DARS presentations: Cross-boarder traffic management plans and Digital twin preparation

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ZALAZONE TRILATERAL CONFERENCE, July 2022

Part 1 – Cross-boarder traffic management plans

2009

- Fax forms in use

+

- No main control center in Slovenia

+

- Difficult communication between countries

+

- Uncoordinated communication between ministries, concessionaries (maintenance, management, directors,...), state police, ...

= traffic jams on motorways

TMP
A-H-HR-I-SLO

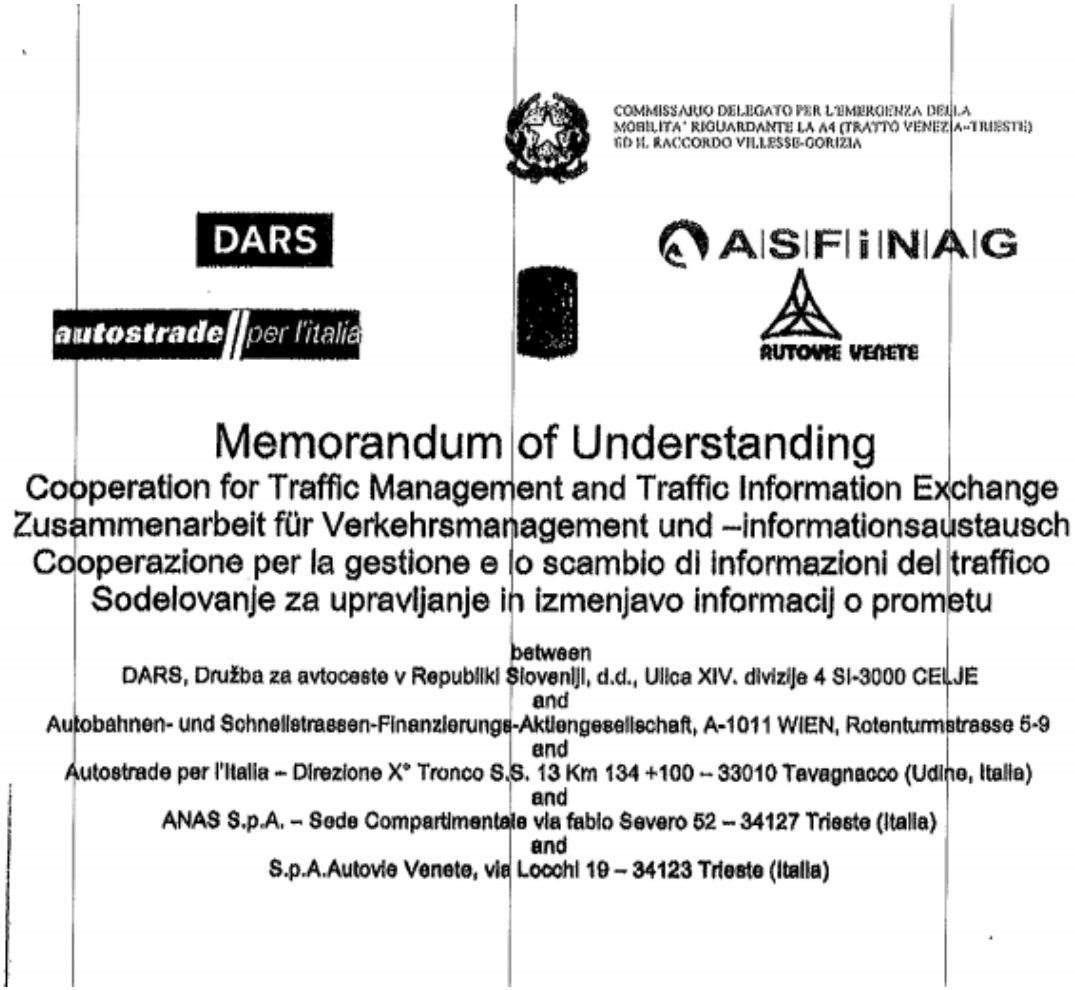
Hungary, Magyar Közút Nzrt.
MAIN TMC: Budapest
E-MAIL: utinform@kozut.hu
TEL: +36 1 8199194
FAX: +36 1 3151545

Valid from: 31.7.2016 9.30
Predicted end: date hour

Next info expected: date hour
Important note: delays 60-120 min due to border control, estimated traffic congestion length 3-4 km

Motorway section: H H, Budapest -> A, Hegyeshalom/Nickelsdorf
Location note: near Hegyeshalom

2009



COMMISSARIO DELEGATO PER L'EMERGENZA DELLA MOBILITA' RIGUARDANTE LA A4 (TRATTO VENEZIA-TRIESTE) ED IL RACCORDO VILLESSE-GORIZIA

DARS

autostrade per l'italia

ASFINAG

AUTOVIE VENETE

Memorandum of Understanding

Cooperation for Traffic Management and Traffic Information Exchange
Zusammenarbeit für Verkehrsmanagement und –informationsaustausch
Cooperazione per la gestione e lo scambio di informazioni del traffico
Sodelovanje za upravljanje in izmenjavo informacij o prometu

between

DARS, Družba za avtoceste v Republiki Sloveniji, d.d., Ulica XIV. divizije 4 SI-3000 CELJE

and

Autobahnen- und Schnellstrassen-Finanzierungs-Aktiengesellschaft, A-1011 WIEN, Rotenturmstrasse 5-9

and

Autostrade per l'Italia – Direzione X° Tronco S.S. 13 Km 134 +100 – 33010 Tavagnacco (Udine, Italia)

and

ANAS S.p.A. – Sede Compartimentale via fabio Severo 52 – 34127 Trieste (Italia)

and

S.p.A.Autovie Venete, via Locchi 19 – 34123 Trieste (Italia)

2014

Memorandum of Understanding
Cooperation for Traffic Management and Traffic Information Exchange
Zusammenarbeit für Verkehrsmanagement und –informationsaustausch
Suradnja za upravljanje prometom i razmjenu prometnih informacija
Együttműködés a forgalomirányításban és a forgalmi információk cseréjében
Cooperazione per la gestione e lo scambio di informazioni del traffico
Sodelovanje za upravljanje in izmenjavo informacij o prometu

between
ASFINAG Service GmbH, Traunuferstrasse 9, A-4052 Ansfelden,
im Vollmachtsnamen der
Autobahnen- und Schnellstrassen-Finanzierungs-Aktiengesellschaft, A-1011 WIEN, Rotenturmstrasse 5-9
and
Hrvatske autoceste d.o.o., Širolina 4, 10000 Zagreb
and
Autocesta Rijeka-Zagreb d.d., Širolina 4, 10000 Zagreb
and
Bina-Istra d.d., Zrinšćak 57, 52426 Lupoglav
and
Autocesta Zagreb-Macelj d.o.o., Velika Ves 116/a, Lepajci, 49000 Krapina
and
Magyar Közút Nonprofit Zártkörűen Működő Részvénytársaság, H-1024 Budapest, Fényes Elek utca 7-13. (Magyarország)
and
S.p.A.Autovie Venete, via Locchi 19 – 34123 Trieste (Italia)
and
ANAS S.p.A. Compartimento della Viabilità per il Friuli - Venezia Giulia (Italia)
and
DARS, Družba za avtoceste v Republiki Sloveniji, d.d., Ulica XIV. divizije 4 SI-3000 CELJE

Traffic Management Services

TRAFFIC MANAGEMENT PLAN FOR CORRIDORS AND NETWORKS

Deployment Guideline

TMS-DG07 | VERSION 02-02-00 | DECEMBER 2015

The Deployment Guidelines have been developed in EasyWay, EIP and EIP+
Co-financed by the European Union
Trans-European Transport Network (TEN-T)

www.its-platform.eu

Application for International Traffic Management Plans

2020

CHALLENGES:

- **A lot of international heavy goods vehicles** (about 6.500 per day) from East to the West europe via Slovenian motorways
- 4 neighboring countries – **4 different kind of traffic management in different languages**
- **No special parking spaces**
- More than **1800 heavy goods vehicles parked on motorways in winter** time (dangerous) + more than **10 hours = about 430.000,00 EUR of economic damage for the transport company**

SOLUTION:

- **UNIFORM TRAFFIC MANAGEMENT** plans for all motorway links between states
- **ONE COORDINATION** (Slovenia)
- **UNIFIED APPLICATION FOR CONTROL CENTRES AND EQUAL GUIDELINES FOR TRAFFIC MANAGERS**

OBJECTIVES ACHIEVED:

- **Quick international coordination between traffic control centres**
- **Frequency flow of freight vehicles, especially in winter**
- **Positive impact on the economy, traffic safety and traffic flow**

Translation to app

3.2 TRAFFIC MANAGEMENT STRATEGY: RW-1-N, RW-2-N

ROUTE:

1.) Rijeka–Kozina–Ljubljana–Maribor–Graz–Vienna:

Detour RW-1-N: 5 h 00 min, 505 km

Decision point: Rijeka

DIFFERENCE with the fastest route: +15 min, +5 km (driving time for

2.) Rijeka–Kozina–Ljubljana–Villach–Graz–Vienna:

Detour RW-2-N: 5 h 45 min, 565 km

Decision point: Rijeka

DIFFERENCE with the fastest route: +1 h, +65 km (driving time for a

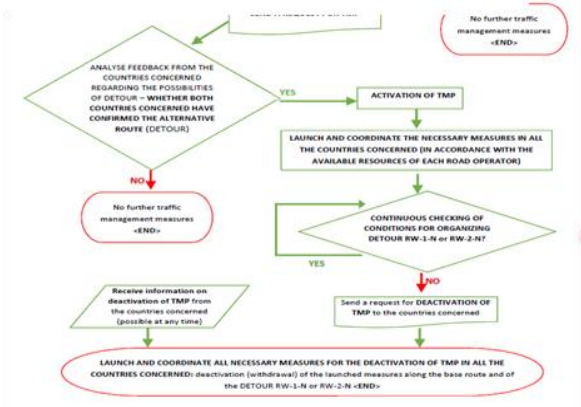
RW-1-N	Passenger cars	Commercial vehicles
Fuel costs	42,93 €	212,10 €
Toll costs	26,34 €	251,55 €
Labour costs	0,00 €	126,25 €
TOTAL COSTS (EUR):	**69,26 €**	**589,90 €**

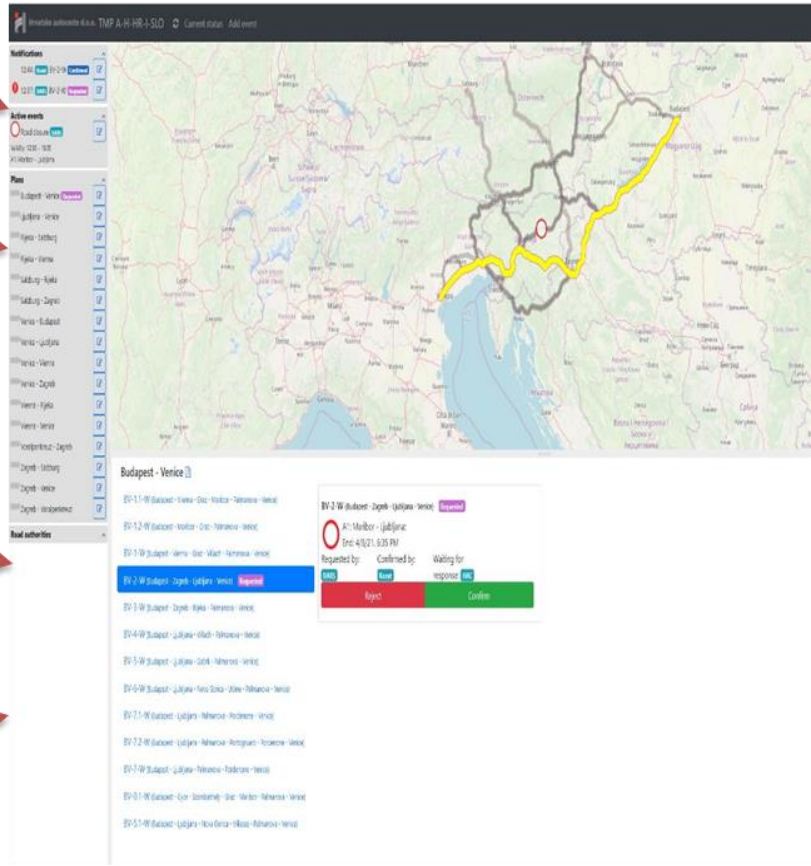
RW-2-N	Passenger cars	Commercial vehicles
Fuel costs	48,03 €	237,30 €
Toll costs	26,34 €	281,45 €
Labour costs	0,00 €	141,25 €
TOTAL COSTS (EUR):	**74,36 €**	**660,00 €**

(Rijeka–Zagreb–Maribor–Graz–Vienna: the fastest route: 4 h 45 min, 500

Figure 9: Display of detours in case of an extraordinary event between Rijeka and Zagreb

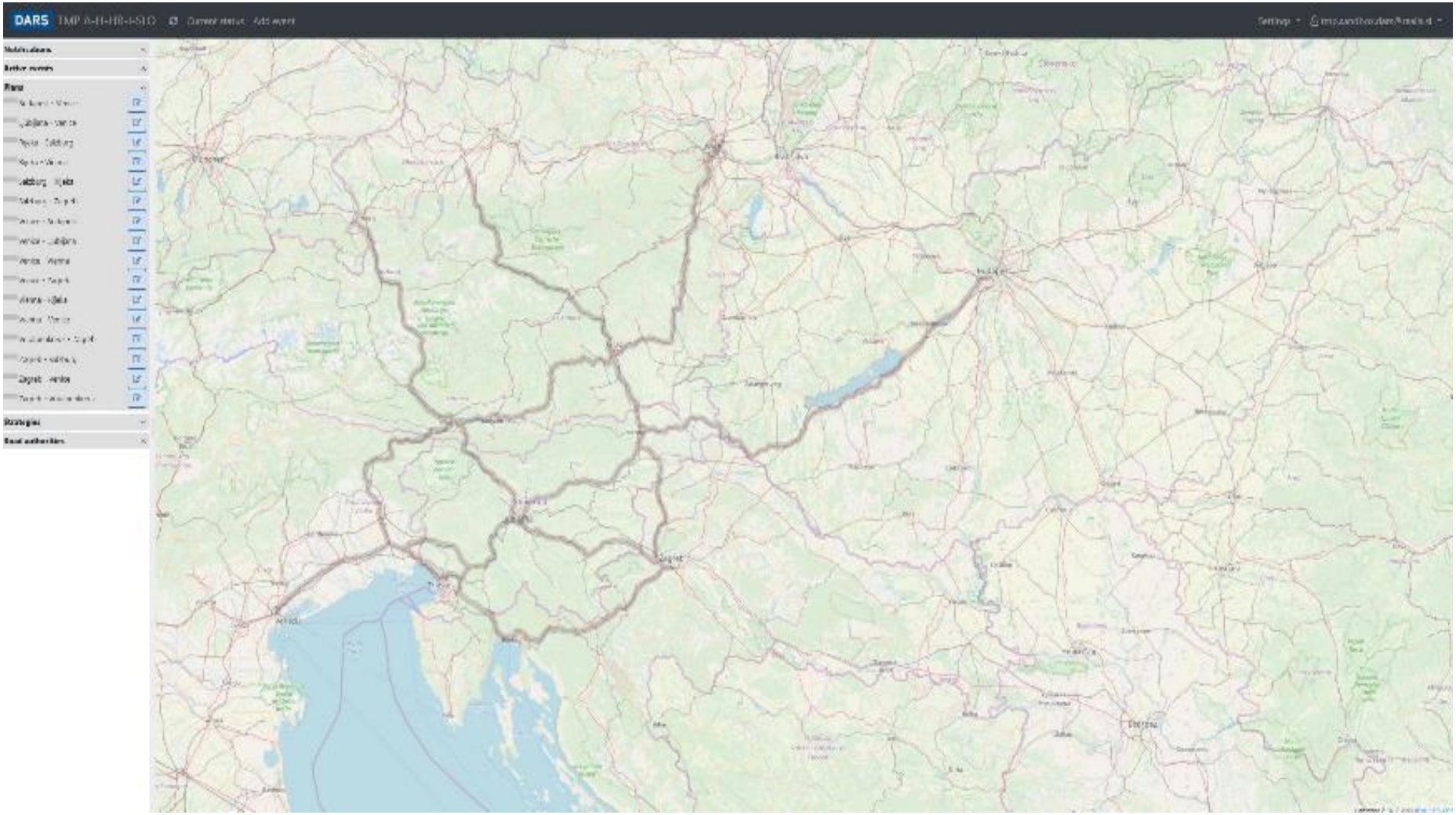
Detour strategy in case of an extraordinary event Section: Rijeka–Zagreb–Maribor–Graz–Vienna						
	Event type	Limit value	Decision point	Detour strategy	Activation	Deactivation
Subsection: Rijeka–Zagreb	Planned full closure (FC)	Duration of FC ≥ 1 h 00 min	Rijeka	RW-1-N RW-2-N	Start of FC	End of FC
	Unplanned full closure (FC)	Duration of FC ≥ 1 h 00 min	Rijeka	RW-1-N RW-2-N	Start of FC	End of FC
Distance from the Rijeka exit: 0–150 km	Ban for commercial vehicles (BCV > 7,5 t)	Duration of BCV ≥ 1 h 00 min	Rijeka	RW-1-N RW-2-N	Start of BCV	End of BCV
	Congestion / traffic jam	Length ≥ 8 km	Rijeka	RW-1-N RW-2-N	Length ≥ 8 km	Length ≤ 5 km

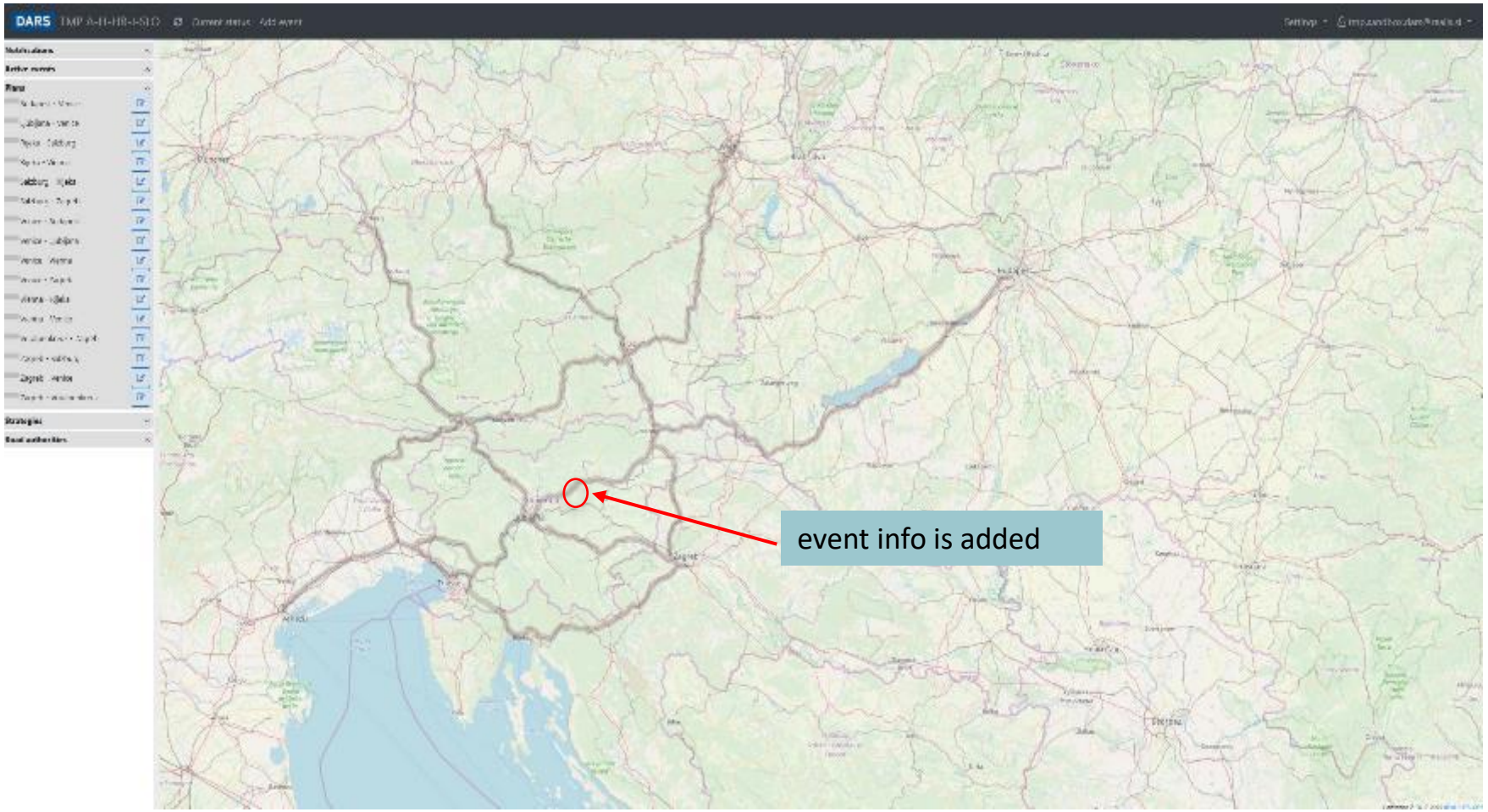


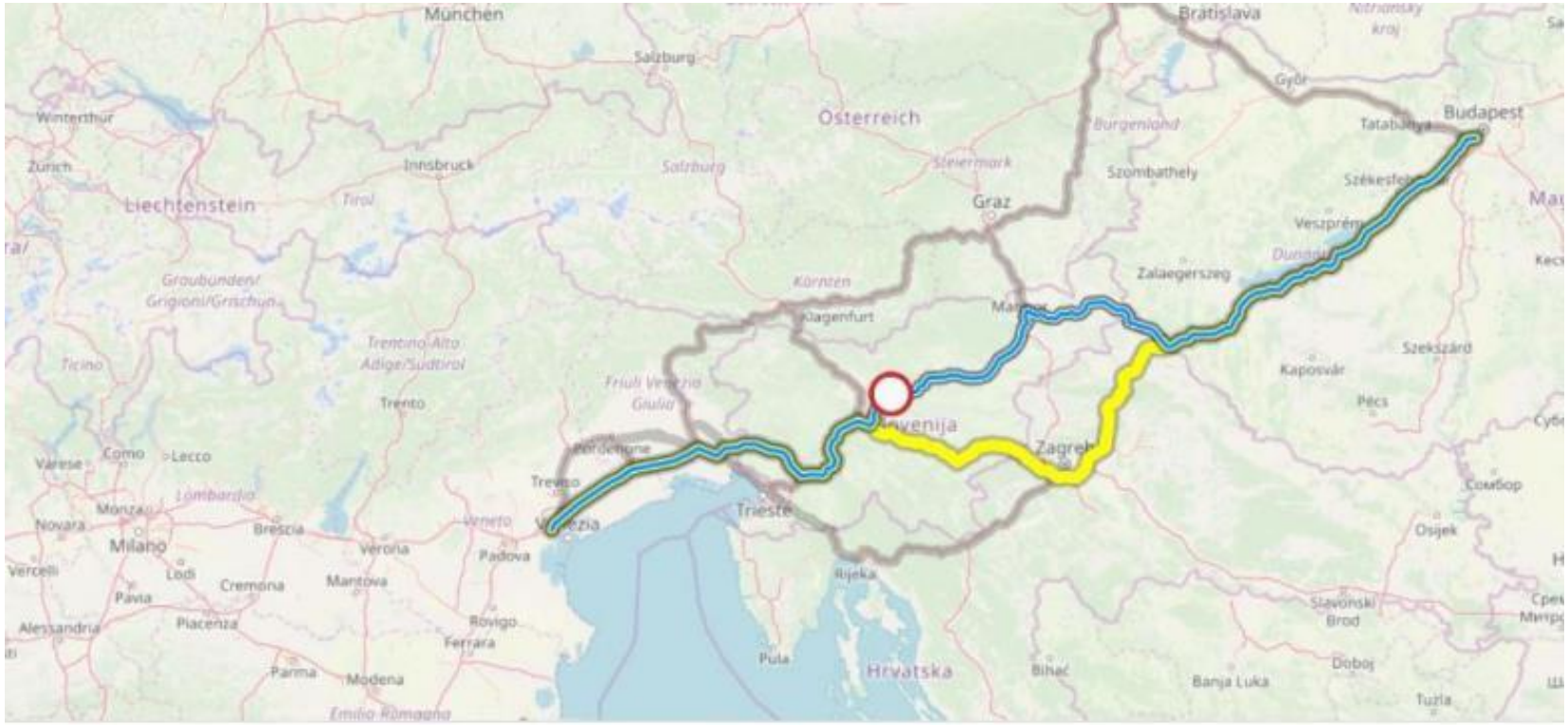


TMP APP

How it works




DARS
event info is added



Budimpešta - Benetke

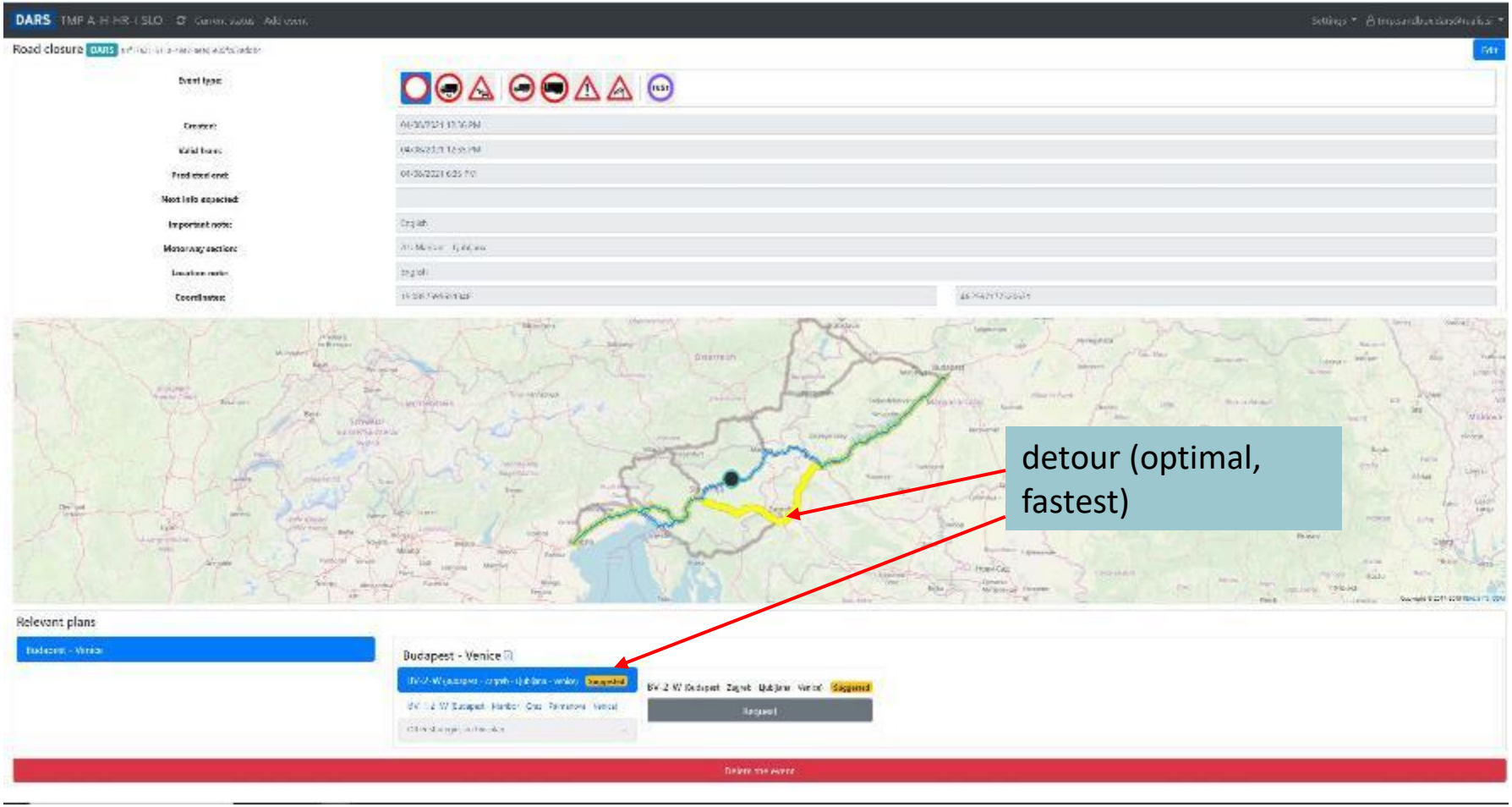
BV-2-W (Budimpešta - Zagreb - Ljubljana - Benetke) Predlagano

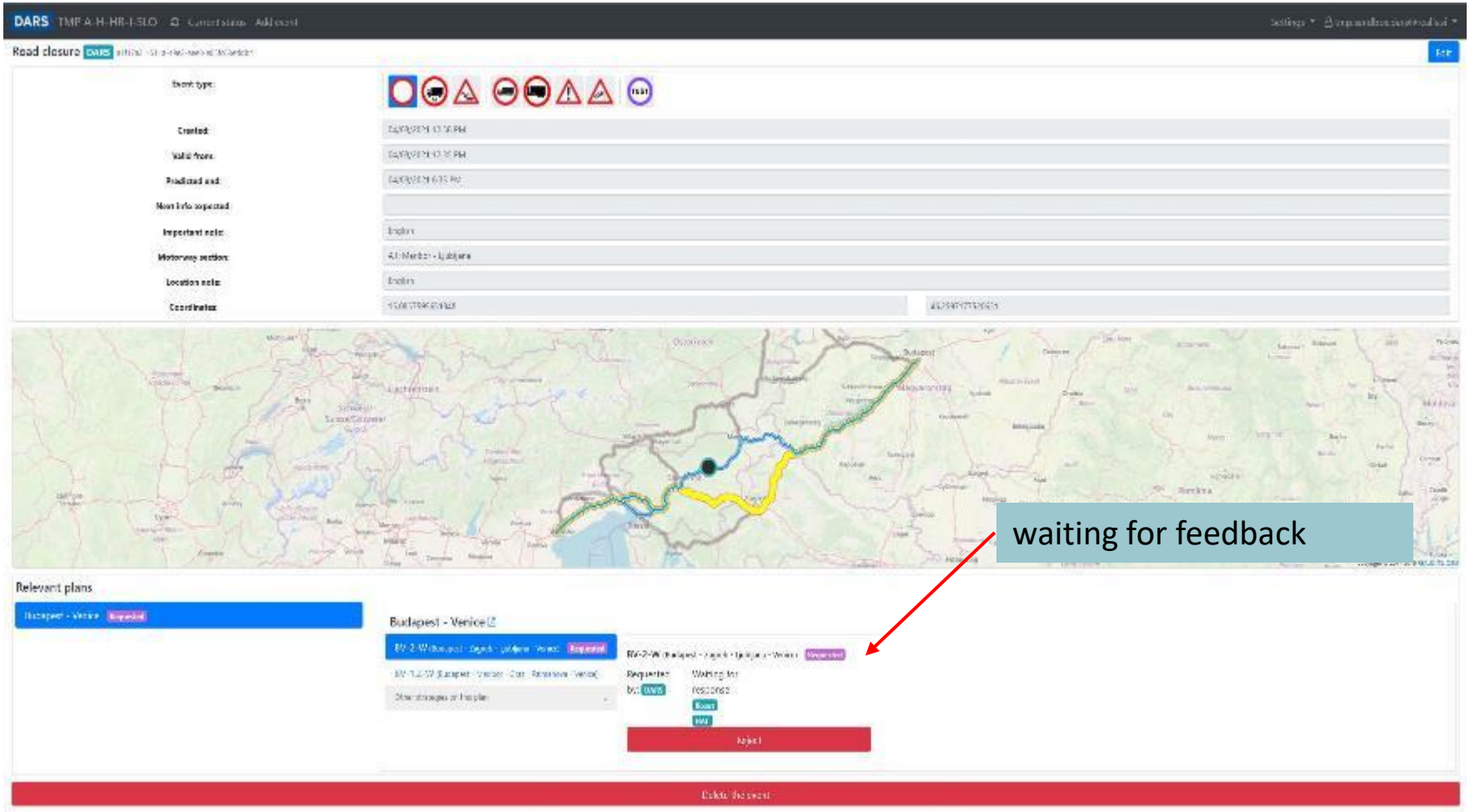
BV-1.2-W (Budimpešta - Maribor - Gradec - Palmanova - Benetke)

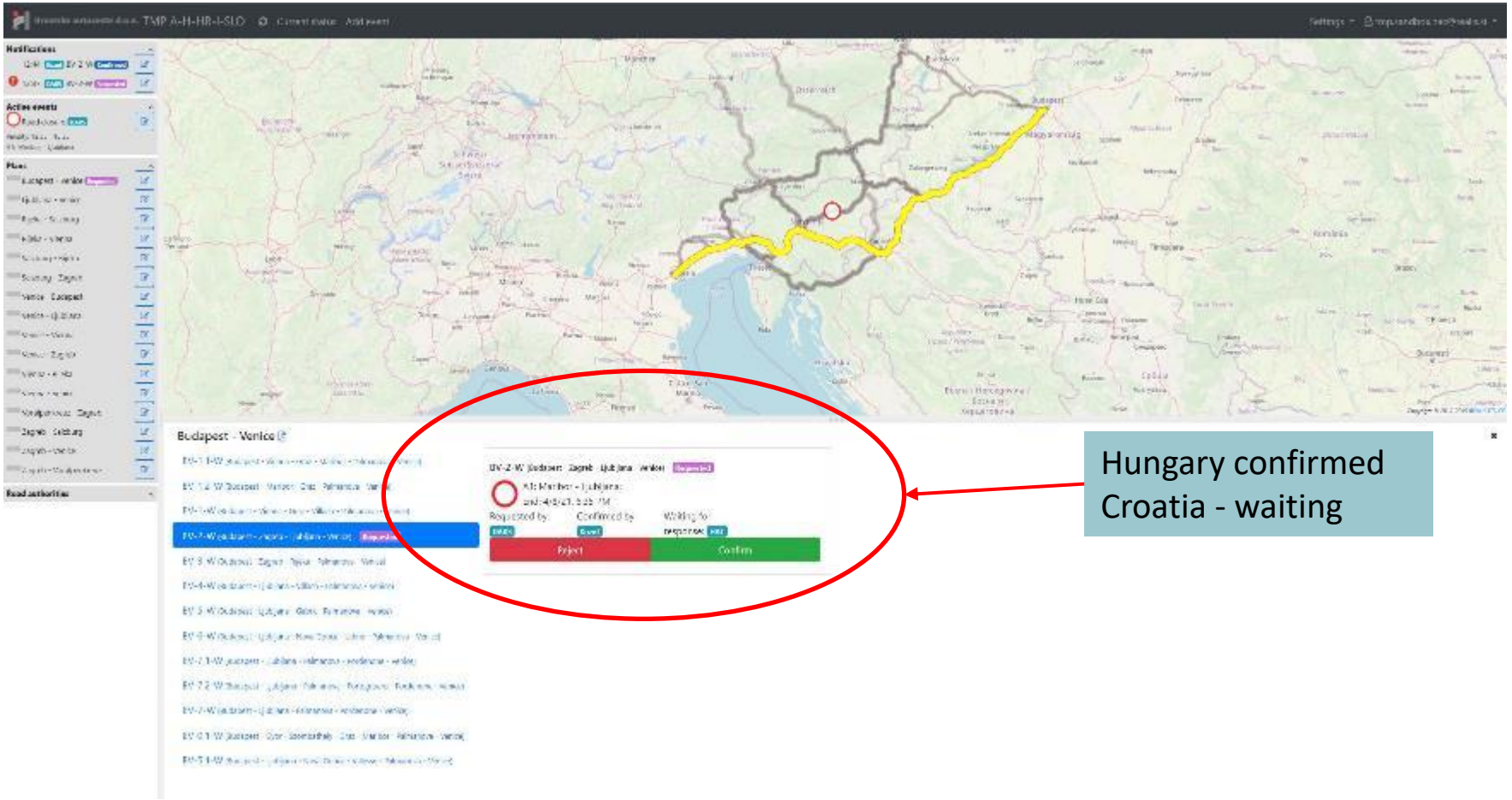
Ostale strategije na tem planu

BV-2-W (Budimpešta - Zagreb - Ljubljana - Benetke) Predlagano

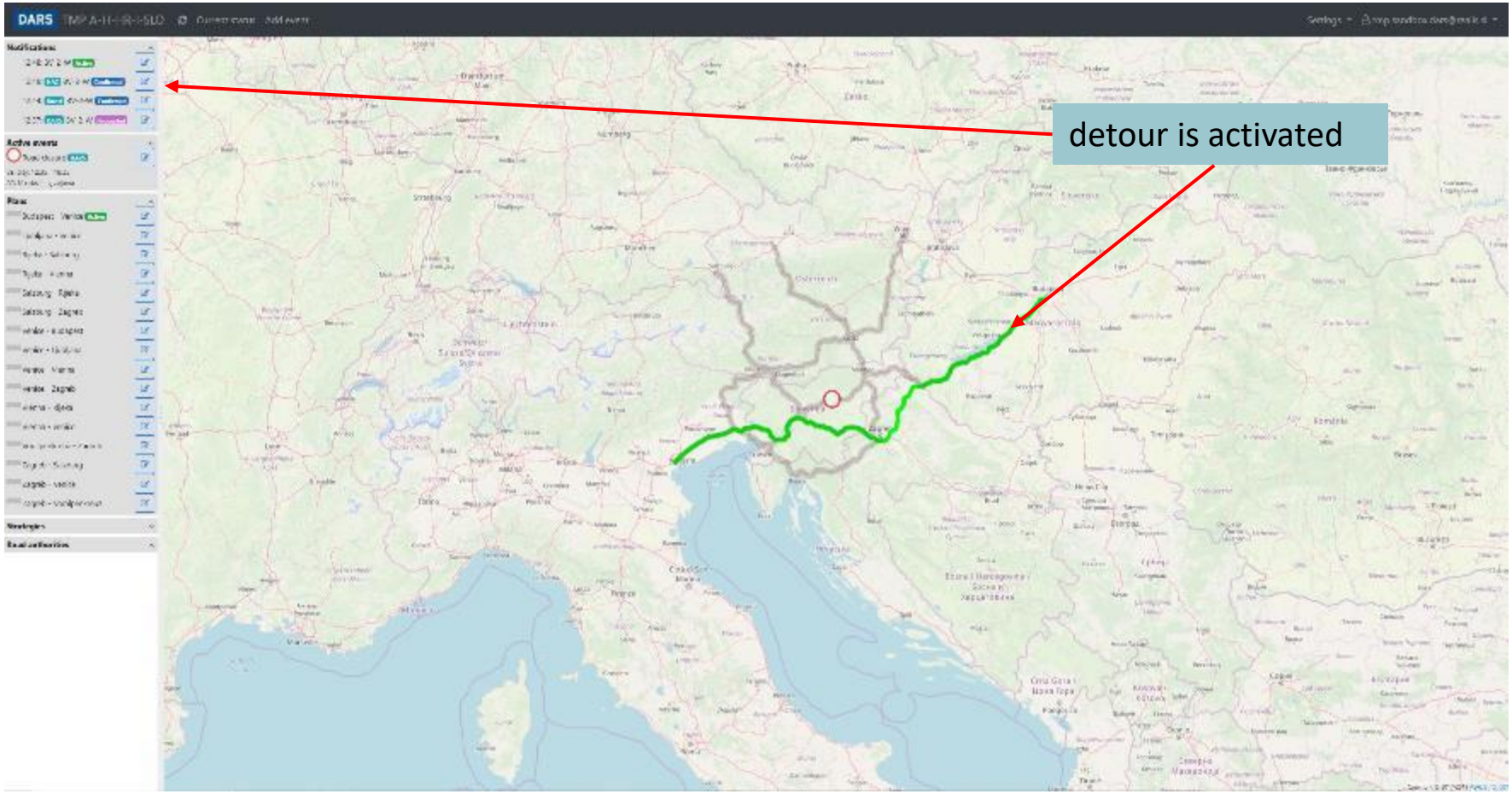
Zaprosi


DARS
Road closure
Event type:
Relevant plans
Budapest - Venice
detour (optimal, fastest)


DARS
Road closure
Relevant plans
Budapest - Venice
waiting for feedback



Hungary confirmed
Croatia - waiting

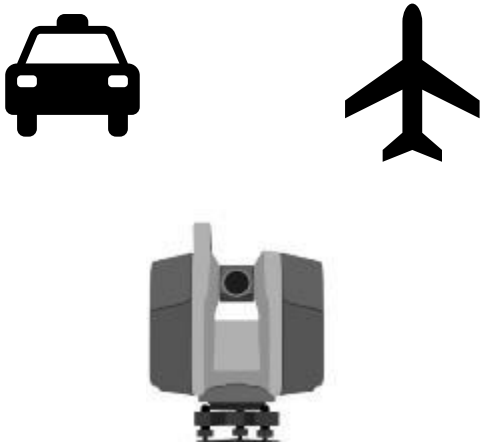

DARS
detour is activated

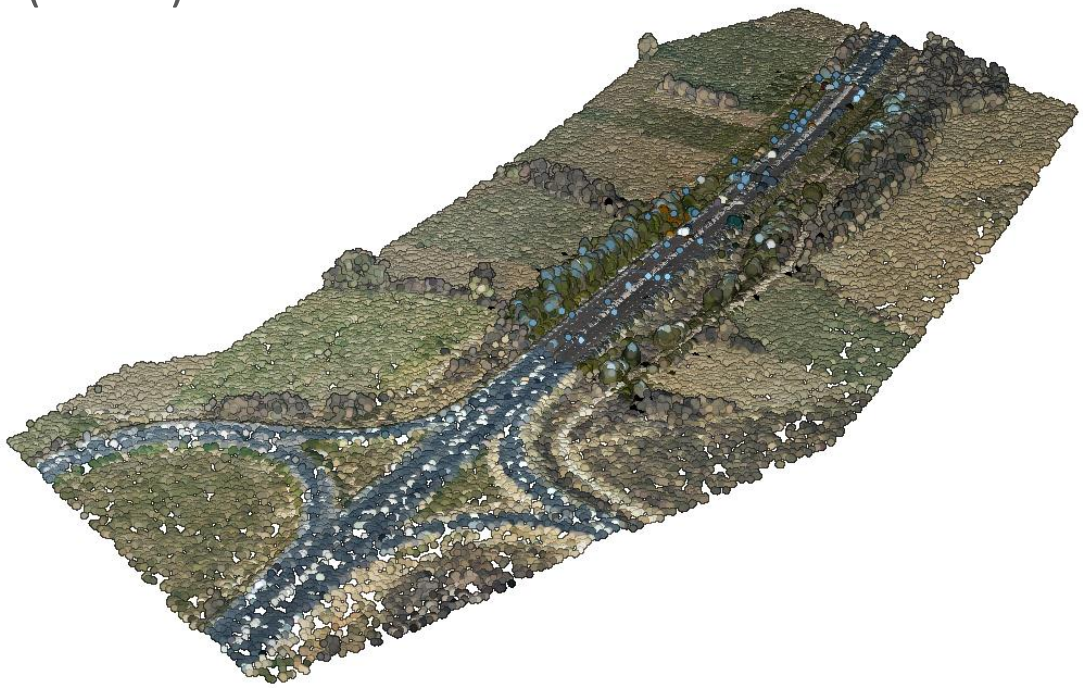
BENEFITS

- Quick international coordination between main traffic control centres
- Unobstructed traffic flow of trucks, especially in the winter time
- Unobstructed traffic flow in the summer time
- Positive impact on the economy & traffic safety & environment
- International traffic info exchange

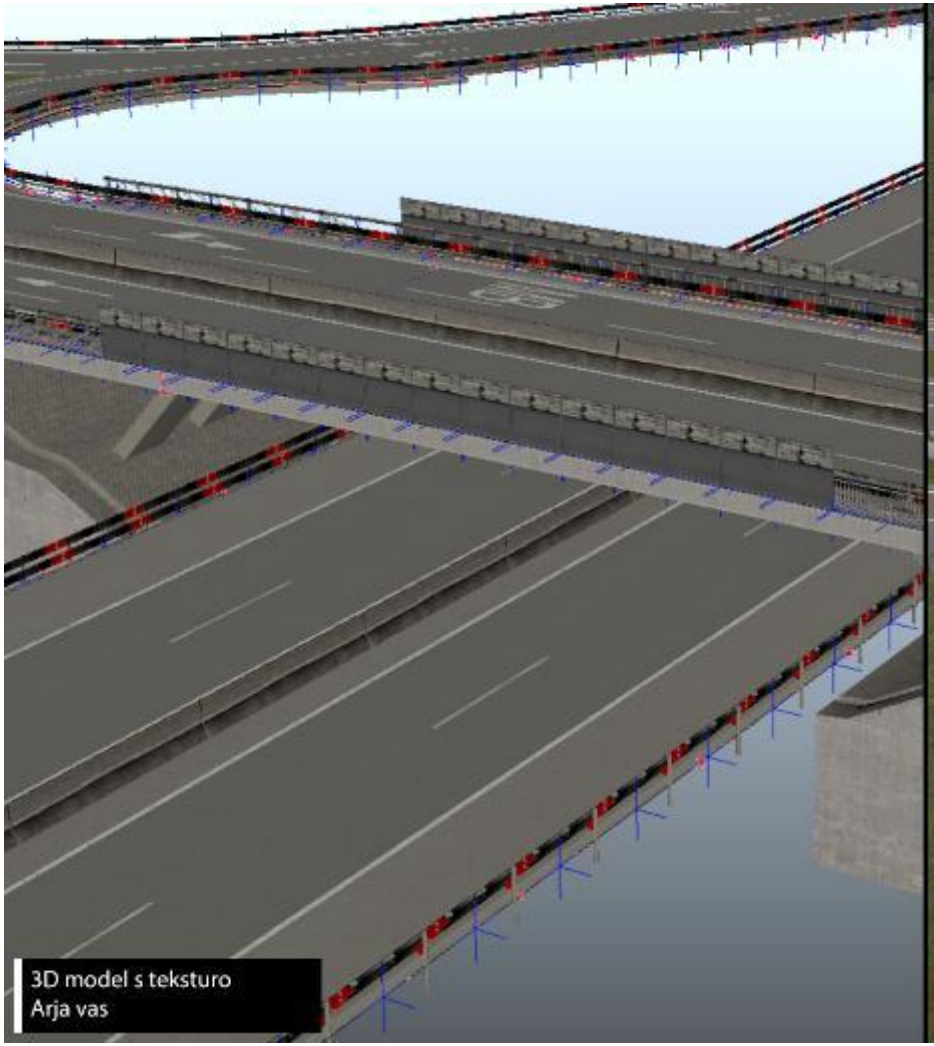
Part 2 – Digital twin preparation

- Digital twin definition
  - ‘‘*A digital twin is a virtual representation that serves as the real-time digital counterpart of a physical object or process*‘‘ [From Wikipedia].
- 3D large scale data capture (LIDAR)





3D data modelling



Use case - Traffic Safety and Infrastructure Simulator

Next steps in DARS digital twin for road infrastructure

- Create digital UI with 3D mesh + additional data from static DB
- Add aditional dynamic (live) data traffic and road sign info
- Add support for future 3D models (BIM)
- Basis for HD-maps