

DARS



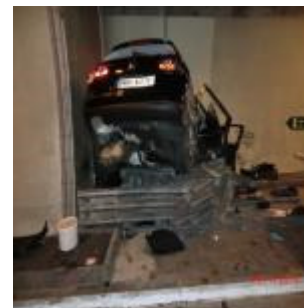
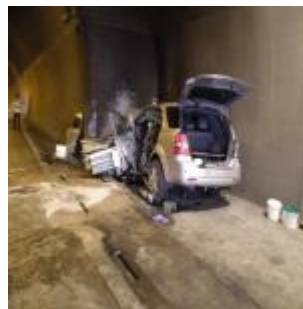
# Infrastructure safety measures for our Users



# Crash Cushions in Tunnels

13

DARS





# Section speed control in 2019/2020

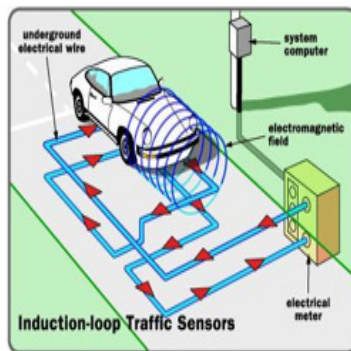




# Wrong way driving – new detection system with loops

## Pilot project:

- 20 detected points
- application for detection driving in the wrong direction
- send this information to the DARS information system
- forwarded in real time to the participants in traffic



DARS MAP-kažipot.si



APP (DarsTraffic+)

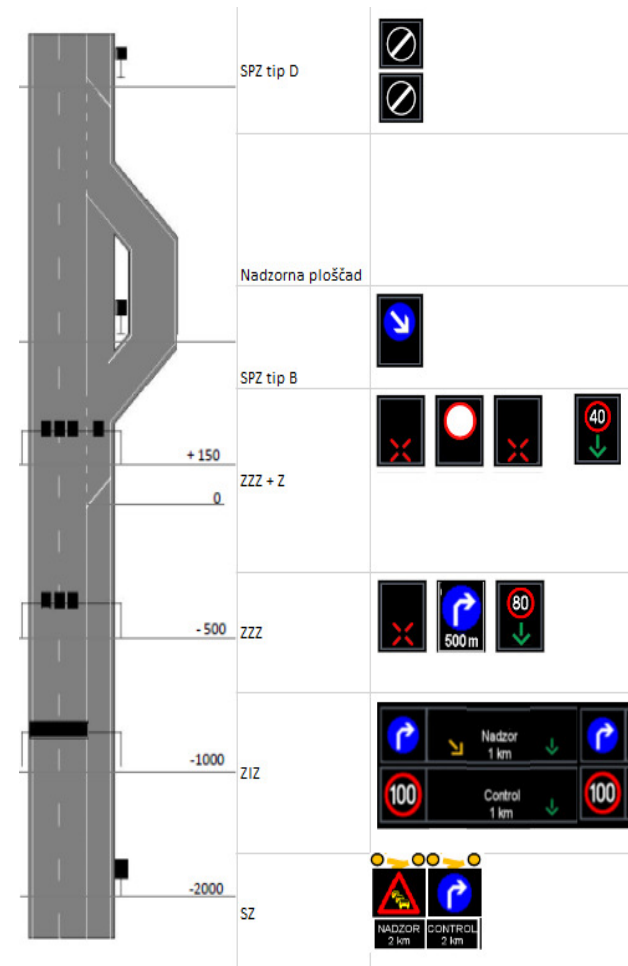


RDS



MAP-promet.si

# New vertical signalization for traffic control on the control points



# Infrastructure safety measures for our Employees

17

DARS





# Infrastructure safety measures for our Employees

18

DARS



# Safety preventive actions



**UPOŠTEVAJ VARNOSTNO RAZDALJO!**

Na slovenskih cestah velja pravilo varnostne razdalje dveh sekund.

Nekaj podatkov o hitrosti v povezavi s časom in prevoženo razdaljo

1. Varnostna razdalja je razdalja, ki jo vozilo prevozi v dveh sekundah, od tega prvo sekundo predstavlja reakcijski čas voznika, preostali delni zavirati, druga sekunda pa čas, ko vozilo zavira.
2. Pri hitrosti 100 km/h vozilo v dveh sekundah prevozi 72 m, pri hitrosti 120 km/h pa 86 m.
3. Reakcijski čas voznika je v povprečju ena sekunda, kar pomeni, da pri hitrosti 120 km/h prevozi 36 m, preostali delni zavirati, pri hitrosti 120 km/h pa se razdalja zmanjša na 50 m.
4. Varnostna razdalja pri hitrosti 120 km/h je enaka dolžini štirikolesnega tovornega avta, pri hitrosti 100 km/h pa dolžini trah priklopnih tovornih vozil.

**2 SEKUNDI**

DARS





# Safety preventive actions



**SAVE A LIFE**  
 Cause the appropriate positioning of vehicles on the highway in cases of congestion.

**up to 40% more chances of survival**

With the appropriate positioning of vehicles which are not involved in an accident on a motorway, we allow emergency services faster access to the injured, which increases their chances of survival by 40%.

If vehicles should have to stop on the road, the positioning of vehicles **CREATLY IMPACTS** help to the injured in cases of accident. Therefore consider the appropriate positioning of vehicles when congestion occurs.

**When congestion occurs...**  
 Emergency services for emergency vehicles should be with the front of the line of vehicles in the fast and driving lanes. (Emergency vehicles are equipped with blue or yellow lights, sirens, sirens, blue lights, police, regular maintenance operator, inspection services, etc.).

Vehicles in the driving lane should move to the right lane and vehicles in the fast lane should move to the left lane.

**Fine**  
 Inappropriate positioning of vehicles during congestion on a motorway or expressway is subject to a fine of EUR 200.

[www.dars.si](http://www.dars.si)

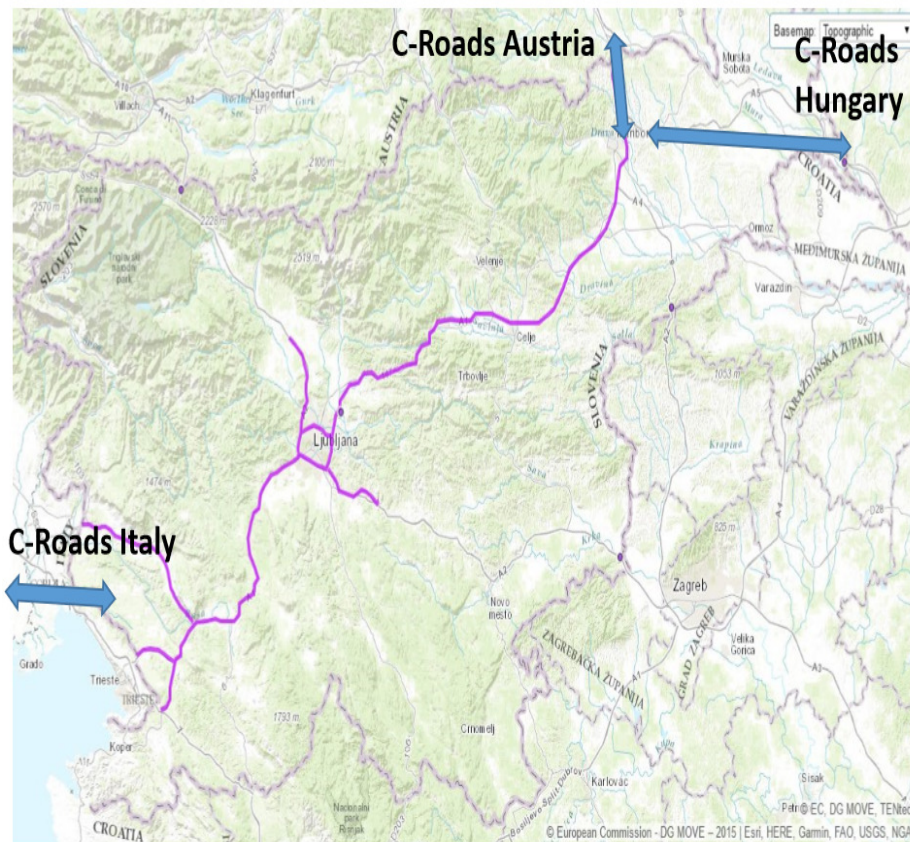
**REŠI ŽIVLJENJE**

**REŠEVALNI PAS OB ZASTOJU**

DARS



# C roads



1. 300 km of motorway road
2. Cross-border section (AUT, HUN, IT)
3. Hybrid solutions (ETSI ITS G5 and cellular networks)
4. 100 roadside units
5. Demonstration of C-ITS services (day 1 and day 1.5)



## Traffic safety

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