

**2<sup>nd</sup> Working Group 1 Meeting**  
**Institutional Coordination and Data Systems**  
**Knowledge Exchange Workshop**  
March 5<sup>th</sup>, 2018 – *tentative*  
Tbilisi, Georgia

# **Key challenges in establishing a well-developed road safety database. Importance of effective partnerships and stakeholder coordination**

**Dr Dragoslav Kukić**

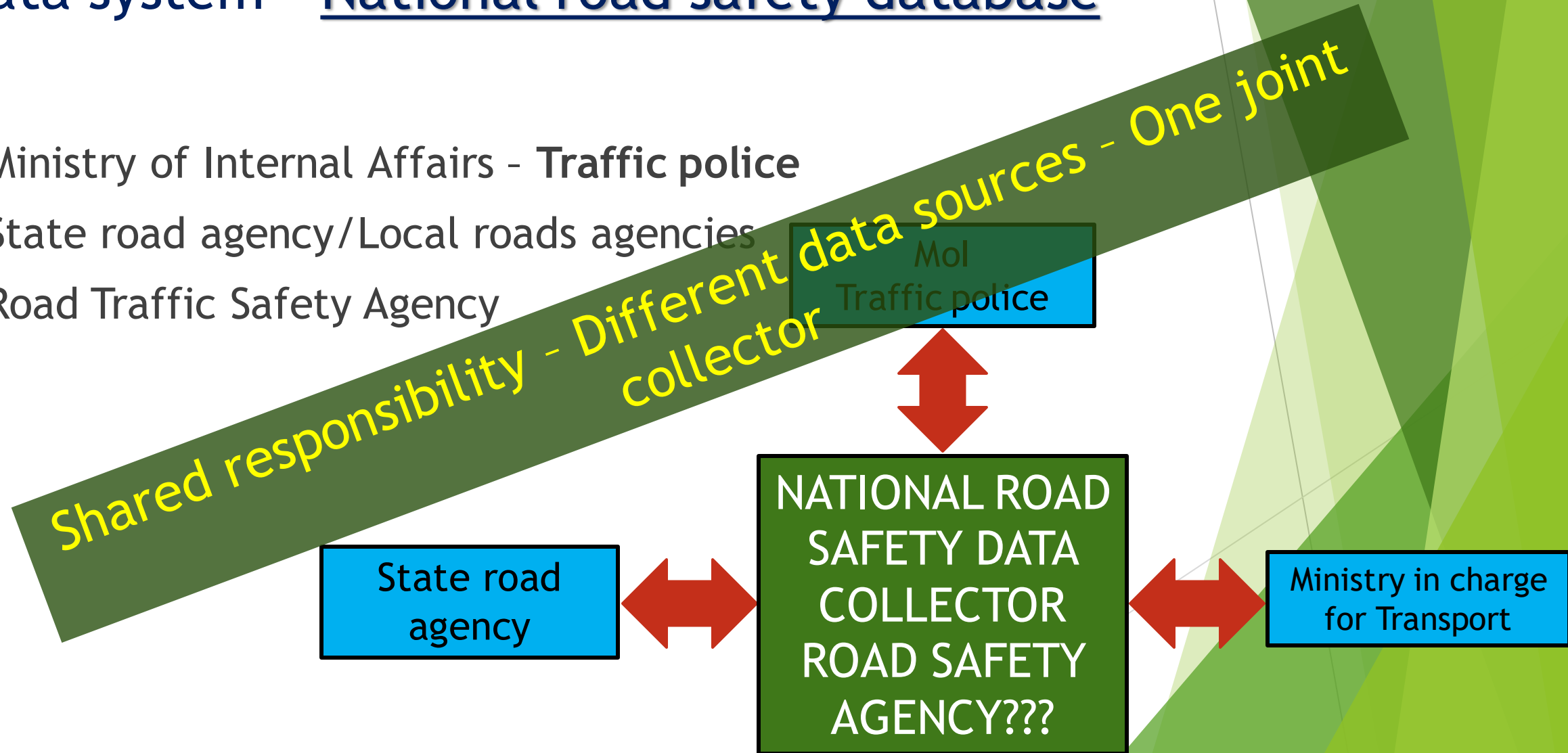
International Crash Data Specialist and Road Safety Specialist



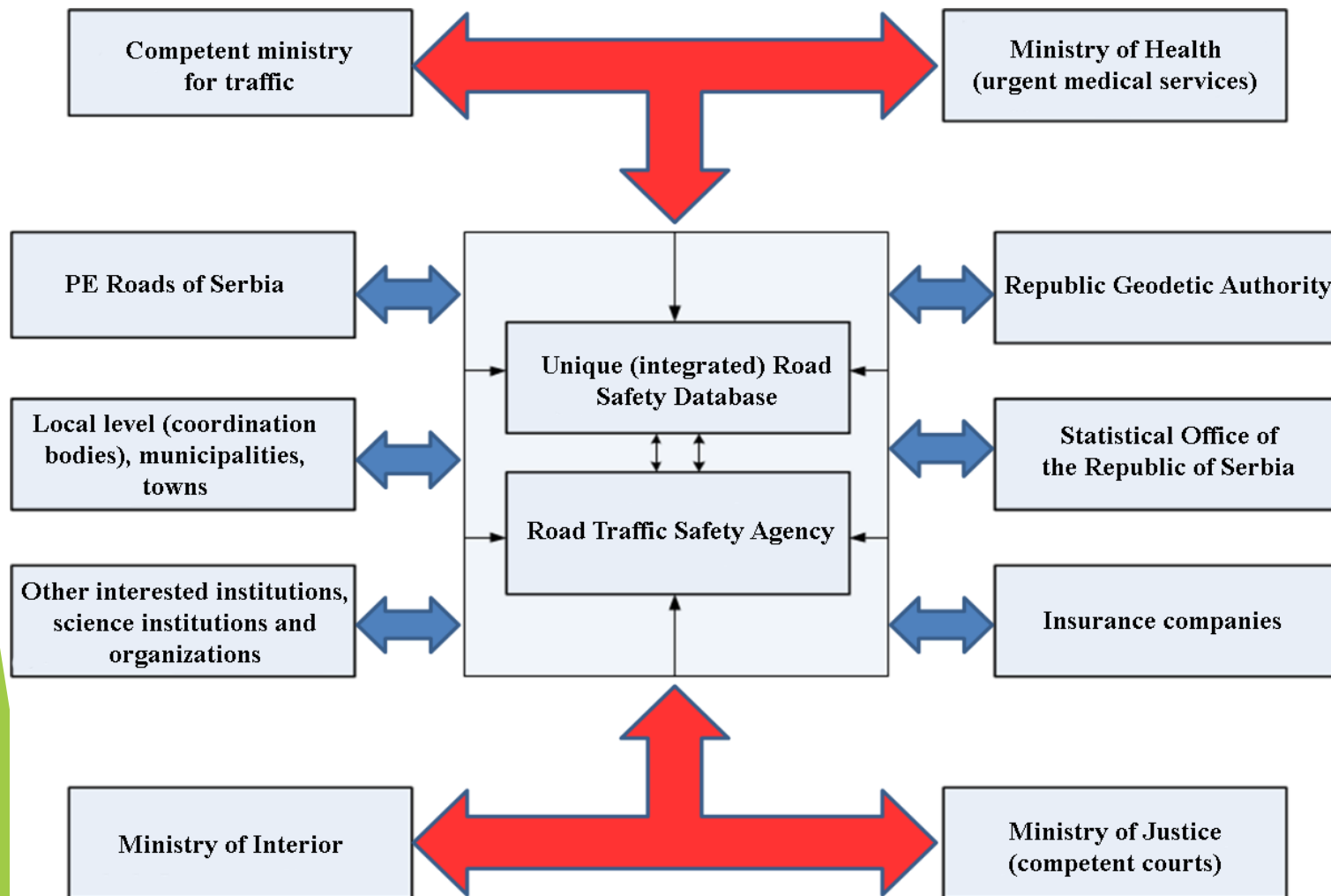
World Bank

# Institutions and organizations includes in road safety data system - National road safety database

- ▶ Ministry of Internal Affairs - Traffic police
- ▶ State road agency/Local roads agencies
- ▶ Road Traffic Safety Agency

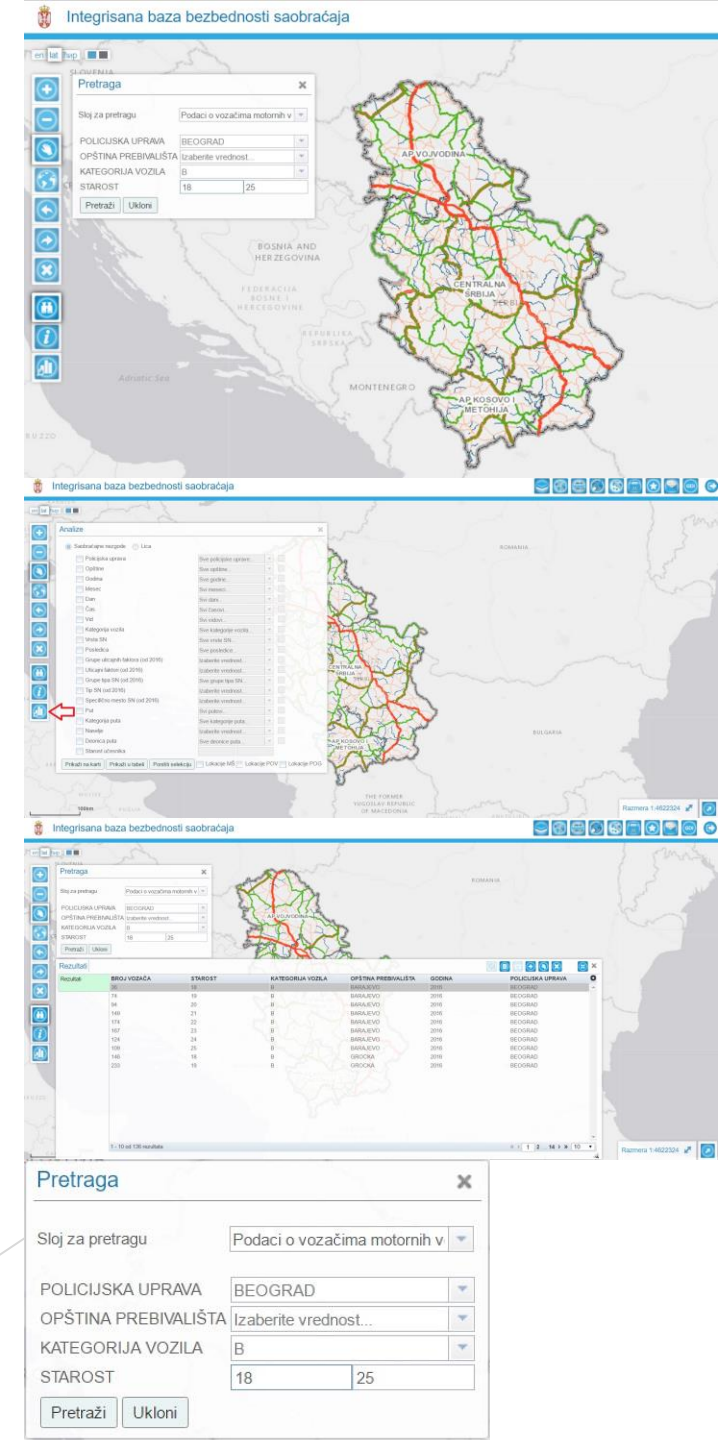


# COORDINATION WITH OTHER STAKEHOLDERS - ESPECIALLY IN SHARING THE ROAD SAFETY DATA



# Ministry of Internal Affairs - Traffic police

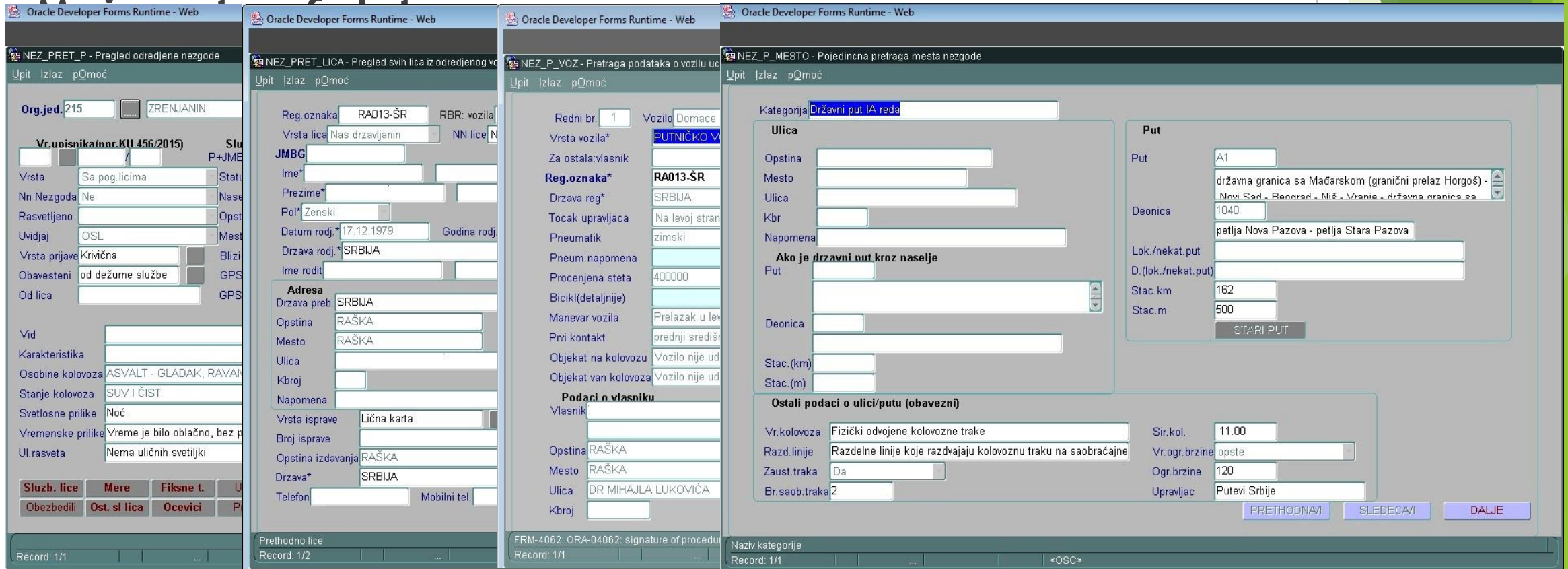
- ▶ **Road accident data!!!**
- ▶ Data about traffic fines!!!
- ▶ Set of data on motor vehicle drivers???
- ▶ Set of data on registered motor vehicles???
- ▶ Set of data on driving training centers - driving schools???
- ▶ Set of data on technical inspection stations for motor vehicles???



# Ministry of internal affairs - Traffic Police

## Example 1 - Structure of road accident data

### Road accidents data (**ORACLE** database)



The image displays four screenshots of the Oracle Developer Forms Runtime - Web interface, showing different views of road accident data. Each window has a title bar and a menu bar with 'Upit', 'Izlaz', and 'pOmoć'.

**NEZ\_PRET\_P - Pregled određene nezgode**

Org.jed. 215 ZRENJANIN

Vr.upisnika(nnr.KU.456/2015)

Vrsta Sa pog.licima Statu

Nn Nezgoda Ne Nase

Rasvetljeno Opst

Uvidjaj OSL Mest

Vrsta prijave Krivična Blizi

Obavesteni od dežurne službe GPS

Od lica GPS

Vid

Karakteristika

Osobine kolovoza ASVALT - GLADAK, RAVAN

Stanje kolovoza SUV I ČIST

Svetlosne prilike Noć

Vremenske prilike Vreme je bilo oblačno, bez p

Ul.rasveta Nema uličnih svetiljki

Služb. lice Mere Fiksne t. U

Obezbedili Ost. sl. lica Ocevici P

Record: 1/1

**NEZ\_PRET\_LICA - Pregled svih lica iz određenog vo**

Reg.oznaka RA013-SR RBR: vozila

Vrsta lica Nas drzavljanin NN lice N

JMBG

Ime\*

Prezime\*

Pol\* Zenski

Datum rodj.\* 17.12.1979 Godina rodj.

Drzava rodj.\* SRBIJA

Ime roditelja

Adresa

Drzava preb. SRBIJA

Opština RAŠKA

Mesto RAŠKA

Ulica

Kbroj

Napomena

Vrsta isprave Lična karta

Broj isprave

Opština izdavanja RAŠKA

Drzava\* SRBIJA

Telefon Mobilni tel.

Prethodno lice

Record: 1/2

**NEZ\_P\_VOZ - Pretraga podataka o vozilu u**

Redni br. 1 Vozilo Domace

Vrsta vozila\* PUTNIČKO V

Za ostala: vlasnik

Reg.oznaka\* RA013-SR

Drzava reg\* SRBIJA

Tocak upravljača Na levoj strani

Pneumatik zimski

Pneum.napomena

Procenjena steta 400000

Bicikl(detajlnije)

Manevar vozila Prelazak u lev

Pri kontakt prednji središ

Objekat na kolovozu Vozilo nije ud

Objekat van kolovoza Vozilo nije ud

Podaci o vlasniku

Vlasnik

Opština RAŠKA

Mesto RAŠKA

Ulica DR MIHAJLA LUKOVIĆA

Kbroj

FRM-4062: ORA-04062: signature of procedu

Record: 1/1

**NEZ\_P\_MESTO - Pojedincna pretraga mesta nezgode**

Kategorija Državni put IA reda

Ulica

Opština

Mesto

Ulica

Kbr

Napomena

Ako je državni put kroz naselje

Put

Deonica

Stac.(km)

Stac.(m)

Put

Put A1

državna granica sa Mađarskom (granični prelaz Horgoš) -

Novi Sad - Beograd - Niš - Vranje - državna granica sa

Deonica 1040

petlja Nova Pazova - petlja Stara Pazova

Lok./nekat.put

D.(lok./nekat.put)

Stac.km 162

Stac.m 500

STARI PUT

Ostali podaci o ulici/putu (obavezni)

Vr.kolovoza Fizički odvojene kolovozne trake

Razd.linije Razdelne linije koje razdvajaju kolovoznu traku na saobraćajne

Zaust.traka Da

Br.saob.traka 2

Sir.kol. 11.00

Vr.ogr.brzine opste

Ogr.brzine 120

Upravljač Putevi Srbije

PRETHODNAVI SLEDECAVI DALJE

Naziv kategorije

Record: 1/1

<OSC>



# Ministry of internal affairs

## Example - Structure of road accident data

### Road accidents database - ORACLE database - export to txt files

2016\_NEZ - Notepad

1115628	325-1/2016	2016 Sa povr.l.	Da Ne	Verifikovana	02.01.2016,10:40	02.01.2016,11:30	02.01.2016,12:30	02.01.2016,11:25	SUBOTA
1115629	325-2/2016	2016 Samo m.steta	Ne	Verifikovana	02.01.2016,08:40	02.01.2016,08:55	02.01.2016,09:30	02.01.2016,08:45	SUBOTA
1115630	325-3/2016	2016 Samo m.steta	Ne	Verifikovana	04.01.2016,13:15	04.01.2016,13:25	04.01.2016,14:50	04.01.2016,13:20	NEDELJA
1115631	608-1/2016	2016 Samo m.steta	Ne	Verifikovana	01.01.2016,00:25	01.01.2016,00:30	01.01.2016,01:20	01.01.2016,00:25	PETAK
1115643	704-1/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,04:15	01.01.2016,04:35	01.01.2016,05:10	01.01.2016,04:25	PETAK
1115645	601-1/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,03:40	01.01.2016,05:30	01.01.2016,06:45	01.01.2016,03:50	PETAK
1115646	950-1/2016	2016 Samo m.steta	Ne	Verifikovana	01.01.2016,00:05	01.01.2016,00:20	01.01.2016,00:30	01.01.2016,00:05	PETAK
1115647	208-1/2016	2016 Samo m.steta	Da Ne	Verifikovana	01.01.2016,01:15	01.01.2016,01:25	01.01.2016,03:00	01.01.2016,01:15	PETAK
1115648	239-1/2016	2016 Sa povr.l.	Ne	Verifikovana	13.01.2016,02:30	13.01.2016,02:45	13.01.2016,02:45	13.01.2016,02:30	PETAK
1115649	604-1/2016	2016 Samo m.steta	Da	Verifikovana	01.01.2016,02:30	01.01.2016,03:30	01.01.2016,03:30	01.01.2016,02:30	PETAK
1115651	201-1/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,04:00	01.01.2016,04:00	01.01.2016,04:00	01.01.2016,04:00	PETAK
1115654	143-1/2016	2016 Samo m.steta	Ne	Verifikovana	05.01.2016,07:15	05.01.2016,07:15	05.01.2016,07:15	05.01.2016,07:15	PETAK
1115655	229-1/2016	2016 Sa povr.l.	Ne	Verifikovana	21.01.2016,12:35	21.01.2016,12:35	21.01.2016,12:35	21.01.2016,12:35	PETAK
1115657	282-1/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115658	550-1/2016	2016 Samo m.steta	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115659	282-2/2016	2016 Samo m.steta	Da	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115660	222-1/2016	2016 Samo m.steta	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115661	282-3/2016	2016 Samo m.steta	Da	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115662	234-1/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115664	281-1/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115665	601-2/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115666	601-3/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115668	626-1/2	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115675	144-4/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115681	144-1/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115684	144-2/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115685	143-2/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115689	144-3/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115695	851-1/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115696	144-5/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115701	143-3/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115703	144-7/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115704	750-1/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115708	620-1/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115710	219-1/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115711	144-9/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115713	281-2/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115715	201-2/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115718	144-6/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115724	144-8/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115726	222-2/2016	2016 Sa povr.l.	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115727	204-1/2016	2016 Samo m.steta	Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK
1115729	144-10/2016	2016 Samo m.steta	Da Ne	Verifikovana	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	01.01.2016,00:00	PETAK

1. Common information about road accidents
2. Participants involved in road accidents
3. Vehicles involved in road accidents
4. Road accidents places

# Road traffic safety agency - RTSA

## Example - Structure of road accident data

From Mol **ORACLE** to RTSA **SQL Server**, **txt** input files

Structure of road accidents data is defined by Traffic Police and recommendation of European Commission

Accident ID  
Traffic police unit ID  
Year  
RA severity  
Type of RA  
GPS X coordinate  
GPS Y coordinate  
Contributory factors  
Accident date  
Accident time  
Accident day  
HIT and run accident  
Investigation time (start)  
Investigation time (end)  
Municipality  
Settlement (Yes/No)  
Intersection type

The screenshot displays the Microsoft SQL Server Management Studio interface. The main window shows a SQL query in the 'Query Editor' pane, which is a SELECT statement with a TOP clause and various columns. The 'Results' pane at the bottom shows the output of the query, which is a table with 13 columns and 13 rows. The status bar at the bottom indicates that the query was executed successfully and returned 56 rows.

Query:

```
SELECT TOP (1000) [OBJECTID]  
,[PU_ID]  
,[PU_Name]  
,[Godina]  
,[Broj_testiranih]  
,[Alkohol_do_03]  
,[Alkohol_preko_03]  
,[Radnim_danina]  
,[Vikendom]  
,[Dan]  
,[Noc]  
,[Naselje]  
,[Van_naselja]  
,[Ukupno]  
,[KlasaNaselje]  
,[KlasaVanNaselja]  
,[KlasaUkupno]  
FROM [GIS_ABS].[sde].[INDIKATORI_ALKOHOL]
```

Results:

OBJECTID	PU_ID	PU_Name	Godina	Broj_testiranih	Alkohol_do_03	Alkohol_preko_03	Radnim_danina	Vikendom	Dan	Noc	Naselje	Van_naselja	Ukupno	KlasaNaselje	KlasaVanNaselja	KI
1	100	Sibija	2013	36876	1.74000000	0.95000000	0.88000000	1.08000000	NULL	NULL	1.08000000	0.84000000	NULL	5	5	N
2	1	Beograd	2013	2521	1.35000000	0.67000000	1.29000000	0.31000000	0.31000000	1.29000000	0.58000000	0.87000000	NULL	5	5	N
3	2	Kragujevac	2013	2798	2.04000000	1.22000000	1.20000000	1.41000000	0.97000000	1.68000000	1.20000000	1.23000000	NULL	5	5	N
4	3	Jagodina	2013	1093	2.01000000	1.28000000	0.61000000	2.29000000	0.49000000	2.28000000	1.97000000	0.68000000	NULL	5	5	N
5	4	Niš	2013	1284	3.27000000	2.02000000	1.40000000	2.94000000	0.79000000	3.82000000	2.41000000	1.62000000	NULL	5	5	N
6	5	Piro	2013	951	2.00000000	0.63000000	0.35000000	1.04000000	0.67000000	0.57000000	0.39000000	0.92000000	NULL	5	5	N
7	6	Prokuplje	2013	699	1.00000000	0.43000000	0.24000000	0.73000000	0.37000000	0.65000000	NULL	0.43000000	NULL	NULL	5	N
8	7	Leskovac	2013	1061	0.75000000	0.47000000	0.64000000	0.23000000	0.16000000	0.91000000	0.38000000	0.63000000	NULL	5	5	N
9	8	Vranje	2013	1109	1.80000000	0.63000000	0.88000000	0.23000000	0.16000000	1.24000000	0.00000000	0.95000000	NULL	1	5	N
10	9	Zaječar	2013	1360	1.69000000	1.03000000	0.70000000	1.60000000	0.50000000	1.78000000	1.37000000	0.82000000	NULL	5	5	N
11	10	Bor	2013	1023	1.27000000	0.59000000	0.83000000	0.22000000	0.00000000	1.81000000	1.00000000	0.25000000	NULL	5	4	N
12	11	Smederevo	2013	863	3.01000000	0.93000000	1.42000000	0.00000000	0.00000000	1.46000000	1.47000000	0.26000000	NULL	5	4	N
13	12	Pažin	2013	1108	2.17000000	1.44000000	2.10000000	0.45000000	0.98000000	2.02000000	1.39000000	1.52000000	NULL	5	5	N

# Road traffic safety agency - RTSA

- ▶ **SPI - road users behavior (seat belt use, mobile phone use, helmet use, speed measurement, child seats use...)**
- ▶ Social attitudes (important for road safety campaigns)
- ▶ Road safety casualties risks (risk analysis)
- ▶ Negligent drivers - with confiscated driver licenses
- ▶ Set of data on: lecturers, examiners, instructors (for driving schools), professional drivers - CPC...
- ▶ Tachograph workshops for buses and heavy goods vehicles
- ▶ Technicians in tachograph workshops
- ▶ The Number of licensees of technicians in tachograph workshop by municipalities
- ▶ Local road safety bodies

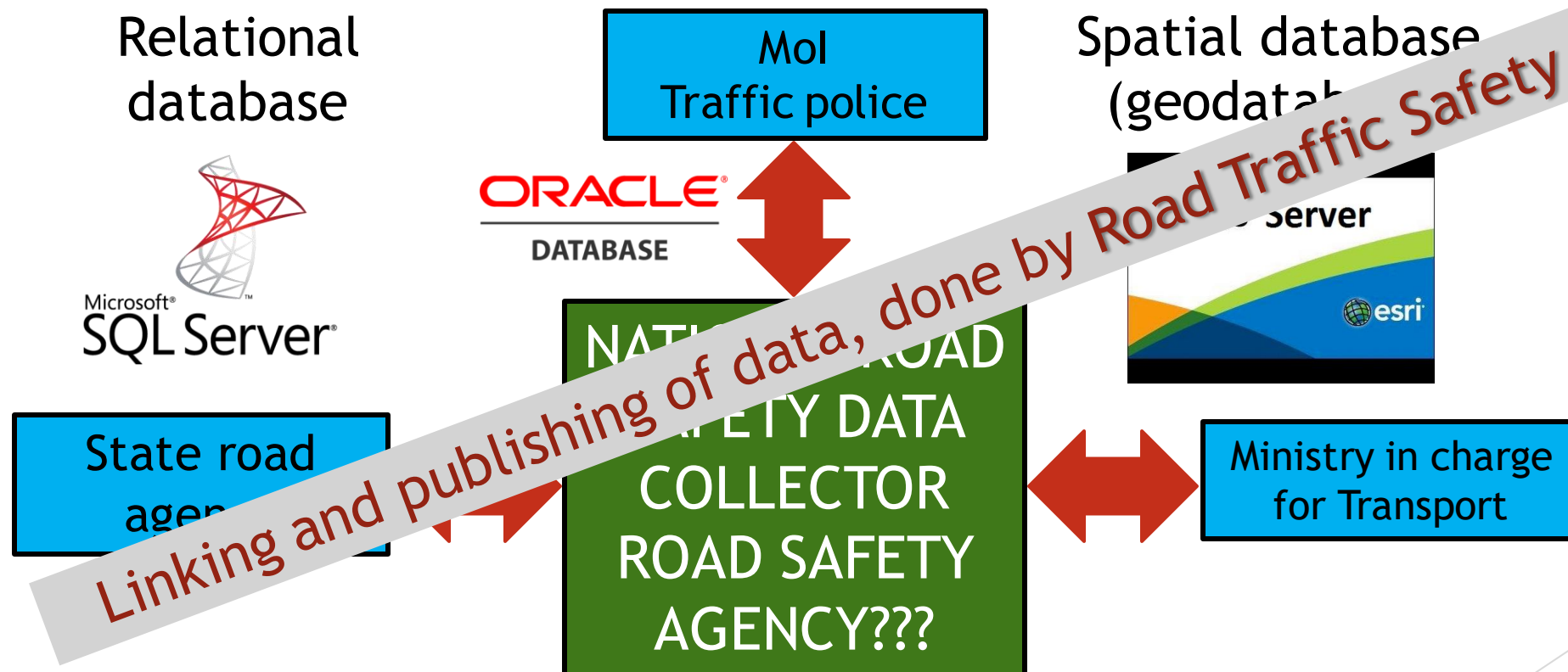


# State Road Agency and Local Road Agencies

- ▶ **Data about state roads - state reference system (input format - .gdb (ArcGIS geodatabase file))**
- ▶ Set of data on AADT by sections (.gdb file)
- ▶ Locations of traffic counters (.gdb file)
- ▶ Traffic signs data set (.gdb file)
- ▶ Set of data on “Black spots” (.gdb file)
- ▶ Bridges (.gdb file)
- ▶ Tunnels (.gdb file)
- ▶ Landslides (.gdb file)
- ▶ ITS devices (.gdb file)
- ▶ International E roads (.gdb file)

**All data sets are for state and local roads!!!**

# National road safety database

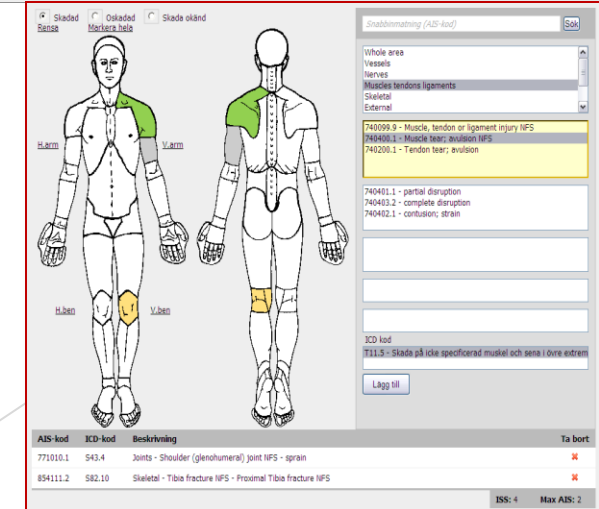
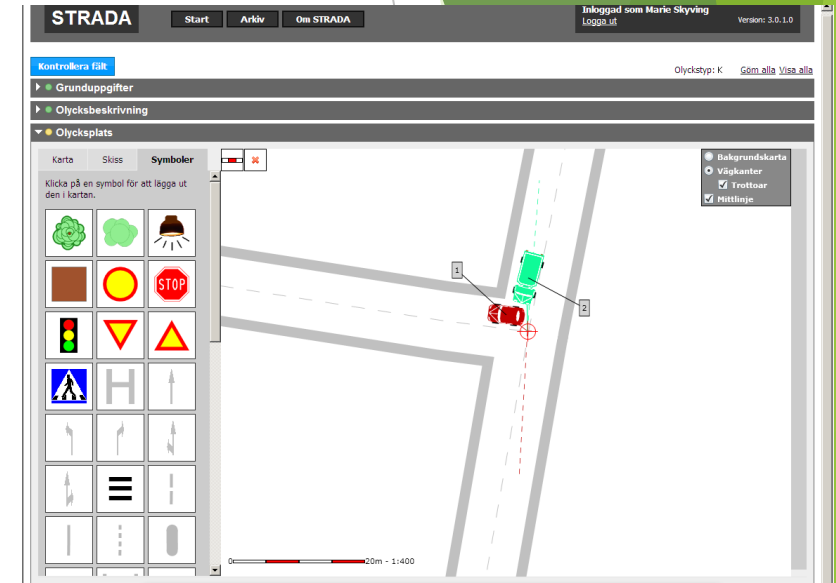
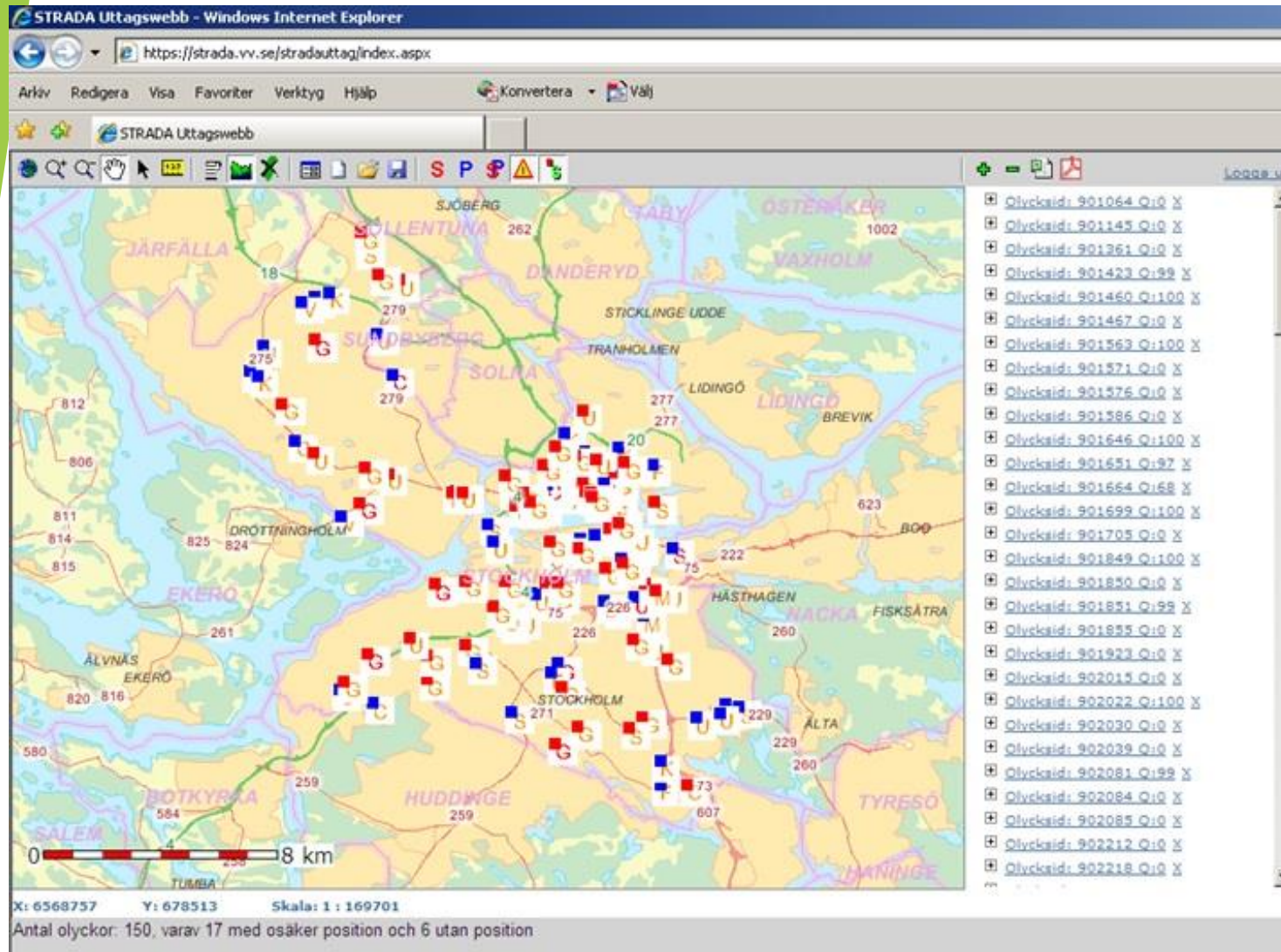


WEB GIS application public available: <http://bazabs.abs.gov.rs/>

# Sharing the road safety data - Examples

SWEDEN

TRAFIKVERKET - Swedish Transport Administration



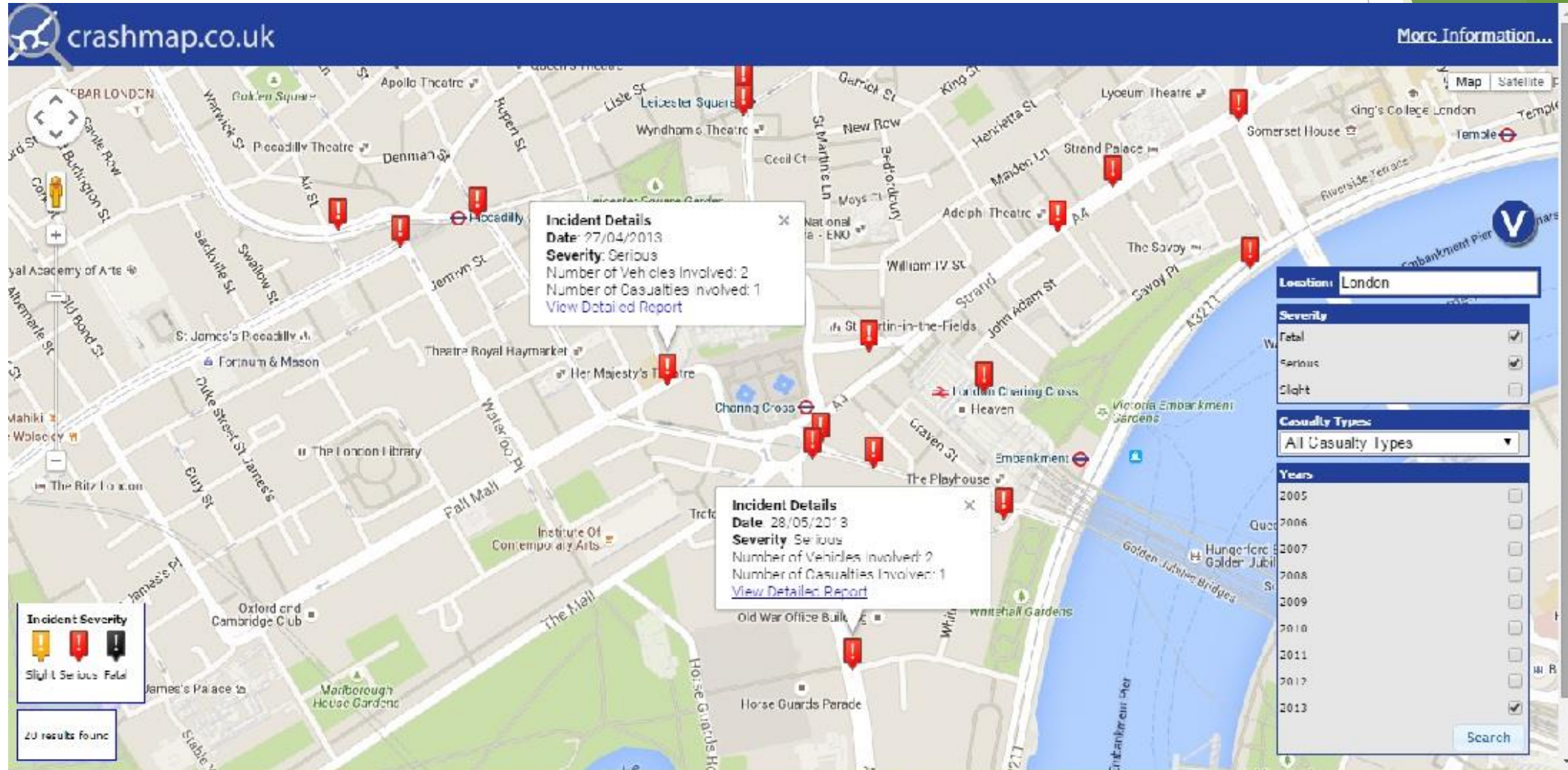


# Sharing the road safety data - Examples

Great Britain



Department of Transport and others ...  
„Crash Map Community“





# Sharing the road safety data - Examples

Slovenija



Traffic Police and  
Road Traffic Safety Agency

**Prometne nezgode (pojasnila)**

key	regija	občina	datum	dan	dan/noč	ura	vreme	vozišče	promet	klasifikacija	tip	vzrok	dc	vrsta ceste	naselje	kraj	ime ceste	oznaka ceste	ime odseka	o:
0746887	SAVINJSKA	Celje	17.08.2012	5	dan	12-13	J	AZ	N	B	OP	PV	LC	N	D	PC	CELJE 11		DEEKOVA CESTA	o:

**Nesreče**

Čas in prostor

Datum  
od: 1.1.2012  
do: 31.12.2012

Statistična regija  
vse  
Gorenjska  
Goriška

Občina  
Brezovica  
Cankova  
Celje

Mesec  
7 - julij  
8 - avgust  
9 - september

Dan v tednu  
4 - četrtek  
5 - petek  
6 - sobota

Dan/noč  
vse  
dan  
noč

Urni interval  
vse  
00-01  
01-02

Merilo 1 : 7500

Št. nesreč, ki ustreza nastavljenim kriterijem: 147

© 2012, 2013 Javna agencija Republike Slovenije za varnost prometa. Pravilnost podatkov je v izključni pristojnosti upravljalcev podatkovnih baz.

[Navodila in informacije](#)

## Sharing the road safety data - Examples

# Kazakhstan



**Ministry of justice - General Prosecutor Office**  
**and Ministry of Interior - Traffic Police**





**Success in the  
monitoring of  
the state of  
road safety**

**THE QUALITY  
ROAD SAFETY  
DATA**

**DEVELOPMENT  
OF ROAD SAFETY  
DATABASE**

**DEFINING THE  
STANDARD FOR  
MONITORING THE  
STATE OF ROAD  
SAFETY**



# Thank You



World Bank

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