AŽD
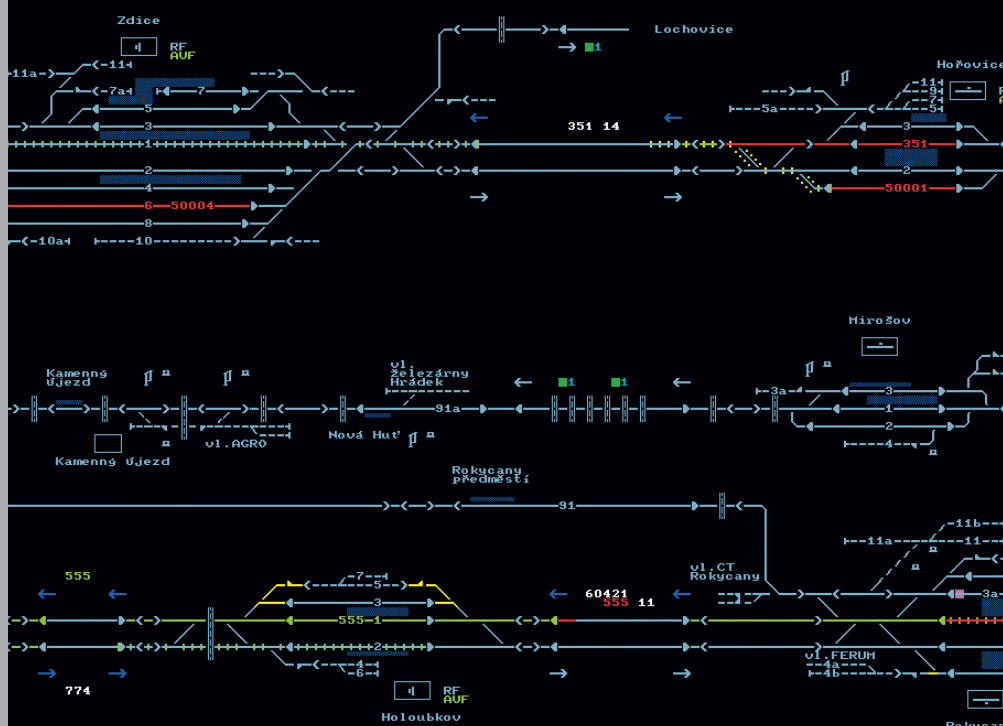## CTC-TMS-ARS

This brochure provides details about the Centralized Traffic Control system TrafficSWing DOZ-1, the Graphical and Technological Layer TrafficSWing GTN, Automatic Route Setting functionality and the Control Traffic Center (CTC).

TrafficSWing DOZ-1

Centralised Traffic Control of **the signalling equipment**

- Electronic system enabling control of railway signalling equipment from remote locations
- Failsafe and reliable system meeting SIL 4 requirements according to CENELEC standards
- Different levels of dispatcher's control
- Possibility to carry out safety critical functions

- High availability of transmission system
- Low maintenance costs
- Transmission of train numbers at all control levels
- Combined display of the commanding computer for interlocking and ETCS
- Centralised traffic control for up to 20 interlocking systems
- Maximum number of dispatcher´s commanding computers is 24 (optionally configurable and interchangeable)
- Training environment for TrafficSWing DOZ-1 and other related systems

To improve general overview, TrafficSWing DOZ-1 workplace is equipped with train describer system and railyard can be displayed on large screen display.

The individual interlocking systems are connected to TrafficSWing DOZ-1 by two independent transmission networks to increase availability and reliability.

Transmission means use various technologies - SDH, MPLS, range of controlled area up to hundreds of kilometres when communicating via fibre-optic cable.

The area controlled by TrafficSWing DOZ-1 can be equipped with Automatic Route Setting functionality (ARS), compatible with TrafficSWing GTN.
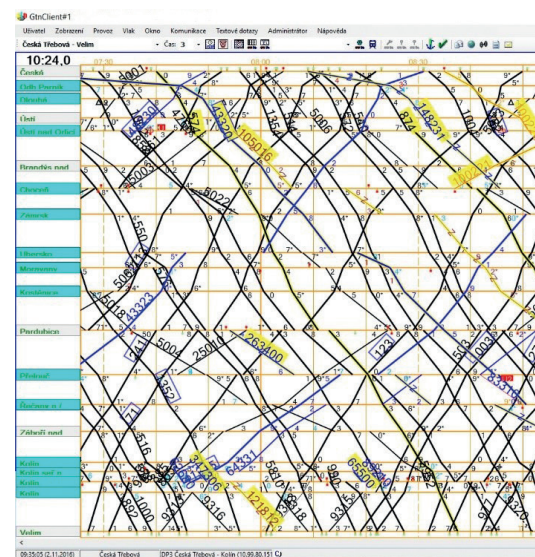
TrafficSWing GTN

Traffic Management System – Graphical and Technological Layer

- Online traffic situation overview in the controlled area
- Automatic traffic log
- Compatible with StationSWing ESA, TrafficSWing DOZ-1
- Data exchange with operational management information and control systems in accordance with TAF/TAP TSI
- Automatically controls passenger information systems (e.g. TrafficSWing HAVIS-III) and intelligent stops
- Provides data for trackside part of „ATO over ETCS" (DriveSWing DRS-10)
- Indicates failures detected by diagnostic systems of railway vehicles (e.g. hot box and flat wheel detector DiagSWing ASDEK)

AUTOMATIC ROUTE SETTING FUNCTIONALITY (ARS)

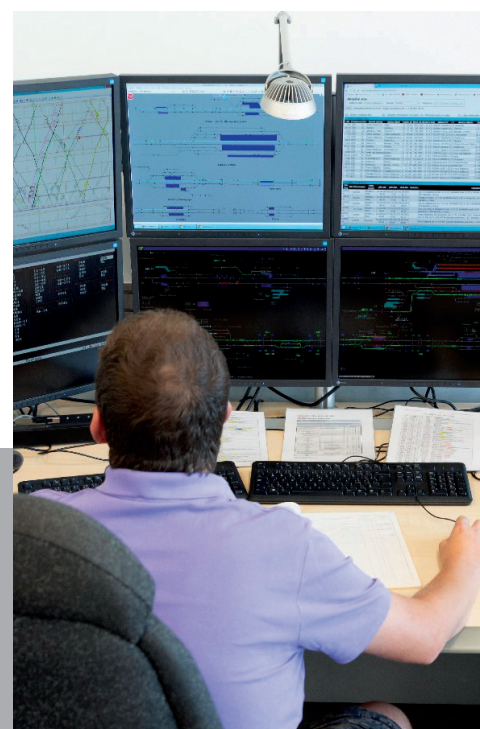## TrafficSWing GTN Extension Functionality for Traffic Control

- Part of intelligent traffic control, an element of automated traffic control
- Reducing the stress load of traffic employees, freeing them from routine service tasks
- Optimization of the anticipated traffic situation
- Tools for resolving traffic conflicts, disposition criteria
- Graphical train route planner - sequence of station and line tracks, variant routes over headways
- Automatic train turnaround
- Automatic train exit from the controlled area
- Indication of future automatically set train routes in the dispatcher´s commanding computer
- Compatible with StationSWing ESA and TrafficSWing DOZ-1

Status as at 03 / 2022 in the Czech Republic:

TrafficSWing GTN operational application covers 650 traffic points of the railway infrastructure.

ARS functionality is active on 520 km of lines and provides setting the train routes at 75 traffic points.

CONTROL TRAFFIC CENTER (CTC)

Control Traffic Center (CTC)

- Controlling the transport from specialized control rooms, concentrating overall control of interlocking systems in one place brings the possibility of effective integration of automation and optimization systems
- Close connection of operational and direct control brings the possibility of flexible response to emergency events in transport
- Equipped with the most advanced information and control systems
- Progressive server solutions, powerful HW, HW virtualization
- Multiple power supply backups, transmission system backups, secured data networks
- Sharing human resources, flexible optimization in control room
- Ability to increase the grade of automation of traffic control effectively and efficiently, increase the quality of traffic control
- Training center, training hall