

12th UIC Workshop on Railway Noise & Vibrations

Issues of the Railway Noise in the Czech Republic

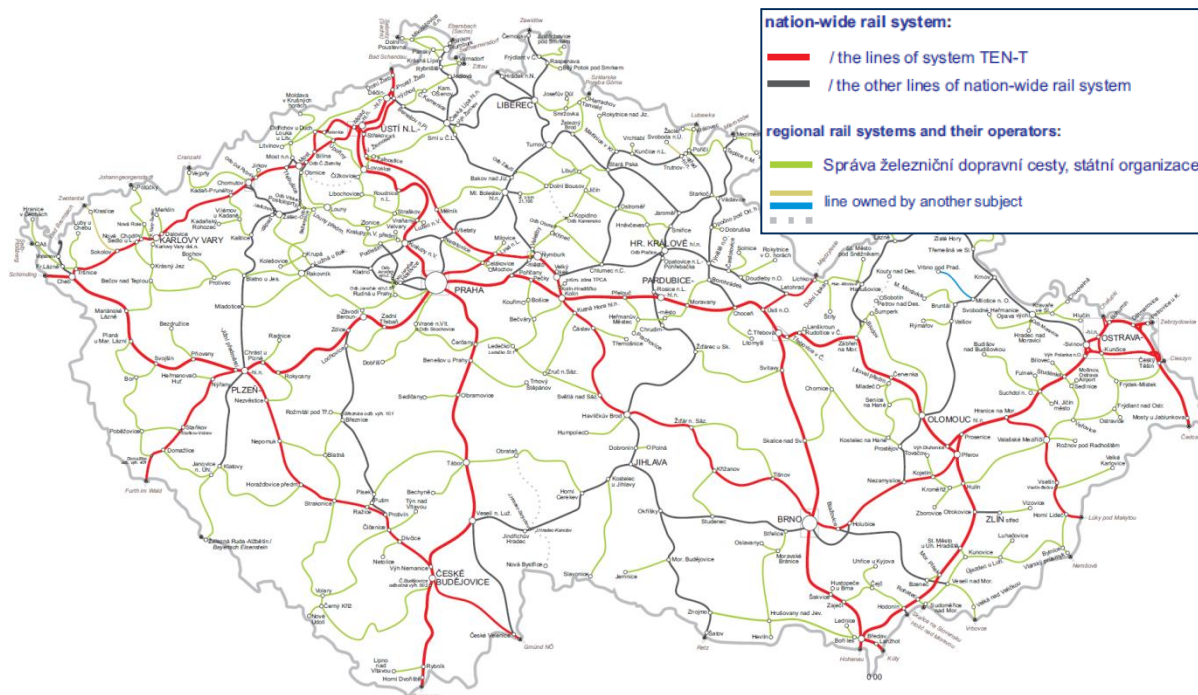
Lenka Vaňková

Operability Section of Railway Infrastructure Administration

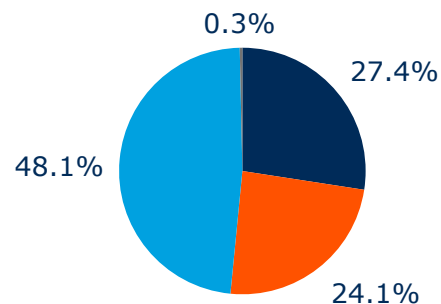
Paris, 19. 03. 2019

SŽDC Railway Network

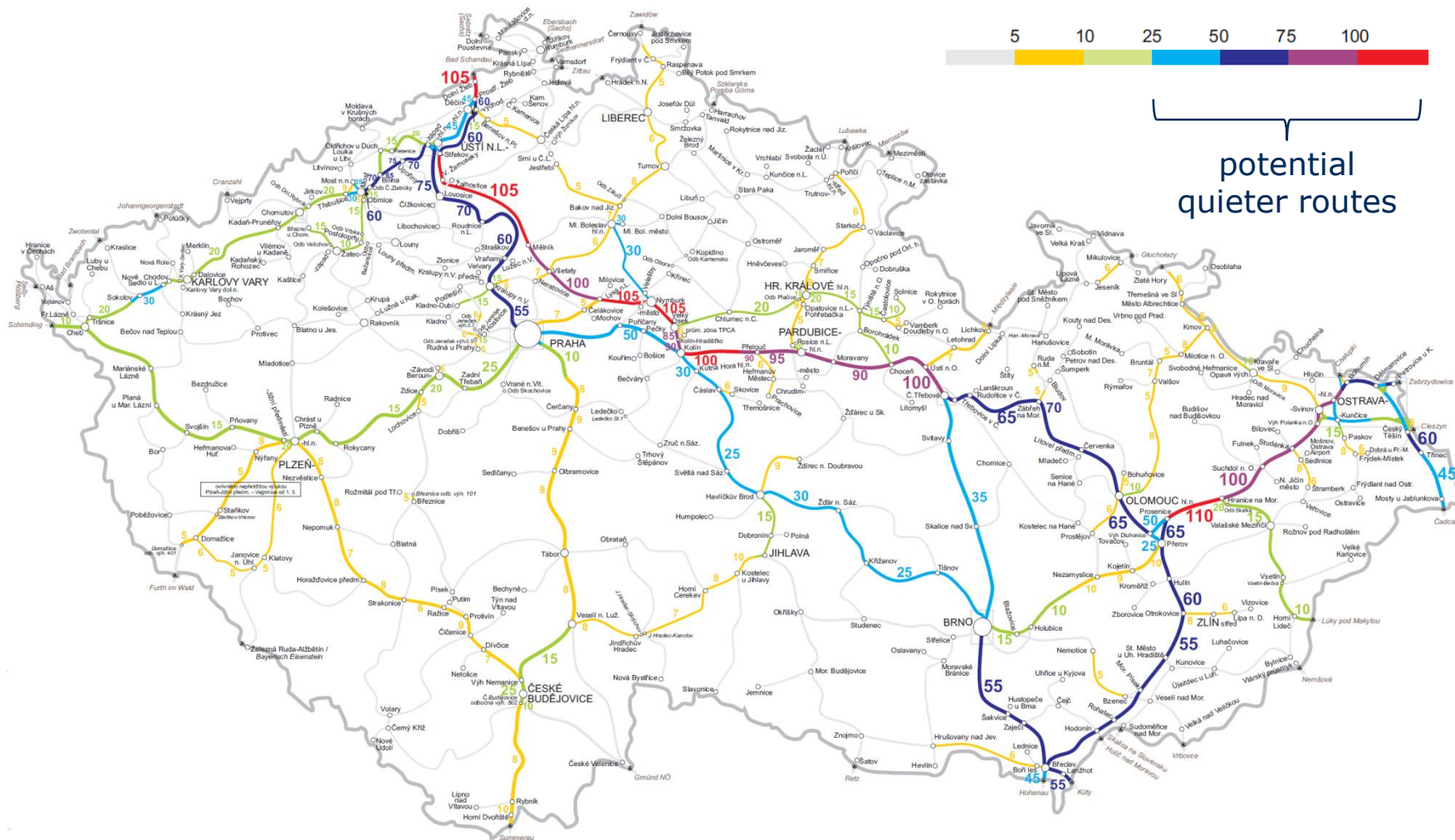
- **Owner:** state
- **Operator:** SŽDC
 - operability
 - maintenance
 - modernization
 - development
 - ...



■ national-wide rail system - TEN-T	2596 km
■ national-wide rail system - other lines	2282 km
■ regional rail system	4553 km
■ ridings	32 km
<u>total length of rail lines</u>	<u>9463 km</u>

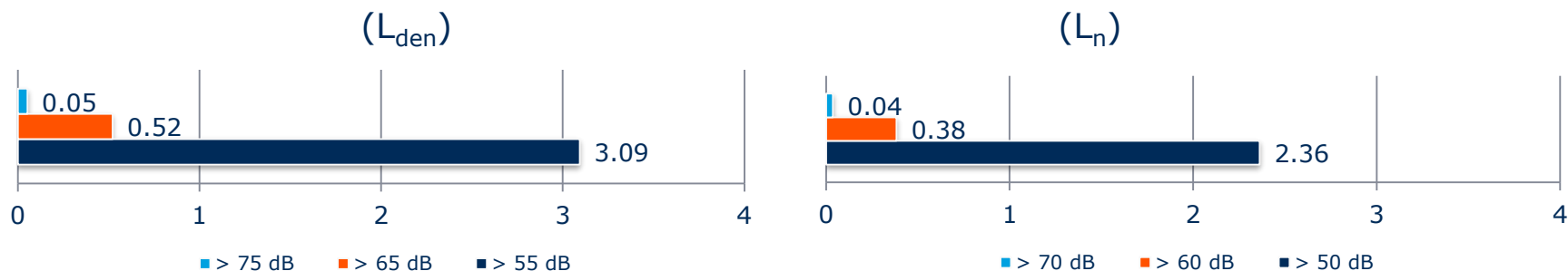


Average Daily Intensity of Freight Trains

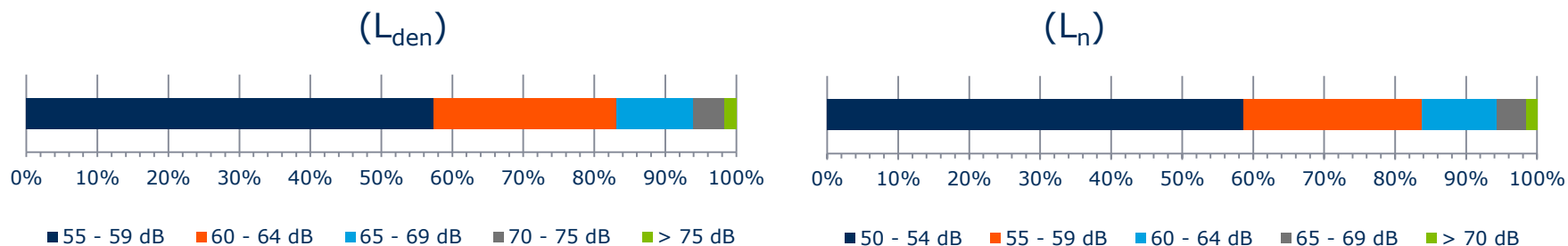


Strategic Noise Mapping 2017 – 3rd Phase

Percentage of people exposed to noise from the major railways including agglomerations over the total population of the country (10,5 mil.)



Distribution of population exposed to railway noise



Noise National Legislation – Pass-by Noise

Outside Limits [dB]	Day (6 – 22)	Night (22 - 6)
dwellings	60 (up to 70)	55 (up to 65)
schools, social facilities	60 (up to 70)	-
hospitals, spa areas	55 (up to 65)	50 (up to 60)

Inside Limits [dB]	Day (6 – 22)	Night (22 - 6)
dwellings	40 (45)	30 (35)
schools, social facilities	45	-
hospital rooms / surgery	40 / 35	25 / -

- Noise mitigation is required also for the existing network.
- No cost-benefit or cost-effectiveness analysis required.
- Penalties for exceeded noise reception limit on rail. infrastr. manager.

Commonly Used Noise Mitigation Measure

construction

- fastening system

maintenance

- rail grinding, reprofiling

ordinary noise barriers.....242 810 m

- height 1,5–4 m

low height noise barriers.....776 m

- concrete block (BRENS - Czech)
- aluminum segments (SOUNDIM - Finnish)

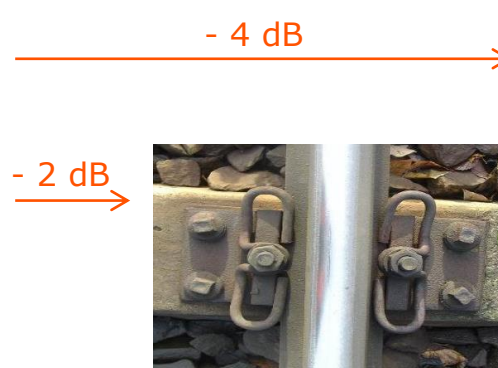
rail dampers (absorbers).....6 785 m

- Intertech (Czech)
- Styl2000 (Czech)
- SilentTrack (CORUS)

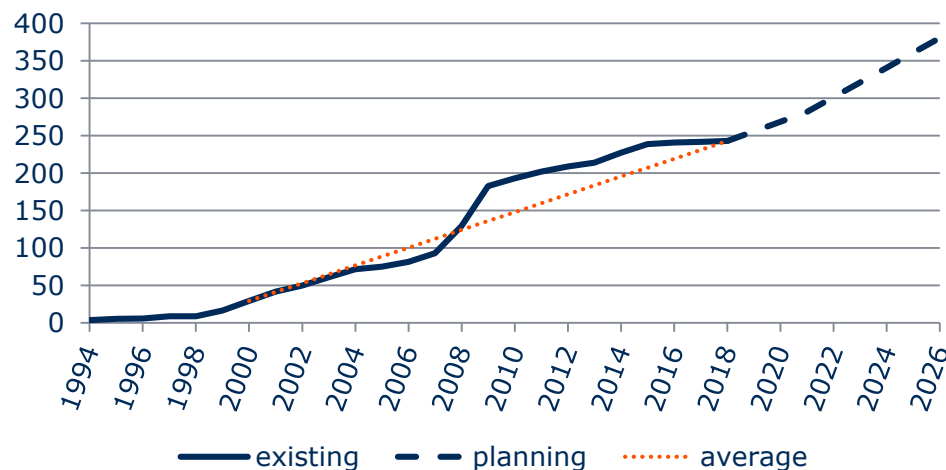
efficiency 1–5 dB

noise insulated windows

- effective ventilation must be included



Installation of noise barriers [km]



Low Height Noise Barriers



**LOW HEIGHT
NOISE BARRIER
ALONGSIDE
DOUBLE TRACK?**



EU 's Policy



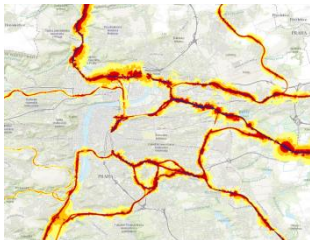
TSI NOI, TSI WAG

- call for proposals (limit cca EUR 8 mil.) – closed 04/2018
- now 20–30 % silent wagons among Czech freight operators



NDTAC (EU 2015/429)

- bonus for (only) retrofitted wagons from 1. 1. 2020
- ca EUR 0,004 / axle / km



END (2002/49/EC)

- implementation CNOSSOS: starting
- *data of rail roughness, brake type, wheel measure are not available or collected yet*



Thank you for your kind attention

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