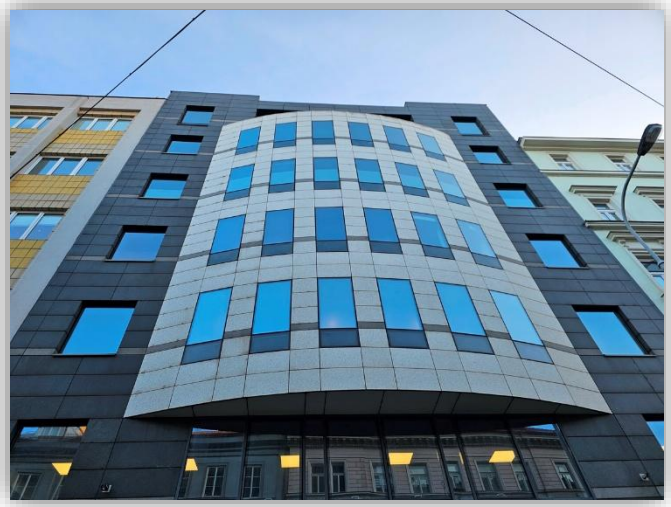
20. 1. 2026

CCS TSI & ERTMS Open Days Workshop

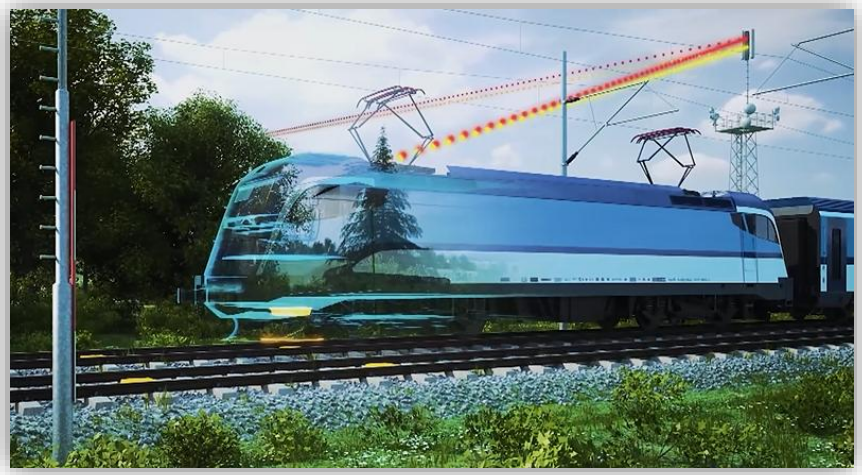
National Safety Authority Perspective on ERTMS



Drážní úřad (NSA CZ), Prague

Main motivations for implementing ETCS on the infrastructure of the Czech Republic

- × Increasing number of passed stop signals and subsequent train collisions
- × Outdated national train protection system
- × Interoperability of the railway network

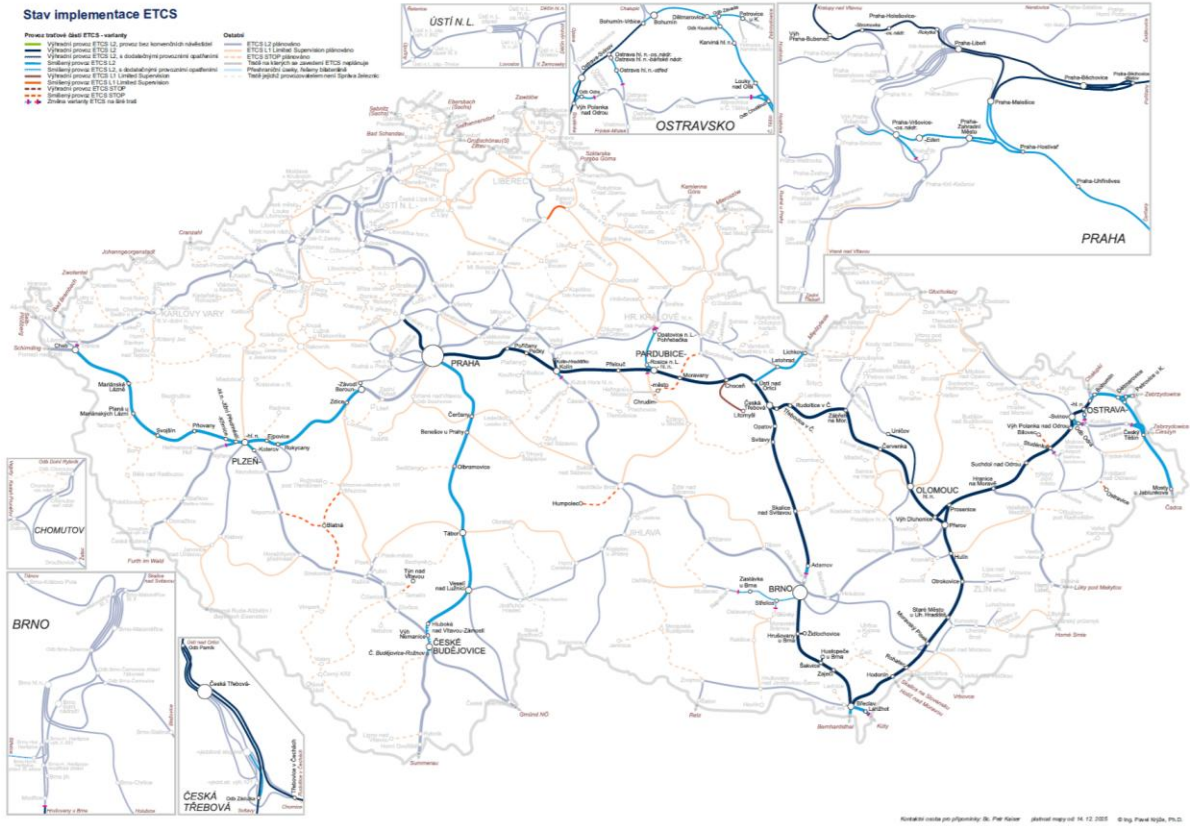


National Safety Authority Perspective on ERTMS

Implementation of the ETCS ➡ Increase the level of safety

The entire ETCS system must function properly.

Status of ETCS implementation on 14.12.2025



Preparation for exclusive ETCS operation according to NIP

- ✓ Assumption of the required number of vehicles equipped with the ETCS system
- ✓ Expected number of trained drivers and implementation of the system into the regulations of carriers and railway operators
- ✓ Functional compatibility between vehicles and infrastructure

National Safety Authority Perspective on ERTMS

First experiences with exclusive ETCS operation on the Olomouc - Uničov line

Observation period: from 23.12.2022 to 7.8.2023

167 emergency stop events

127 events due to loss of communication between the stationary and mobile parts

approximately 1% of the total number of dispatched trains

National Safety Authority Perspective on ERTMS

Preparation for exclusive operation on main corridors from 1.1.2025

Working group led by the Railway Authority from 30.10.2023 at monthly intervals

- ✓ **Unified access to information – portal with registered access** — IM + DÚ
  - **Regular evaluation of "fault" events on all equipped tracks** — AŽD + DÚ
  - **Regular updating of the track map with functional/non-functional ETCS** — IM + DÚ
  - **Interface for reporting defects with code lists (type of defect, train number, km location, date/time)** — IM + DÚ
- ✓ **Methodology for verifying the proper functioning of vehicles on the infrastructure** — NoBo + IM + RU and producers + DÚ
- ✓ **Verification of infrastructure functionality – reference measurement** — NoBo + IM + RU and producers + DÚ

National Safety Authority Perspective on ERTMS

- ✓ **Regular communication between entities**
- ✓ **Appointment of an expert group by employees responsible for addressing of ETCS issues**
- ✓ **Making a map available with an overview of ETCS sections in operation**
- ✓ **Interface for reporting faults from RU to the IM**
- ✓ **Evaluation of GSM-R communication outages**
  - ✓ Regular GSM-R measurements on the infrastructure
  - ✓ Regular evaluation of reliability/availability on specific vehicle series
- ✓ **Permormance tests with maximal operated vehicles at the time**
- ✓ **Setting the section timer from 18 to 40 seconds for better condition of connection recovery**
- ✓ **Implementation of comprehensive diagnostics of the transmission and radio network**

National Safety Authority Perspective on ERTMS

The introduction of ETCS operation on main lines highlighted

- Insufficient availability of spare parts
- Absence of free software updates for onboard installations on vehicles
- Inconsistency in installation solutions and functionality, thus shifting responsibility to the train driver
- Odometer readings based on speed measurement signals depends on adverse weather conditions

The Railway Authority points out :

- Lengthy approval processes
- Inconsistent and benevolent TSI requirements
- Frequent modifications and changes of TSI

National Safety Authority Perspective on ERTMS

Subsequent steps of the Railway Authority:

- Before starting of exclusive operation, if the line is already ready, we mandate the use of ETCS as the highest level of safety (if the operator has equipped vehicles available and sufficient trained personnel)
- Notification of ETCS texts/messages in Czech
- Suggestions for changes to TSI specifications in order to standardize functionality and usability (e.g. enabling of display dimming, automatic testing of components and systems, placement of displays, conditions for vigilance control, etc.)
- Supports for alternative safety systems on lines not equipped with ETCS (PZV – on base of ETCS components)

Thank you for your attention