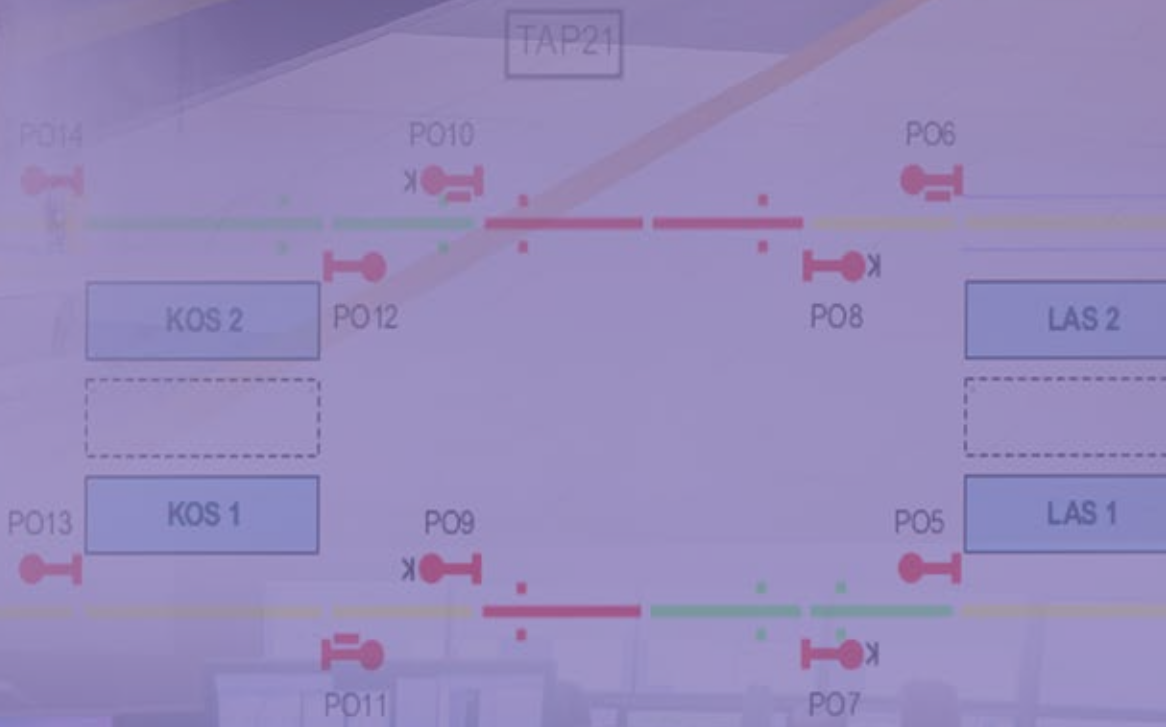
MIPRO METRO SOLUTIONS

AUTOMATIC TRAIN SUPERVISION



HIGHLY SCALABLE MIPRO ATS FOR RELIABLE AND EFFICIENT METRO TRAFFIC FLOW

MIPRO

MIPRO ATS AUTOMATIC TRAIN SUPERVISION

Mipro's ATS, Automatic Train Supervision and control system is based on modern computer technology and developed for reliable and efficient metro traffic control and management. Its functionalities and features are designed for fully automatic operations and for demanding control environments with high traffic frequency.

The operational environment of the system is designed according to customer and national requirements and in the required language. Mipro ATS provides

- Scalable and modular system architecture enabling easy maintenance, later modifications and extensions
- Fully automatic operations for high frequency traffic environments
- Interoperability with different interlocking systems
- Function modes for specific traffic situations

Mipro's ATS Automatic Train Supervision and control system ensures flexible and user specific traffic visualisation.

FLEXIBLE AND RELIABLE SYSTEM STRUCTURE

The ATS operation control system is based on the proven principle of a modular system architecture which is highly adjustable and flexible for specific application purposes.

The system can be implemented and commissioned in phases and new traffic areas can be easily added under the control of the system at any lifecycle stage.

HIGH AVAILABILITY AND RELIABILITY

Availability and reliability are further enhanced by the system's proven technologies and redundant platform features. The ATS system is designed to tolerate unexpected computer and component failures. This is achieved by using hot-standby redundant servers which back up each other in a failure situation and ensure uninterruptable use of the system.

ATS SYSTEM STRUCTURE AND HARDWARE

The ATS system is based on modular hardware components and software modules. The workstations and remote control servers are based on Microsoft Windows software environment which ensures easy integration with third party applications. The main system parts and components are:

- Redundant (hot-standby) real-time ATS system servers
- Workstation servers and ATS operations control workstations
- Control and dispatching tools and software for automatic and manual control of metro traffic

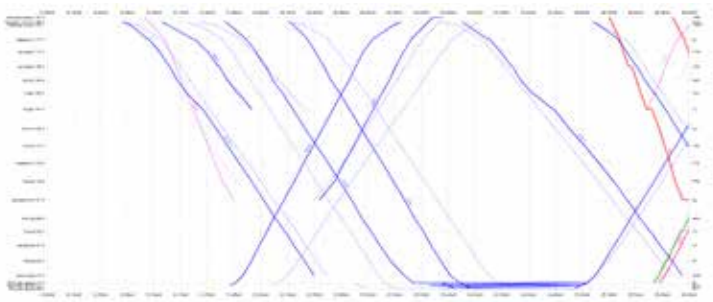
The ATS system platform utilises Commercial Off-The-Shelf (COTS) components which are easily replaceable and maintainable. In this way, we guarantee constant and cost-effective lifecycle maintenance and upgrades.

FULLY AUTOMATIC FUNCTIONS FOR VARIOUS TRAFFIC SITUATIONS

The ATS operation control system features and functions are designed to support fully automatic operation based on predefined timetables, routes and train services. Timetables can be downloaded from external timetable systems such as Hastus in standard formats (RailML).

In disturbance and conflict situations, the user can change the function of the automatic operations and set it into various exceptional traffic modes.

Each function and its detailed activity are defined in co-operation with the customer and any system feature can be added later to the system during its lifecycle.



SIMULATOR AND PLAYBACK

The simulator and playback are basic features of Mipro's ATS system concept. The simulator is specially designed for training dispatchers and simulating real life traffic scenarios. Furthermore, it can be used to simulate various signalling and interlocking systems functionalities in a real traffic control environment prior to commissioning.

The simulator can be integrated into the playback event recorder, allowing recordings from the live environment to be used as basis for simulation.

ATS AND SITUATIONAL AWARENESS

The ATS system collects data from several sources for joint analysis and visualisation with the situational awareness system.

Versatile information about the operation helps to identify the key functionalities and related improvement needs. Furthermore, it enables the development of customer-specific Key Performance Indicators (KPIs) to monitor and improve the overall system performance.

SEAMLESS INTEGRATION

The ATS system integrates seamlessly into various interlocking systems and provides a unified operational environment, data transmission connections and interfaces for interlocking control of a track section.

Third party systems installed on the traffic areas can be connected to the system so that data related to traffic control can be transmitted through the workplaces for use by dispatchers.

Tunnel systems (such as fire alarms, fire doors and facility surveillance systems), current supply systems, passenger information and timetable systems are easily connected to the Mipro ATS system.

The ATS system can be used to control the info displays and automatic announcements of the platforms. The information on the info displays is dynamically updated and controlled by the ATS system.

INTEROPERABILITY

Flexible interfaces to third party systems

AVAILABILITY

High quality SW and HW design

SCALABILITY

Modular system architecture

ADVANCED AUTOMATICS

FEATURES

- Fully automatic operations for high frequency traffic environments
- Modular and scalable system architecture
- Availability and adaptability
- Easy integration with interlocking and other systems
- Function modes for specific traffic situations
- Simulator and playback functions as integral system parts
- CBTC (Communications-based train control) positive

REFERENCES

- West Metro interlocking system delivery (2015-2017)
- Helsinki metro interlocking system delivery (2016-2019)
- West Metro extension interlocking system delivery (2020-)

READ MORE

For information about our metro interlocking and situational awareness solutions, please see the brochures:

- Mipro Metro Solutions: Interlocking System
- Mipro Railway Solutions: Mipro REGO Situational Awareness

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Mipro is specialised in railway and industrial systems. Our systems are used for safety management in railway and metro services and industry processes as well as for controlling processes in water and energy management.

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Our operations are managed in accordance with an integrated management system certified according to ISO 9001 standard, and an environmental system certified according to ISO 14001.