Traffic Management Systems

Benefits Solutions

Traffic Management Systems (TMS) provide permanent control across the network, automatically sets routes for trains and logs train movements as well as detects and solves potential conflicts.

Benefits

Competitive Operating Costs

NetTrac solutions enable use of the effective functionality in local or regional systems up to nation-wide coverage. The TMS allows for long-term and short-term planning, includes all disposition functionalities. It can be operated in existing networks, either as an overlay or with the full integration of the route control systems in order to automate the train routing. Powerful evaluation mechanisms help to analyse the performance of the network operation in order to support optimizing and cost reduction activities.

Improving customer services

Through integration of modern interlocking technology with advanced Traffic Management Systems, you will be able to increase the throughput on your network due to intelligent conflict detection and solution functionality, supporting the operators to take effective and result-oriented decisions. In addition, the Traffic Management System will enable you to propose slots for transportation on short notice, acting at the demands of the railway operators, transporting passengers or goods. You will increase the satisfaction of your customers by reducing perturbations and increasing schedule adherence. These improvements you will achieve in parallel to a decrease in operation cost for the control staff which can be centralised and routine tasks being automated.

Solutions

Modular Central Control for Urban Rail Transit (NetTrac MT)

Thales's NetTrac MT system is the most advanced, open architecture solution available for central control of urban rail systems applying either conventional fixed block signaling or Communications-Based Train Control (CBTC) technology.

The system can be configured to support stand-alone Centralized Traffic Control (CTC) or highly integrated Control Center applications.

Key Benefits

- Meets a wide variety of transit system types and sizes
- Flexible train operation management
- Reduced operator workload
- Better automatic control and regulation using very sophisticated algorithms
- Easy to use
- High availability
- Low life cycle cost
- Commercial hardware
- Easy configuration
- Easily extended/upgraded

Train management solutions - Aramis™

Advanced Railway Management and Information System
The Traffic Management System NetTrac 6613 is the most advanced and proven system for intelligent Operation Control Centres. It controls and automates the railway traffic operation. ARAMIS automatically sets routes, supervises the infrastructure, visualizes the status of the railway network in real time, performs a comparison with the planned targets, shows KPIs, optimizes resources and calculates forecasts based on the actual data.

The need to increase the network capacity and the quality means to achieve disposition decisions that match the requirements of fast reaction time, punctuality, competent information, user friendly interfaces and efficient usage of resources.

ARAMIS' integrated, modular, freely scalable architecture facilitates to maintain, extend and run the system very cost-efficient over the LCC.

Key Benefits

- Increase passenger & freight capacity

- Increase punctuality and quality of service
- Reduction of operational expenses
- Fully integrated, powerful client-server solution
- All-inclusive features for management of traffic
- Mixture of legacy and new infrastructure is supported
- Implemented features are proven in real operation
- State-of-the-art technology
- Seamless interworking with interlocking, ETCS and peripheral systems

Flexible and highly automated operation

- Integrated system proven for whole network with more than 40,000 trains per day
- Efficient forecasting, simulation, conflict detection and resolution
- Optimized resource usage, providing ecologically valuable transport mode
- Flexible, efficient management of deviations, perturbations and incidents
- Decision Support System and KPIs for optimizing your network
- Data secured with Client-specific data access for different train operators

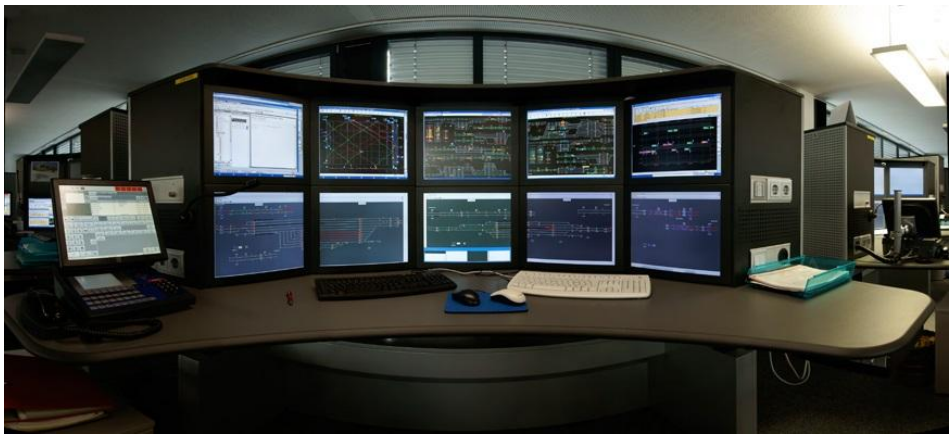
NetTrac 6612 OMC

The Operation Management Centre (OMC), developed following CENELEC standards, provides safe centralized remote control and operation of interlockings as a basis for integrative operation management. NetTrac 6612 OMC is based on a modular system architecture with a strict separation of vital and non-vital functions. This approach makes it easier to validate the system in the course of obtaining regulatory approval and also means the system can be efficiently upgraded and extended.

The NetTrac 6612 OMC provides highest availability and requires minimal maintenance. If updates become necessary (e.g. exchange of redundancies), the OMC offers interactive support so on-site personnel can successfully complete the work. Furthermore all diagnostic data is continuously evaluated and the system's "health status" is displayed in real time and in periodic reporting.

Key Benefits

- Increase productivity through centralization with highest degree of automation with maximum operational safety
- Fully integrated process from tabling,dispatching up to route setting
- Modular and scalable system design
- Control areas can be linked flexibly to workstations
- Intelligent maintenance maximises network availability
- Online operational and technical performance monitoring for optimal availability and safety



NetTrac 6614 Automatic Train Routing System (ZL L2000)

NetTrac 6614 (ZL L2000) is an Automatic Route Setting (ARS) that automates the operation and discharges signalmen and dispatchers from routine work.

Together with the Train Describer System (TDS) it is overlaid to local interlocking systems or to remote control systems for Centralized Traffic Control (CTC) and assumes the automatic train setting of routes

Key Benefits

- Automation of operation
- Increase of punctuality
- Route setting just in time
- Discharging of operators from routine work
- Integrated HMI
- Train routing plans can be downloaded from a control and supervisory centre or edited manually
- NetTrac 6614 fulfills the requirements of DB AG
- Easy adaptation for different railway operators thanks to the modular design

NetTrac 6614 ZL L2000

NetTrac 6614 ZL L2000 is an Automatic Route Setting (ARS) that automates the operation and discharges signalmen and dispatchers from routine work. Together with the Train Describer System (TDS) NetTrac 6614 ZN L2000 it is overlaid to local interlocking systems or to remote control systems for Centralised Traffic Control (CTC) centres and assumes the automatic train setting of routes

Key Benefits

- Automation of operation
- Increase of punctuality
- Route setting just in time
- ERTMS/ETCS compatible
- Discharging of operators from routine work
- Integrated HMI on the basis of window technique
- Train routing plans can be downloaded from a control and supervisory centre or edited manually
- Easy adaptation for different railway operators thanks to the modular design
- Deadlock inhibition

NetTrac 6614 ZL L2000 is an Automatic Route Setting (ARS) that automates the operation and discharges signalmen and dispatchers from routine work. Together with the Train Describer System (TDS) NetTrac 6614 ZN L2000 it is overlaid to local interlocking systems or to remote control systems for Centralised Traffic Control (CTC) centres and assumes the automatic train setting of routes

Key Benefits

- Automation of operation
- Increase of punctuality
- Route setting just in time
- ERTMS/ETCS compatible
- Discharging of operators from routine work
- Integrated HMI on the basis of window technique
- Train routing plans can be downloaded from a control and supervisory centre or edited manually
- Easy adaptation for different railway operators thanks to the modular design
- Deadlock inhibition

NetTrac 6616 Train Describer System (ZN L2000 and ZNE L2000)

NetTrac 6616 Train Describer System solutions are computerized Train Describer Systems (TDS) for electronic and relay interlocking. Both are non-vital systems performing automatic train tracking supporting centralized and decentralized information exchange.

Train Describer Systems can be overlaid to conventional relay interlocking or to electronic interlocking systems. Train tracking is done on the basis of signal status, switch position and track occupation reports received via the interlocking interface. Train describers, which at German Railways Deutsche Bahn AG (DB AG) consist of 6 characters maximal, are displayed on color monitors showing geographical representations. In other countries train describers can contain characters as well.

Key Benefit

- Compatible with Traffic Management System ARAMIS

Actual indication of train positions in a geographical representation

- Easy input of data via mouse and keyboard (window technique)
- Automatic logging of train movements
- Substitution of telephone calls between operators
- Interfacing with different types of interlocking systems
- Compatibility with different TDS (also from other suppliers)
- Modular system design permits adaptations for different railway operators

NetTrac 6617 CTC 1000

NetTrac 6617 CTC 1000 meets the continuous demand for better railway traffic management technology. Such demands are due to ever increasing passenger numbers and the need to improve quality of services and to optimise operation. This has resulted in the need to automate the systems supporting the control and regulation of the railway traffic, with the aim to:

- Increase the traffic capacity of the railway network
- Improve the traffic regularity, thus reducing the risk of delay in service
- Rationalise the railway operation

Key Benefits

- Flexibility in the organisation of the operating places
- Easy operation
- High availability
- Enhanced maintenance diagnosis
- Ability for connection to external systems
- Flexible and expandable architecture

NetTrac 6653 Command 900

Many of the world's railways have relay interlocking systems in operation and there is still much life left in this equipment. As new interlocking systems are computerised, the operator has a challenge to standardise the different Human-Machine Interfaces (HMI) of relay interlocking systems, normally controlled from a mosaic-type control desk, and electronic interlocking systems with inherent monitors and mouse control.

NetTrac 6653 Command 900 provides the capability to operate relay interlocking stations together with electronic interlocking systems on the same monitor and mouse of a centrally located workplace.

As is required by several operators, a vital display can be provided. This implies the possibility of picking up vital information from the screen at any time. A special "refresh" or "check" command is not needed. Generally two kinds of vital view are offered:

- Area overview
- Local focus view

Separate monitors for non-vital applications provide full MS Windows capabilities; for all vital and non-vital applications one common mouse is used.

Key Benefits

- Minimised staff expenses by controlling several interlocking stations from a CTC centre
- Common HMI for different types of relay and electronic interlocking systems
- Permanent vital display
- Each vital application window can be displayed on each vital workstation monitor
- Non-vital applications provide full MS Windows capabilities
- Vital and non-vital TFT displays are controlled via one mouse
- No limitation regarding the number of operator workstations
- Crosswise access from different control centres to all sub-stations possible

- Fully redundant computer configuration in the control centre with automatic switch-over capability

NetTrack 6654 F L90

Many of the world's railways have relay interlocking systems in operation and there is still much life left in this equipment. As new interlocking systems are computerised, the operator has a challenge to standardise the operationally different relay interlocking systems, normally controlled from a mosaic-type control desk, and electronic interlocking systems with inherent monitors and mouse control.

NetTrac 6654 F L90 provides the capability to integrate the operation of relay interlocking stations into the Human-Machine Interface (HMI) of the electronic interlocking system LockTrac 6111 ESTW L90. It fulfils the requirements issued from German Railways Deutsche Bahn AG (DB AG) and complies with the DB AG concept to operate complete districts from a Railway Traffic Management Centre (RTMC). This implies operating relay interlocking systems from a workstation in the RTMC with vital overview, detailed display and mouse control inputs.

Key Benefits

- Integration of existing relay interlocking systems with the HMI of the LockTrac 6111 ESTW L90 electronic interlocking system
- Supports different types of relay interlocking system from diverse manufacturers
- Connection of up to 8 NetTrac 6654 F L90 sub-stations to the input/output module of the LockTrac 6111 ESTW L90
- No additional hardware for the operator place is needed if a LockTrac 6111 ESTW L90 exists in the neighbourhood and the area of the relay interlocking systems fits with the existing monitors
- Flexible integration into the operating area of a Railway Traffic Management Centre
- Good return on investment as no personnel has to remain at the relay interlocking locations
- Minimum service interruptions when the system is put into operation

NetTrac 6655 SOC/VCC

NetTrac 6655 SOC/VCC is a compact, modern, mouse-operable Human-Machine Interface (HMI) system based on standard industrial personal computer (PC) hardware. It offers a country-adaptable standardised visualisation interface.

NetTrac 6655 SOC/VCC is used in Central Traffic Control (CTC) Centres and for operating local interlocking systems. Depending on the size of the area to be controlled, several operator workstations can be installed and staffed as required for the given workload. External display devices (e.g. beamers, panels) as well as automatic train routing facilities and other services can be connected.

Key Benefits

- Mouse-oriented safe and comfortable operation of local or remote-controlled interlocking systems (CTC)
- Operation of different interlocking systems integrated in the same operator place possible
- Equivalent operation handling in CTC and in local station
- Intelligent software for easy and safe operation
- Safe operation permission handling between local-controlled interlocking systems and CTC
- Interface to automatic train routing system available
- Interface to other visualisation equipment (beamer, LED panel) available
- Compact and easily scalable hardware equipment
- All information (e.g. states, diagnosis, etc.) is displayed in harmonised pictures