MIPRO RAILWAY SOLUTIONS

MIPRO REGO

SITUATIONAL AWARENESS

OVERALL VIEW OF THE TRAFFIC SITUATION AT A GLANCE

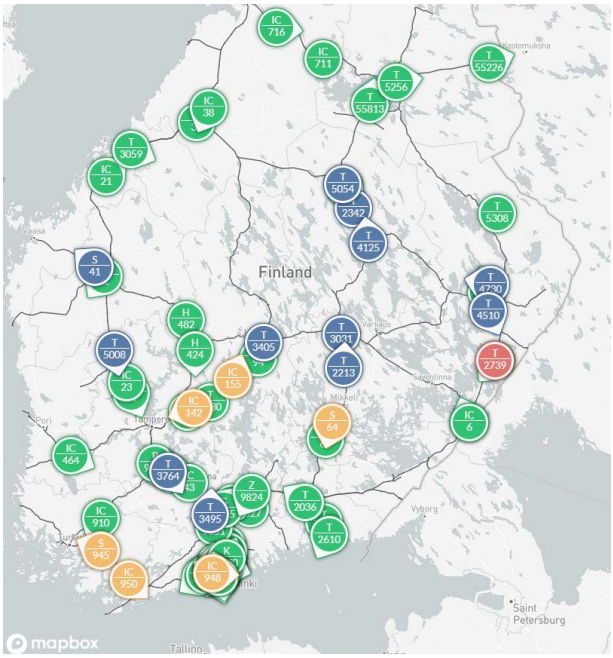
MIPRO

MIPRO REGO - DYNAMIC INTEGRATION OF EXISTING SYSTEMS

Mipro REGO is a Geographic Information System (GIS) based situation awareness system that connects human reasoning ability with situational information of various systems. The importance of clear and easily exploitable information is especially emphasised when something occurs in the process. Mipro REGO collects information from existing systems, analyses and processes it and presents in an easily exploitable format. The system enables

- better decision-making and more efficient communication,
- users to focus on problem solving, instead of on monitoring,
- faster reactions and operations in exceptional situations.

Mipro REGO is a software-as-a-service (SaaS) solution and can be used anytime, anywhere. The system is scalable to thousands of users quickly when required.



SITUATIONAL AWARENESS FOR MODERN RAILWAY OPERATIONS

Mipro REGO collects data from dozens of separate systems and presents this real-time information visually. The system gives alarms on conflicts and inconsistencies occurring between different systems. Thanks to this, users can prepare for unexpected problem situations and gain time to solve them by digging deeper into the data and finding out the reason for the conflict.

GIS AND SITUATIONAL AWARENESS

Mipro REGO is based on the Geographical Information System (GIS) which is a set of tools to visualise data on geographical maps. For railway operators, they show where each train is in real time. Furthermore, they convey all the associated information and Key Performance Indicators (KPIs) regarding a particular train, such as

- the train speed,
- the driver and conductors and their contact and shift information,
- the passenger information and their connecting journeys,
- tickets sold for this train vs how many people boarded it.

Location information can be combined with other information systems to create tools to handle the situation better.

If a train is disrupted or delayed, such information helps rail operation centres to concentrate on not only the effect on that particular service but also if there is any knock-on effect on other services. Every decision made can be analysed to understand its effect on current and future services.

Mipro REGO provides a unified view of all the separate systems in real time, thus enhancing total safety and boosting effectiveness.

AUTOMATED ALERTS AND TRIGGERS

Maintaining and displaying the status of alerts and events is a core functionality of the GIS-based Mipro REGO system. Alerts and triggers for a specific situation or location can be configured by combining the available information parameters. For example, if a train is stopped en route, an alert is triggered and a message sent to the driver to ask for the reason.

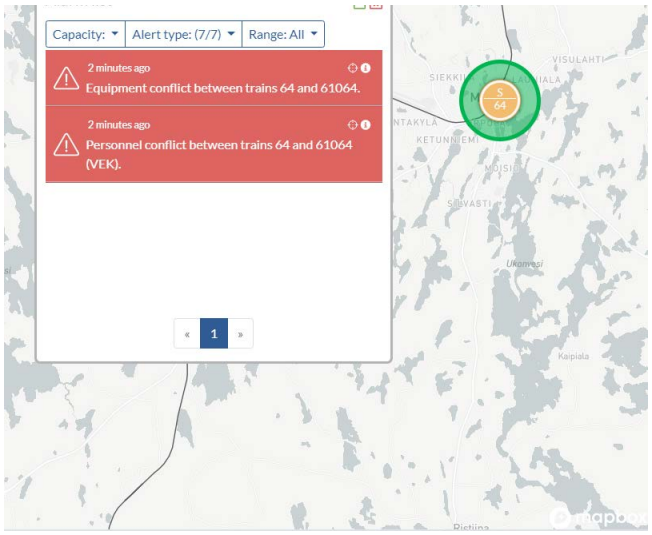
Emergency alerts associated with physical sensors can also be configured and triggered (e.g. fire alarms, video surveillance and intrusion detectors). Mipro REGO has the capability to monitor these events and can automatically activate alarms for personnel according to the role they are assigned.

ANALYTICS AND DATA INTELLIGENCE ENABLE PROACTIVE TROUBLESHOOTING

Mipro REGO is provided with automated intelligence and data analytics which allow rail operations teams to synthesize and interpret the massive amounts of data coming from real-time passenger and driver information systems, rolling stock and infrastructure monitoring systems, signalling and sensor networks, video surveillance feeds, passenger-generated inputs, records and timetables.

Rail service providers are better prepared to anticipate problems, make intelligent predictions, offer more targeted counteractions and plan optimal operating strategies when they have such data analytics and automated intelligence in place.

Centralised dashboards deliver real-time management information and metrics to provide a view of the entire operation. Performance analytics tuned to key mission-critical indicators allow operators to forecast where trouble may arise before an alarm sounds, thus enabling proactive troubleshooting.



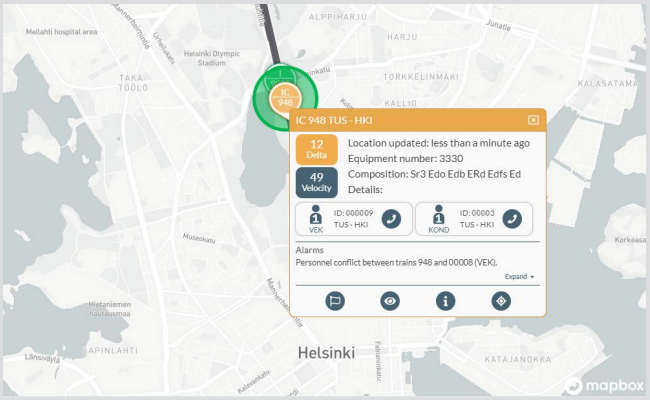
COMMON OPERATIONAL PICTURE

The Common Operational Picture (COP) is used to present information in GIS-based situational awareness systems. The COP helps accelerate the response to emergiencies by combining geolocation data with data from other systems and organisations. The COP ensures that various roles in the organisation have the correct set of information and tools available. Furthermore, it provides a common view with additional information for each role.

For example, traffic managers need to know in real time if the trains are moving in accordance with the scheduled plan and the train's relevant information such as current position, speed, any delays and detailed information on the whole journey.

Train drivers and conductors need to know exactly where they are and need to provide accurate feedback to operations centres in case of a disruption.

Infrastructure/fleet/maintenance need to know the current viability of the fleet, including fleet reliability and availability. All the relevant information about the equipment has to be readily available for analysis in case of a disruption.



PROCESS IMPROVEMENTS

The Situational Awareness system helps to improve processes in operations centres by delivering a step-by-step plan for incident handling and designating the stakeholders. These plans can be created, reviewed and approved within the system. Stakeholders can see the plan being executed, their roles in the response team, and can take actions to update the plan, all in real time. This mitigates unwanted actions during a response to an incident and helps to ensure that all regulatory actions are properly implemented. These processes can be continually improved by reviewing the actions and improving the plans.

VISIBILITY

Real time traffic situation at a glance.

AVAILABILITY

Mipro REGO runs fully in the cloud providing users with easy login anywhere.

POWERFUL

Combines information from multiple sources to one.

INSIGHT

Information combined from different data sources.

FEATURES

- Presents information on the Map View with a central hub
- Collects and combines information from existing systems such as location information, asset information, security systems, IoTs and sensors
- Analyses the collected data to visualise the current status and build future prediction models
- Allows the configuration and generation of automated alarms from the collected and processed information
- Highlights and communicates events of interest within the organisation

REFERENCES

Mipro has been working in very close collaboration with the Finnish State Railways, VR Group to deliver a GIS-based situational awareness system to their Operations Centre. VR Group's Operations Centre introduced the Mipro REGO Situational Awareness System in spring 2018. "Today the Mipro REGO Situational Awareness System is an integral part of our disruption management."

READ MORE

For information about our systems and solutions, please see the brochures:

- Mipro Railway Solutions: Interlocking System
- Mipro Railway Solutions: Traffic Management System
- Mipro Railway Solutions: Level Crossing System
- Mipro Metro Solutions : Interlocking System
- Mipro Metro Solutions : Automatic Train Supervision

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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.