

# Transport telematics as a part of the intelligent transport infrastructure

## Opening ITS Sofia Czech Days

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[www.sdt.cz](http://www.sdt.cz)

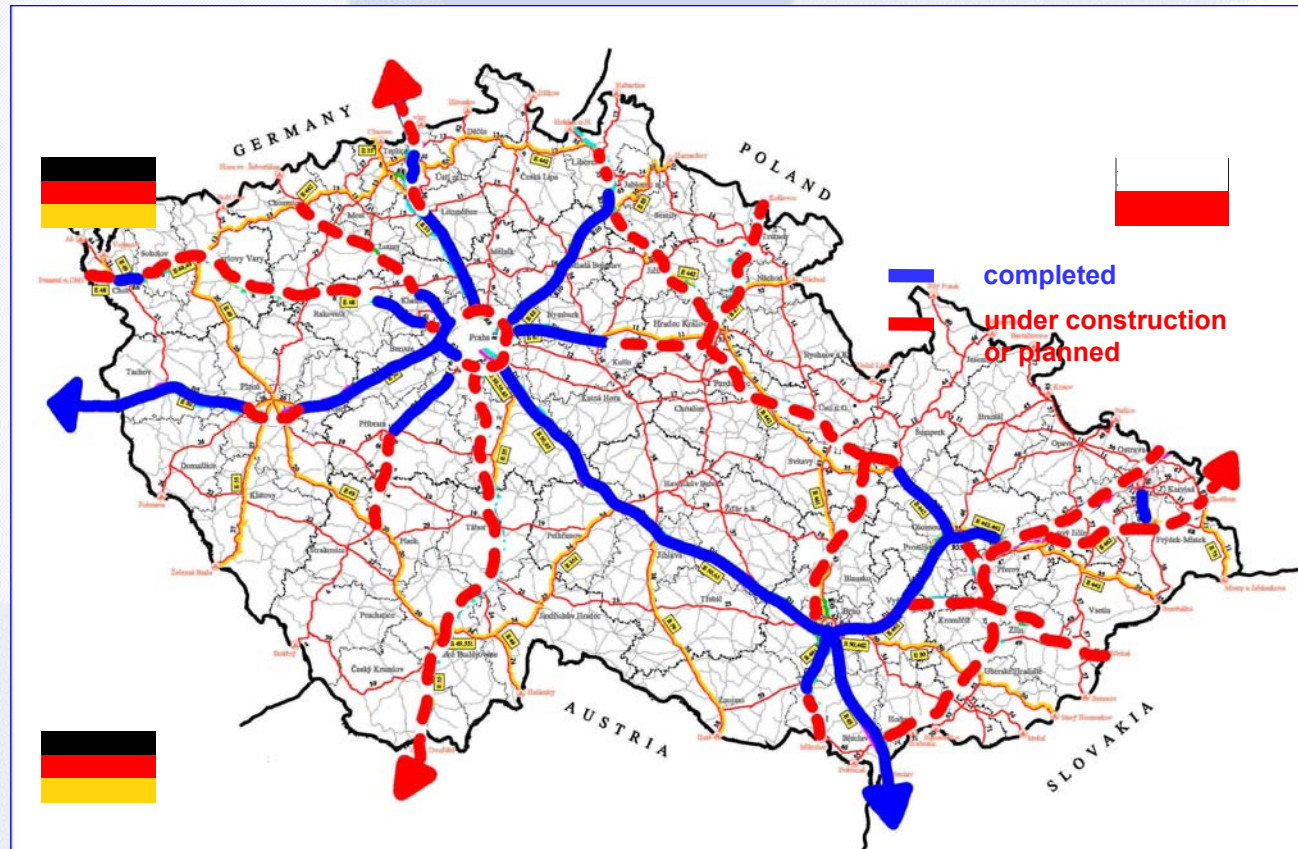


# Characteristic



- Population: 10 300 000
- Surface area: 78 864 km<sup>2</sup>

# Czech Road and Motorway Network



# Czech Railway Network

Počty traťových kolejí, systémy trakčních proudových soustav a označení podle knižního jízdního řádu

počty traťových kolejí:

— jednicová trať  
= dvojitá trať  
= trojitá trať

— územní systém kolejí: Brno - řada vnitrostátní trať; Olomouc - řada jízdy

systémy trakčních proudových soustav:

— 3 kV proudová soustava 1 kV

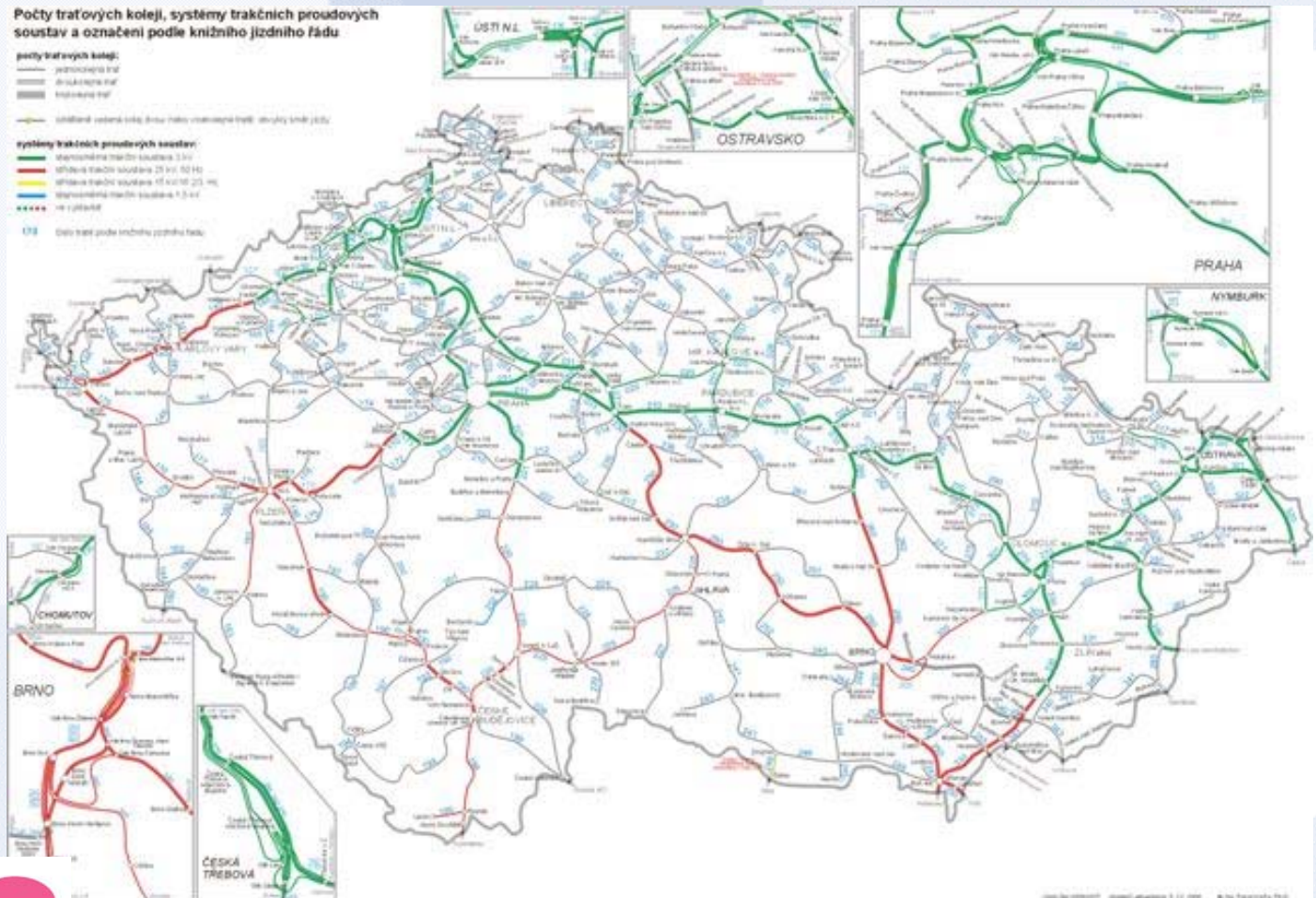
— 3 kV proudová soustava 25 kV 50 Hz

— 3 kV proudová soustava 15 kV 16 2/3 Hz

— 3 kV proudová soustava 3 kV

— 3 kV proudová

173 Dle trati podle knižního jízdního řádu



Česká republika, územní plánování 1.1.2008, M. J. Kopecký, Praha

# Transport telematics (ITS)

- Transport telematics (ITS) integrates telecommunication and information technologies (ICT) with transport engineering in order to **optimize** transport and forwarding processes.
- It is an instrument of a **sustainable** transport in Europe helping to better **economy, ecology** and **safety**.



# ITS macro functions

- 1) electronic tolling
- 2) management of rescue services
- 3) traffic management
- 4) public transport management
- 5) intelligent vehicle
- 6) journey planning & information provision
- 7) fleet and freight management
- 8) enforcement systems



# ITS applications (examples)

- Train Control Systems (ETCS)
- Communication & application platforms (GSM-R, DSRC, remote diagnostics, ...)
- Application of satellite navigation systems (GNSS, Galileo, GPS, Glonass)
- Technical specification of interoperability in railway transport (TSI)
- Transport logistic systems
- Fleet and freight management systems
- Integrated timetables for multimodal transport
- Electronic tolling and ticketing (using chip cards in integrated public transport)
- Dangerous transport monitoring

# ITS technical components

- **Sensors & actors:** gate crossing signals, cameras, active and passive detectors, radar
- **Communications:** GSM-R, GSM, GPRS, EDGE, DSRC, RFID, WIMAX, CALM
- **Positioning :** GPS, Glonas, Galileo, EGNOS, gantry systems
- **Data processing:** GIS, billing, management, expert systems
- **End user devices:** on-board units, chip-cards, user terminals

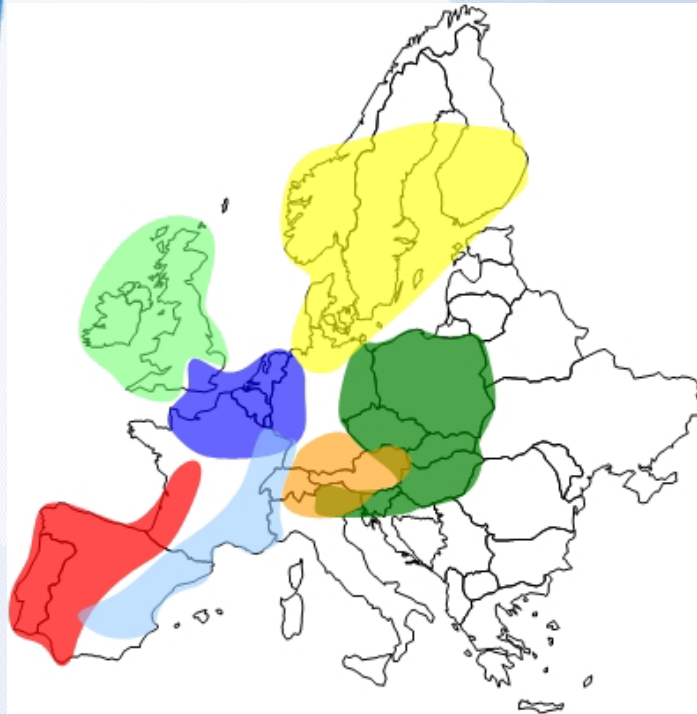
# ITS benefits (examples)

- ITS makes railway transport more **attractive and competitive**
- ITS is an instrument of **multimodal** transport
- ITS is increasing traffic **safety** and infrastructure **capacity**
- ITS helps to **harmonize** the transport modes
- ITS supports **fair state granting** into public transportation
- ITS has a general indirect influence on national economy and **GDP** growth

# Implementing ITS ...

- ITS must be an **integral part** of the transport infrastructure and vehicle equipment
- It is ineffective and extremely costly to implement ITS separately = it must be a part of the infrastructure investment
- ITS must be **interoperable** = must comply with ITS architecture, standards (CEN 278, ISO 204) and technical specification of interoperability in railway transport (TSI)

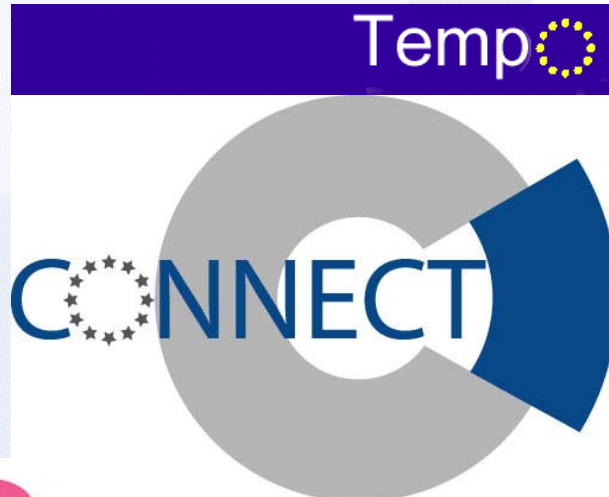
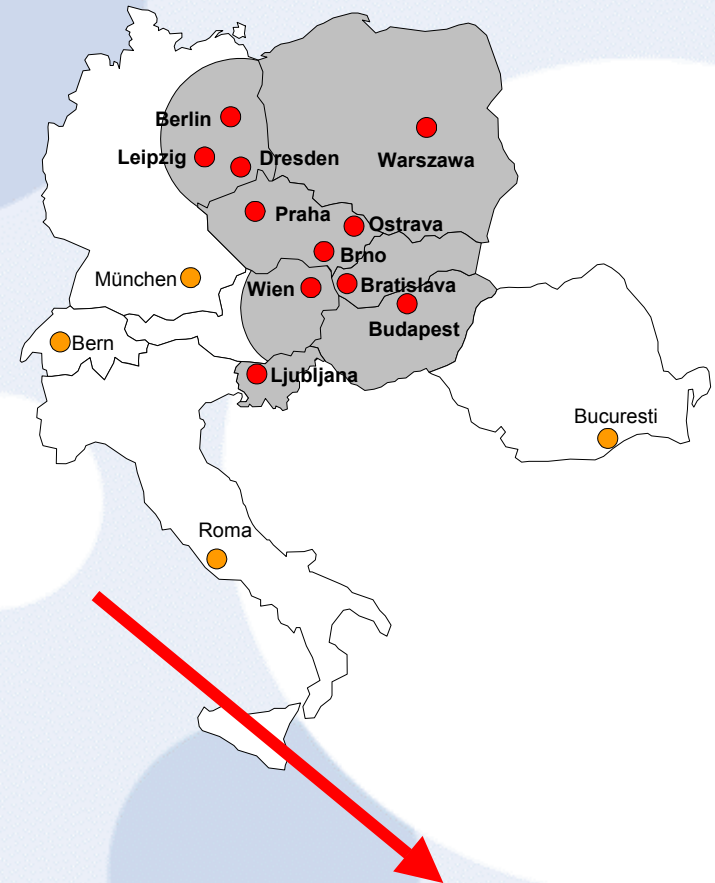
# European Consequences



- Effective Transport is one of the **key European issues** of today and near future
- Harmonised ITS services on transeuropean roads and railways are strongly required
- EU supports ITS through EU projects

# Euro-regional project CONNECT

- **CO**-ordination and stimulation of **iNN**ovative ITS activities in central and eastern European **CounTRies**



**Future: EASYWAY**

# Thank you for your attention

