

ChemLog TT

Pilot testing ZCHFP SR

Bratislava 8.4.2014

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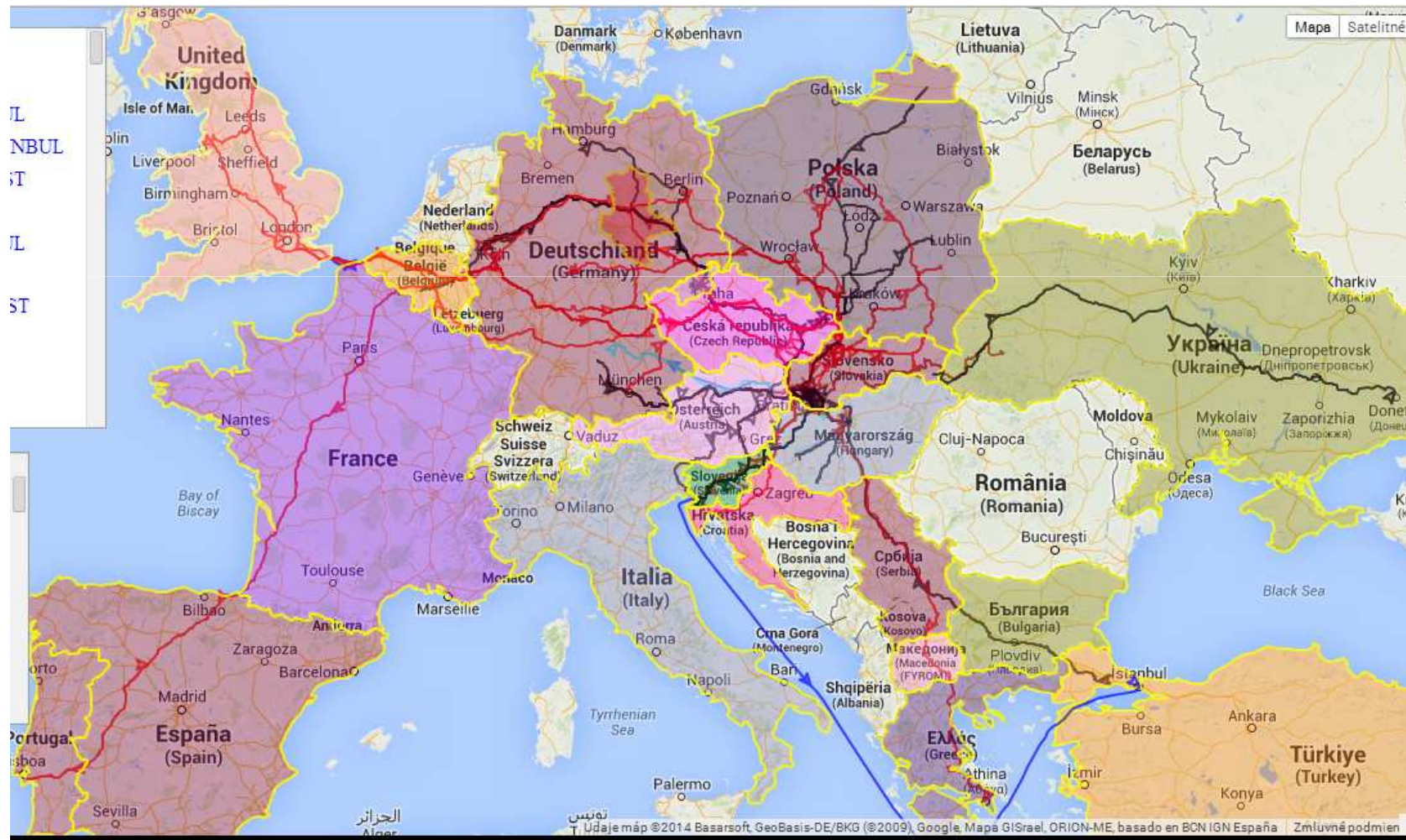
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Association of Chemical and Pharmaceutical Industry of the
Slovak Republic

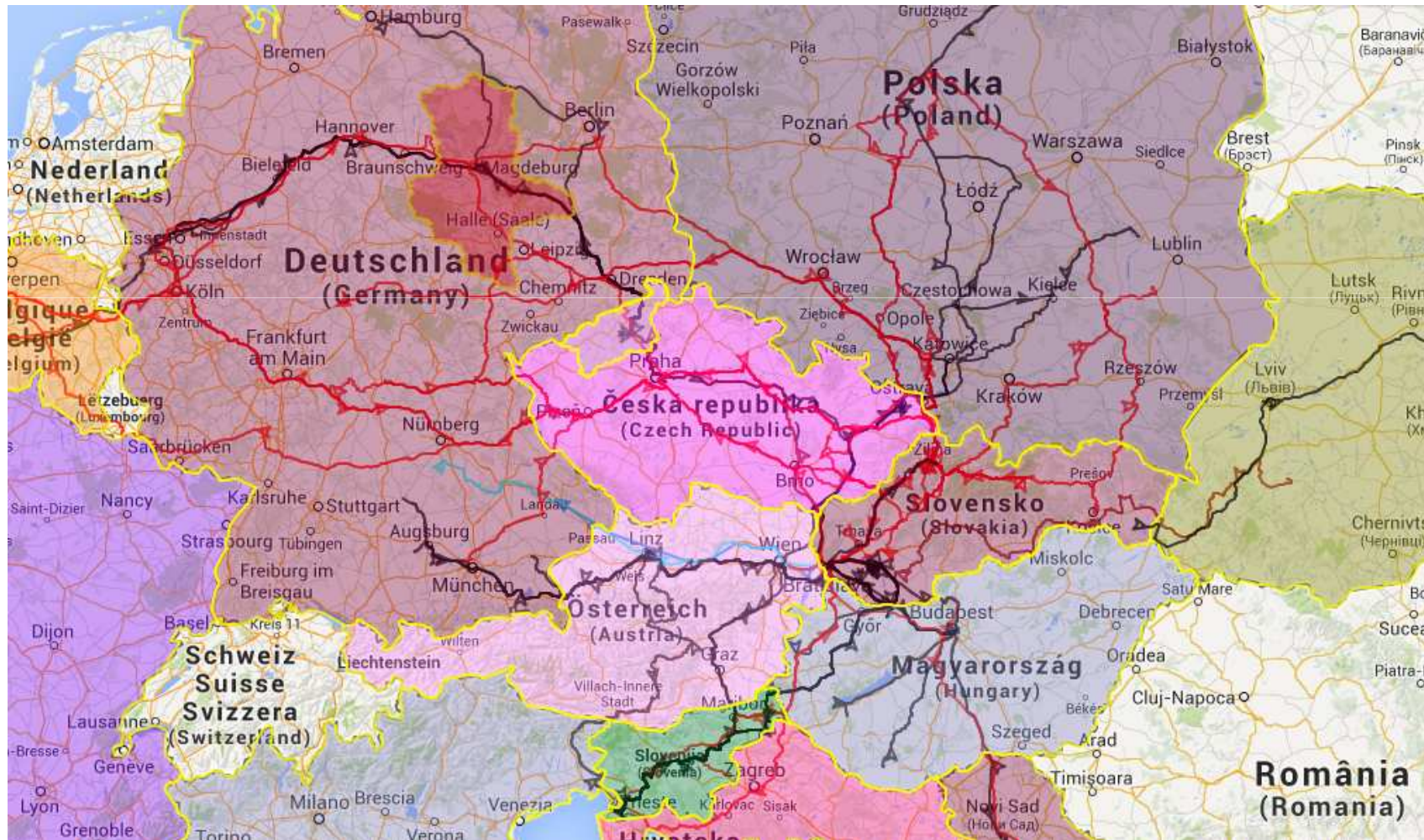
PILOT ROUTES – 136.000 km

- COUNTRIES



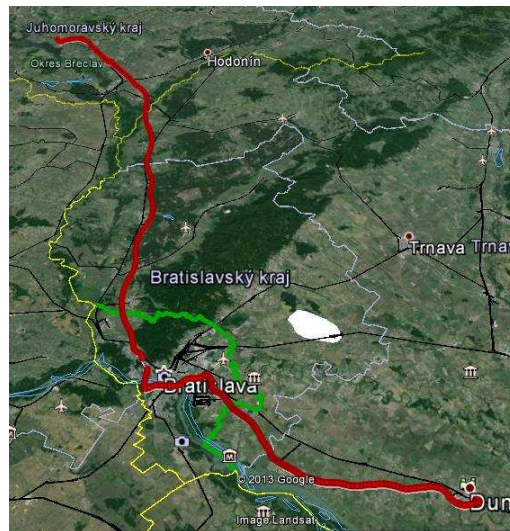


PILOT ROUTES – 136.000 km



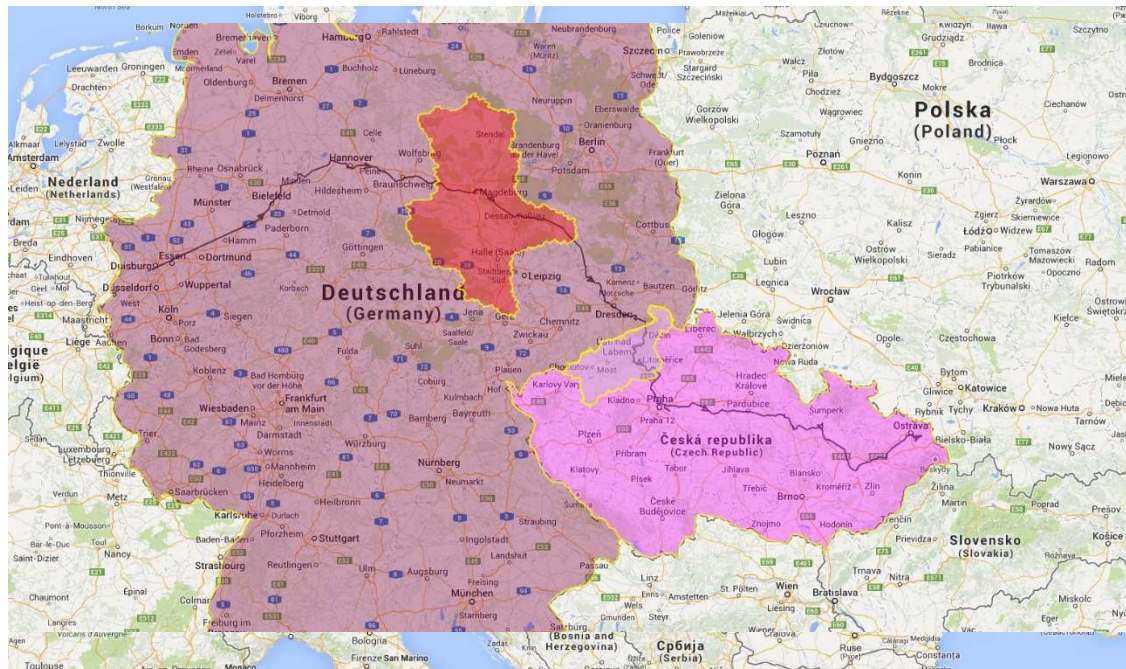
PILOT ROUTES – 136.000 km

- **Containers**
- **Lauterbach, METRANS, VOTG**
 - **DS-DUI-DS-KE-UA-KE-DS-DUI-Ostrava – tank container 22T6 – 7160 km**
- **OMEGA SERVIS**
 - **SK-UA / Doneck – UN1993 – tank container EMT6 – 3250 km**
- **22G1 container – unit inside**
 - **CZ-SK – 156 km**
 - **– full coverage**



PILOT ROUTES – 136.000 km

- Containers
- Lauterbach, METRANS, VOTG
 - DS-DUI-DS-KE-UA-KE-DS-DUI-Ostrava – tank container 22T6 – 7160 km – 11.11.2013-23.12.2013 – 42 days



PILOT ROUTES – 136.000 km

- Containers
 - OMEGA SERVIS – 7.3.2014 – 31.3.2014
 - SK-UA / Doneck – UN1993 – tank container EMT6 – 3250 km



PILOT ROUTES – 136.000 km

- **Trains**
 - **Duslo – block trains with self-discharging wagons – 19000 km**
 - CZ, PL, HU, AT, DE
 - **RCO – container trains – 8660 km – Sggns 80 - wagon**
 - **ZA-Czernjachovsk-ZA – 5x**



PILOT ROUTES – 136.000 km

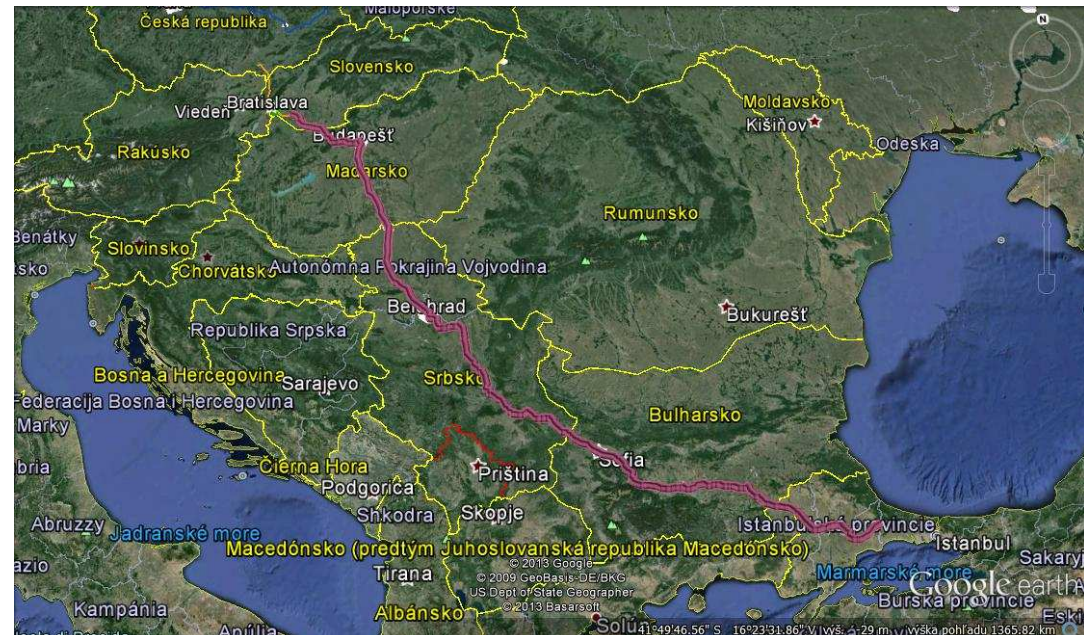
- **Trains**
 - Metrans – container trains
 - DS-Koper, DS-Budapest-DS (SK, AT, HU, HR, SI), DS-ZA-DS – 9150 km
 - DS-Cerkezkoy/Turkey – 5x – 13600 km –





PILOT ROUTES – 136.000 km

- **Trains**
 - **Metrans – container trains**
 - **DS-Koper, DS-Budapest-DS (SK, AT, HU, HR, SI), DS-ZA-DS – 9150 km**
 - **DS-Cerkezkoy/Turkey – 5x – 13600 km**



PILOT ROUTES – 136.000 km

- **Trains**
 - Bohemiakombi – intermodal trains – pocket wagons – 18200 km
 - Lovosice-Hamburg
 - Lovosice-Duisburg – 4 x
 - Lovosice-Charleroi
 - Lovosice-Ostrava – 3x
 - Ostrava-Trieste – 4x



PILOT ROUTES – 136.000 km

- Ferries and tugboats
 - Danube - SPAP – Muflon 5 – Slovakia, Austria, Germany – Kelheim - Roth
 - 8950 km
 - Danube - H&JD MARIA – Austria, Slovakia, Hungary - Budapest
 - 3100 km – BG **Giurgiu**
 - Mediterranean Sea - EKOL RO-RO vessels – HATCHE, PAQIZE, QEZBAN – Trieste-Istanbul

PILOT ROUTES – 136.000 km

- Ferries and tugboats



PILOT ROUTES – 136.000 km

- Ferries and tugboats
 - English Channel - DFDS Seaways – 5xDover-Dunquerque, 1 x Dover-Calais
 - 370 km



PILOT ROUTES – 136.000 km

- Ferries and tugboats

– Danube - SPAP – Muflon – Slovakia, Austria, Germany – Kelheim - Roth

- 8950 km



PILOT ROUTES – 136.000 km

- Ferries and tugboats
 - Danube - H&JD MARIA – Austria, Slovakia, Hungary / VIE - BUD
 - 3100 km – BG Giurgiu



PILOT ROUTES – 136.000 km

- VEHICLES - 45000 km
 - realized
 - Slovakia, Poland, Austria, Hungary, Czech Republic, Germany, Ukraine, Serbia, Macedonia, Greece, Portugal, Spain, United Kingdom, France, Slovenia, Belgium, Luxembourg, Croatia
 - planned
 - Sweden, Norway

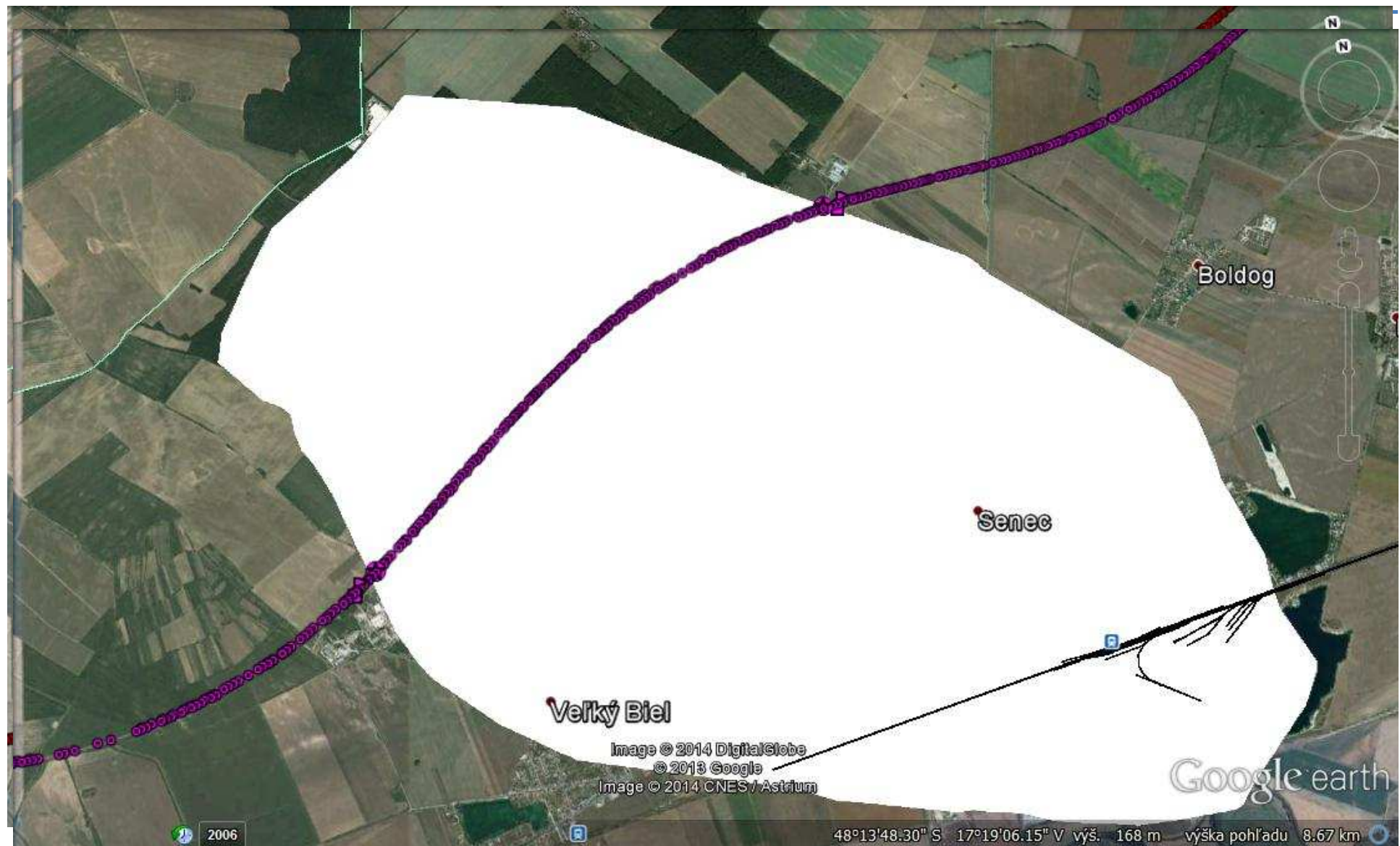
GEOFENCING

- own server application to detect
 - the country boundaries
 - smaller interested regions
 - ADR tunnels (Bratislava, Čadca)
 - Water protection areas (Bratislava)
 - Server database
 - Email notifications to predefined addresses
 - All NAM units monitored

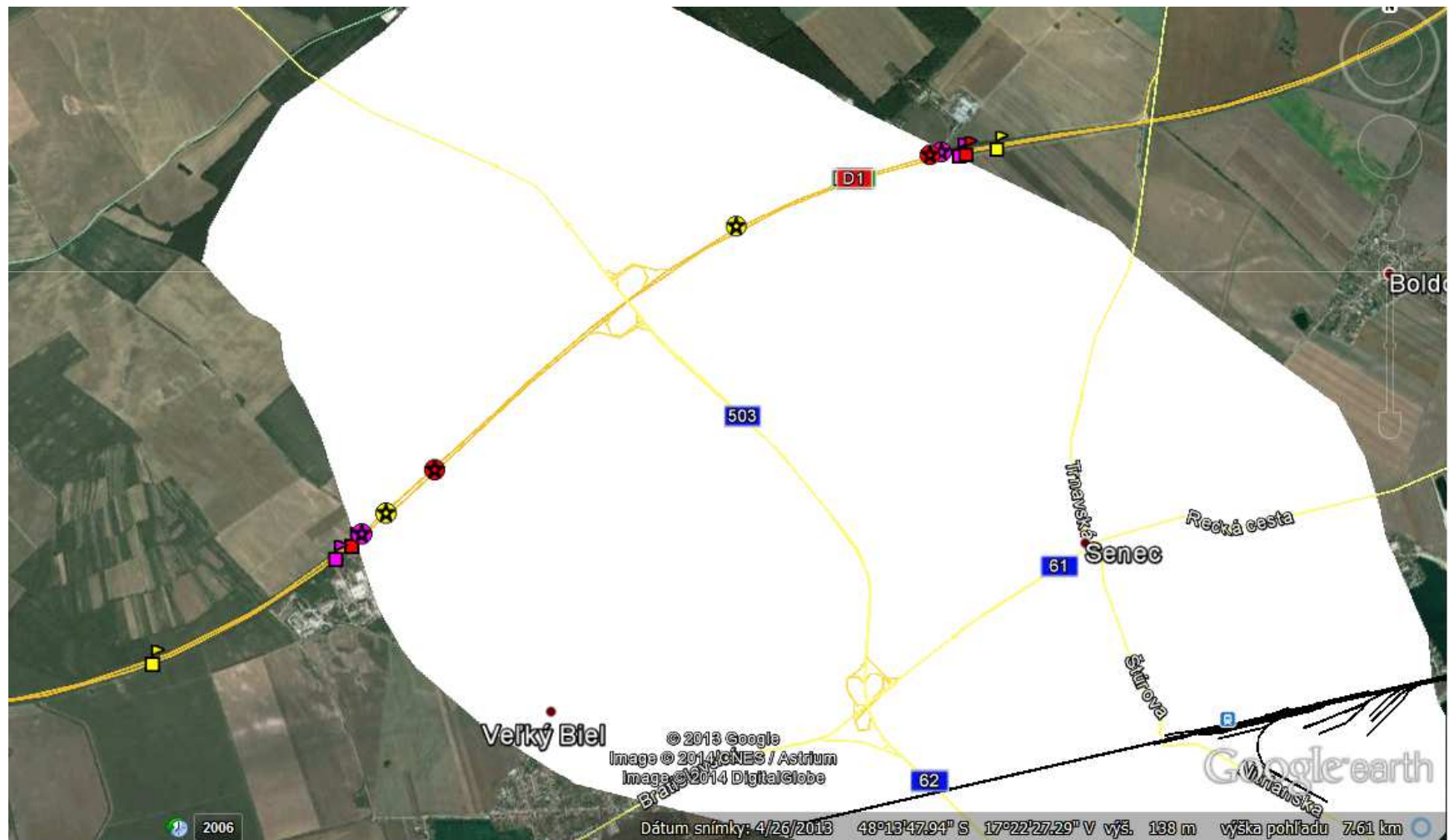


GEOFENCING TEST

- Test on the territory of Bratislava
- NCL16 NAM unit – 20 seconds frequency
- 2 SAMSUNG GALAXY SIII smartphones with android application – 1 second frequency
- Sitina Tunnel – ADR E category
- Water protection area - Peceniensky forest



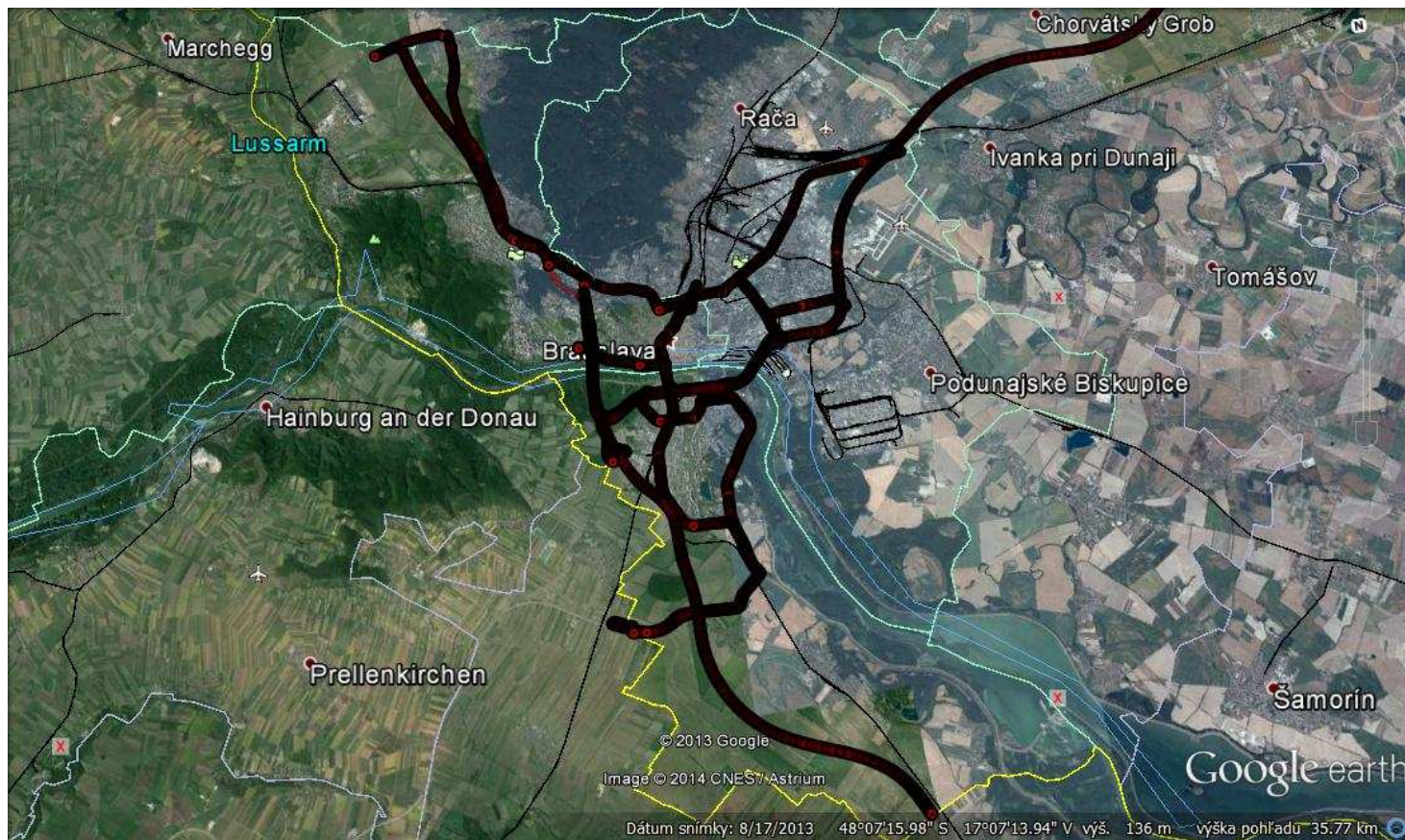
Geofencing test – Senec 4,4 km



GEOFENCING TEST - BRATISLAVA



GEOFENCING TEST - BRATISLAVA

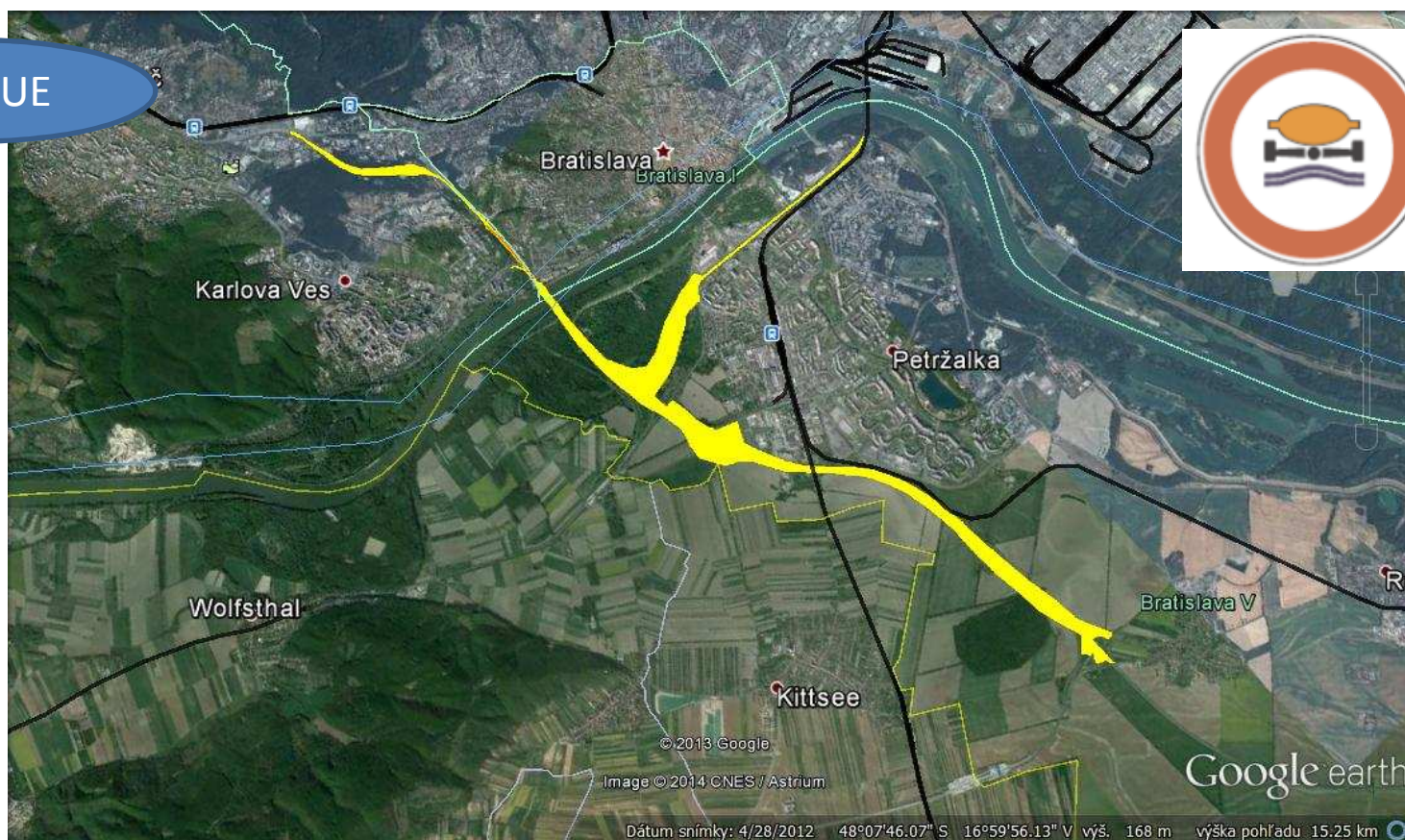


GEOFENCING TEST - BRATISLAVA



WATER PROTECTION AREA

PRAGUE



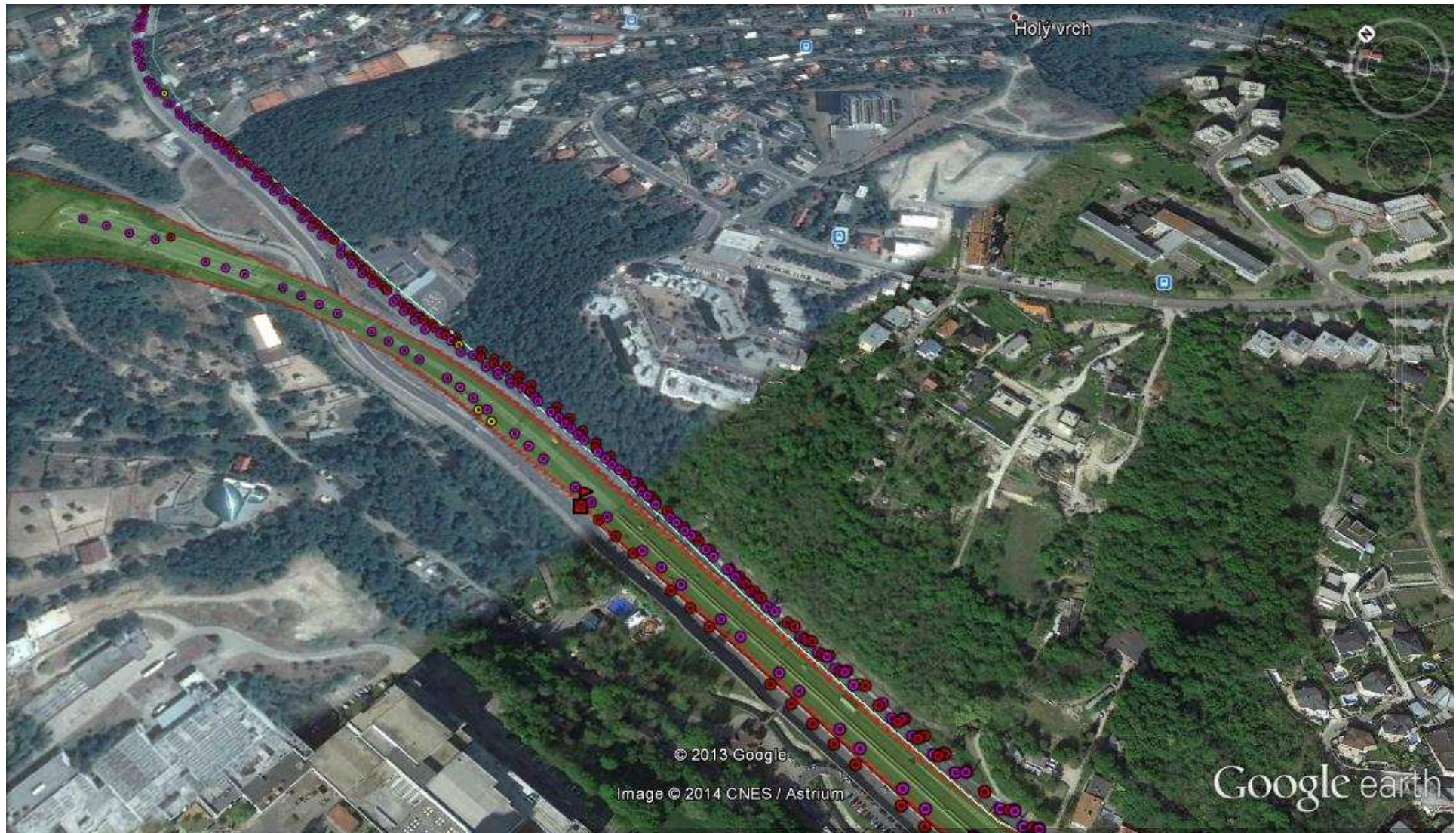
VIENNA

BUDAPEST

GEOFENCING TEST - BRATISLAVA



GEOFENCING TEST - BRATISLAVA



MONITORED UNIT

Container, vehicle, wagon, tugboat, ferry



MONITORED UNIT

Container, vehicle, wagon, tugboat, ferry



MONITORING DEVICES TESTED

NCL units - NAM system

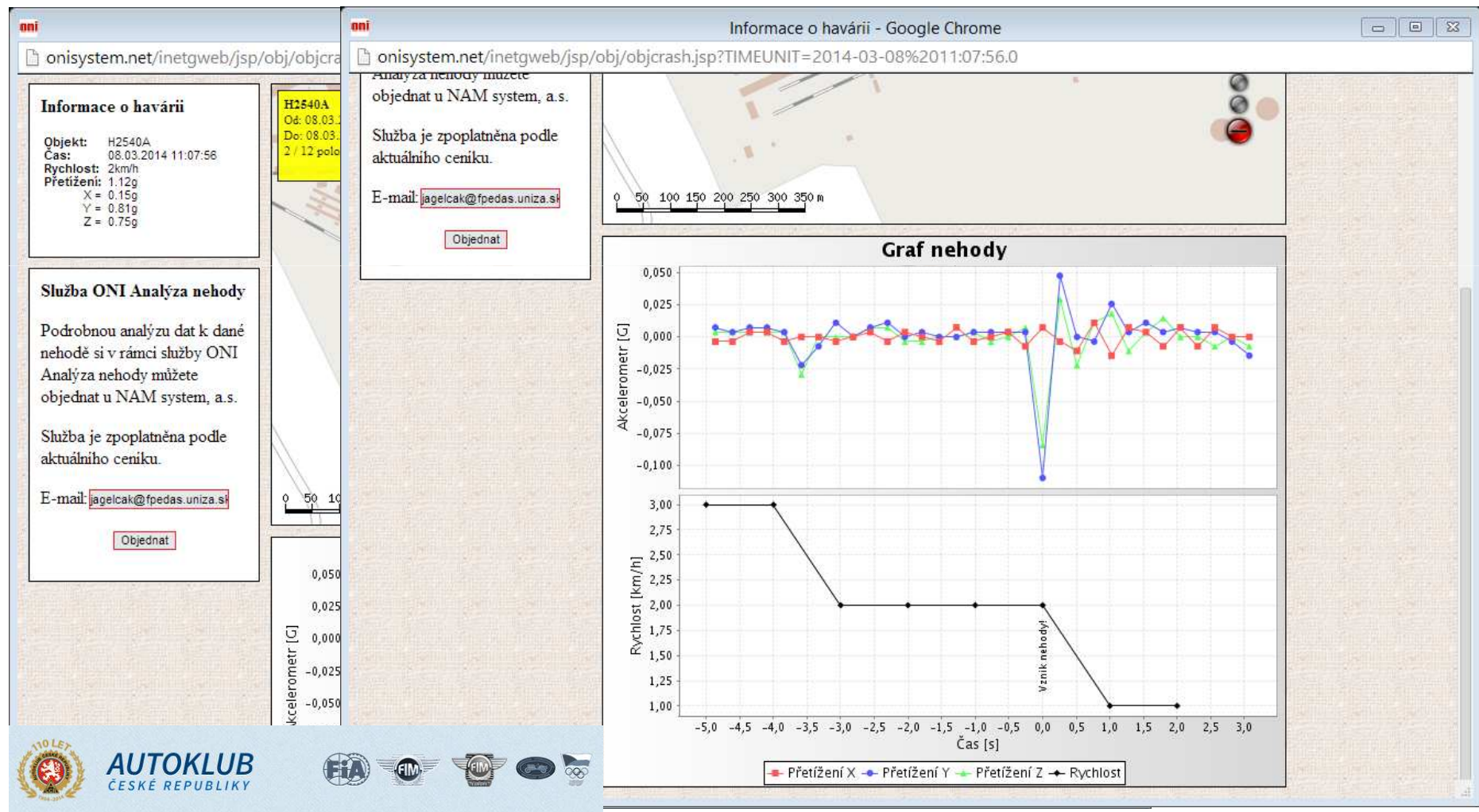
- Tracking interval – 10 sec. CZ, 20sec
- Internal temperature sensor
- Batteries for 1 week (4 units) and cca 40 days (prototypes) – possibly to extend with other settings up to 3 months

7 MONITORING DEVICES TESTED



ACCIDENT INFORMATION

<http://www.rallyzive.cz/>



MONITORING DEVICES TESTED

- M7 unit – QADRA
 - Magnetic unit
 - Intelligent tracking
 - Distance, time 20sec., heading 30°
 - Used by our intermodal operators to track containers with valuable cargo
 - Not sufficient battery capacity
 - DS-AT-KOP-Budapest,
 - DS-HU-KOP-Budapest
 - – 3500 km



Implementation and use of ITS

- Security of selected dangerous goods - UNECE-WP 15
 - Class 1
 - High consequence dangerous goods – 1.10 ADR, RID
- procedure coordinated on European level
- possible use of on board units of Satellite Electronic Toll Collection System

Application T&T technology in praxis

- Test of first OBU on wagon – Jun – July 2013
- Positive for control of logistic operations
- On- line information for operation of trains
- Decision to buy 10 OBU
- First in operation from 8.10.2013
- 21.12.2013 – battery of OBU discharged
- Localisation every 20 sec. – good for test

OBU unit on self-discharging wagon



Effects of T&T technology for chemical company

- Monitoring of movement of the train
- Evaluation of freight-forwarders and carriers – evidence of delays
- Better management of supply chain
- Better management of block train – lower transport costs
- Monitoring of transport routes to different customers



Effects of ChemLog project for chemical company

- Solutions of combine transports in chemical company
- Side-loader of tank containers - Hammar
- Transshipment rail-road
- Single wagon shipments changed to block trains with containers
- Potential increase of share of rail transport

Application of ChemLog experience – side loader for transshipment Rail - Road



Proposals for future projects

- Preparation of intermodal terminals in chemical companies
- EU co-financing of construction of intermodal terminals in chemical companies
- EU support of competitiveness of chemical industry

