Controlguide OCS
Intelligent operations control systems from Siemens
Increasing challenges
One of the greatest tasks of our times is to ensure cost-effective, sustainable mobility and, at the same time, to provide attractive offers for passengers. You as rail operator are being faced with major challenges:

- increase line capacity without additional infrastructure
- improve the quality and attractiveness of the offered transport services
- optimize the usage of all resources
- minimize energy consumption
- optimize life-cycle costs
- secure long-term investments

As operator of rail transport systems, you need to meet the ever-increasing need for transportation and the growing process of urbanization. Passengers are becoming more and more demanding in what they require. Today, they expect safety and punctuality as well as traveling comfort and environmental awareness.

On the other hand, restricted resources and investment funds are available. You have to deploy these resources and funds efficiently so as to operate with economic success.

**Controlguide OCS** is the new family name of Siemens’ operations control system solutions including the solutions which are already successfully established on the market, e.g. Vicos, Iltis, and Rail 9000.

Controlguide OCS is the leading brand for operations control technology for mass transit and mainline rail applications as well as freight, industrial and mine railways.

Controlguide OCS is a state-of-the-art platform which, due to its modularity and scalability, offers high-level flexibility in application.

The functions to be implemented can be individually expanded or adjusted, depending on the customer’s needs. Furthermore, individual functional upgrades and extensions can be performed in further steps. In this way, existing investments are secured and required expansions can be made based on actual needs.

In addition to the control of day-to-day operations, Controlguide OCS offers high-performance automation functions and intelligent dispatching functions to optimize operating sequences for efficient and cost-effective rail services.

Controlguide OCS is the intelligent response to your challenges.

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Controlguide OCS

The simple formula for your success

1. Your operations automated!
2. Your infrastructure usage optimized!
3. Your investment secured!
Controlguide OCS provides functions for all levels of rail traffic control and operations management. Thus, it offers you special support in the efficient handling of rail transport.

**Fully integrated control of operations**
Controlguide OCS enables you to plan and carry out your operations. In the event of deviations in planned operating sequences, Controlguide OCS enables you to use intelligent dispatching functions to minimize any resulting disruptions. Thanks to an intuitive user interface, you can intervene in day-to-day operations, both effectively and efficiently, particularly in difficult situations.

**Centralized monitoring**
Different types of interlocking systems and train control systems can be monitored and controlled by Controlguide OCS. These functions can be centralized for even more effective operations management for individual lines or regions or even for complete networks.

**Automation on demand**
With its high-performance automation functions, Controlguide OCS offers ideal conditions for centralizing operations management. Your staff will be relieved of routine work and can fully concentrate on ensuring smooth traffic flows.

Whatever is required of your systems’ performance and functionality, Controlguide OCS supports different solutions through to fully automatic unattended train operation (UTO) with extended automation functions for handling emergency situations.

**Intelligent dispatching functions**
With the increasing complexity and centralization of operations management, deviations during operations may entail considerable consequences. That is why Controlguide OCS provides you with intelligent dispatching functions. Even in exceptional situations, these functions will guarantee a high level of performance and reliability in rail services.
Already today, Controlguide OCS provides you with tomorrow’s operations control technology. Controlguide OCS helps you cope with the growing complexity of centralized systems at any time. It allows you to detect any disruptions in operations at an early point in time and, thanks to its intelligent functions, to intervene in the course of operations. This minimizes any unfavorable operational impact.

Since our solutions can be adjusted to your changed tasks and the requirements for your system, you can focus your investments on your needs, equipping you today for tomorrow’s demands.

### Your benefits at a glance:

- Increased performance through optimized usage of existing resources and capacities as well as high-performance automation functions
- Guaranteed high-level operative availability, even in exceptional situations, due to intelligent dispatching functions
- Improved quality and customer satisfaction through optimum support in handling deviations during planned operations
- Lower implementation and life-cycle costs thanks to the product platform as a basis for customer-specific adjustments
- Flexible organization through adjustable allocation of monitoring areas and functions to workplaces and handling of different tasks by mobile equipment, irrespective of the actual location
- High-level usability due to the user-friendly HMI and intuitive operations control workflows
- Expandability and increased performance as required; low-risk integrability into an existing infrastructure due to the modular and scalable system architecture with open interfaces
- Support of safety-critical commands through procedure-protected control and display

More than 150 projects worldwide

More than 30 years of experience
Controlguide OCS

Optimum support for cost-effective operations management

Controlguide OCS focuses on your needs
Controlguide OCS provides you with all the necessary resources and information you need for efficient, cost-effective operations management. They can be individually adjusted to your needs.

Controlguide OCS helps you keep track of the rail traffic situation
Die Bedienoberfläche und die Betriebsabläufe sind konsequent an den Arbeitsaufgaben und -zielen der verschiedenen Nutzer ausgerichtet. Das durchgängige Interaktionskonzept sorgt für eine intuitive und effiziente Bedienung.

Controlguide OCS enables you to have Rail operations under control – also in difficult circumstances
High-performance automation and dispatching functions are available to provide you with optimum support even when handling deviations in planned operating sequences.

The Maintainer performs the necessary maintenance and repair work at rail installations and equipment.

The Dispatcher coordinates train operations on a look-ahead basis and in the case of any sudden incidents.

The Security Manager is responsible for ensuring security in rail operations.

The Supervisor is responsible for dispatching in the case of incidents with cross-regional effects.

Weltweit führend
Effiziente Lösungen zur Automatisierung und Optimierung des Schienenverkehrs
Optimum support for cost-effective operations management
Controlguide OCS enables you to flexibly structure your work organization
Monitoring areas and functions can be allocated to the different workplaces in line with your needs. The use of mobile equipment allows different tasks to be handled irrespective of the location.

Controlguide OCS allows you to expand your existing infrastructure
Existing rail-specific systems and applications can be integrated into Controlguide OCS both cost-effectively and with a low level of risk. In this way, you can structure and optimize your operating sequences holistically.

Controlguide OCS grows in step with your requirements
You can respond to the needs for short-term action by means of selective investments. In addition, you can implement long-term strategies for full optimization of your operations management processes.

The Signal Operator is responsible for safe, on-time train running.

The Information Manager ensures that passengers are immediately notified in the event of any irregularities.

The Supervisor is responsible for dispatching in the case of incidents with cross-regional effects.

The Maintenance Manager coordinates and monitors all necessary maintenance and repair work.
Control and display
All information about current operations is displayed by Controlguide OCS in real time. Different types of interlockings and train control systems, such as ETCS Level 2, can thus be operated and monitored individually on site or centrally for lines and regions or even for entire networks.

Controlguide OCS also offers support in maintaining availability in the event of technical faults in the infrastructure. If the operating rules implemented in the signaling and safety system provide for the bypassing of technical faults, the vital control and display feature of Controlguide OCS ensures maximum safety even in the case of the safety-critical operator actions.

Timetable management
Seasonal timetables set up during timetable construction are used to derive production timetables for operations. These production timetables are then adjusted to actual day-to-day operations.

Controlguide OCS can be used to manage and modify these production timetables as with special or emergency timetables for exceptional situations. The subsystems are supplied with up-to-the-minute timetable data during runtime.
**Automatic train tracking**
The tracking of individual trains with their train numbers within the network and the provision of information for train location are prerequisites for centrally operating large-sized rail traffic areas.

At all times, Controlguide OCS offers an overview of the current train locations. To do so, it uses the status changes of interlocking elements, such as clear and occupied indications from track vacancy detection equipment, stop and proceed aspects of signals, and point positions. Of course, Controlguide OCS can also use information from other systems (e.g. position indications of state-of-the-art train control systems) for train tracking.

**Automatic route setting**
Automatic route setting requests to the interlocking systems relieve the signalman of standard operator actions. Commands are issued on time, as late as possible to prevent tracks or points from being unnecessarily blocked and as early as necessary so that unnecessary decelerations or stops are prevented.

Controlguide OCS supports various route setting strategies. It is based on either trip destinations or lines by establishing the route by means of the train number’s destination code or the timetable with full evaluation of the train number.

**Timetable deviations**
Controlguide OCS determines timetable deviations resulting from current operations and indicates them, e.g. as delay minutes or time/distance diagrams. This means that, together with the current train locations, the relevant information is available for manual dispatching.

**Restrictions handling**
In the event of any scheduled operational restrictions, local staff can use mobile terminals to request and release track possessions and speed restriction sections.

Controlguide OCS ensures that track possessions can only be activated when staff are on site and only released when the maintenance team has safely vacated the location. Controlguide OCS prevents any confusion in setting up and releasing track possessions by correspondence checking of the planned and actual locations.

All measures help to minimize necessary track possession times and provide maximum work safety.
Dispatching

Rapid elimination of disruptions in scheduled operations

Train forecast
On the basis of current train locations and the original planning specifications, Controlguide OCS uses driving dynamics parameters, topographical line data and timetable data to make reliable train forecasts.

Conflict detection
Controlguide OCS detects conflicts in operating sequences which evolve from current and forecast operations. These conflicts can, for example, be depicted in a time/distance diagram so that the dispatcher is notified about any necessary action on time.

Conflict resolution
Controlguide OCS calculates suitable solutions for the detected conflicts in order to exclude or minimize the resulting disruptions, particularly due to forecast following conflicts. The objective is to restore planned operation as fast as possible.

Rule-based conflict resolution
Solutions for conflicts expected during operations are established in line with specified rules and strategies which have been defined in advance and then offered for execution.

Controlguide OCS enables continuous improvement of rule-based conflict resolution by adjusting the rules on the basis of the customer's own operational experience. Changing operating sequences can be mapped by new or adjusted rules. Integrated effectiveness monitoring indicates necessary action in the revision of rules.

Optimization-based conflict resolution
Optimization-based conflict resolution is applied particularly in extensive, complex networks with different train priorities and highly interlinked train services. An optimum conflict-specific solution is calculated in line with individually defined key performance indicators.

Automatic train regulation
Automatic train regulation adjusts running times and dwell times or speed profiles in order to compensate any deviations from the timetable both fast and effectively. Controlguide OCS implements headways relating to stations and directions of travel and line-specific sequence controls for optimum operating sequences without manual intervention.
As an open, user-friendly system, Controlguide OCS offers you numerous benefits beyond its directly application-related functions. It thus becomes a future-oriented investment in the efficiency and optimization of your rail operations. Since customer-specific adjustments are based on a broad product platform, you can also expect lower implementation and life-cycle costs.

Modularity and scalability
The modular Controlguide OCS concept is geared to providing you with a flexible, individual solution for your rail operations. You can use available modules to combine features that exactly correspond to your needs. The open system architecture makes the solution scalable on both the software and hardware levels and can be easily adapted to growing demands. In this way, its performance and functionality can be adjusted to your needs even years after the solution has been commissioned.

Integrability and migratability
Due to open interfaces, future applications can be integrated into your existing infrastructure both cost-effectively and with a low level of risk. You are independent of any concrete platform and can individually expand your solution as and when required. Other rail-specific applications can be easily integrated into Controlguide OCS as data can be provided for further processing and evaluation for external systems.

Availability and performance
Controlguide OCS convinces users through its availability and performance. For example, due to its technically sophisticated redundancy concepts, the system is highly available and notifies you about any disruptions fully automatically. In addition, the use of standard hardware enables usage of the full performance of future computer generations in the implementation of increasing needs for operations control systems.

Usability
Its user-friendly, consistently integrated user interface and optimum workflows ensure that your staff can work intuitively with Controlguide OCS. Even in difficult operating situations, this enables them to act calmly and effectively in handling their tasks.
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The information in this document contains general descriptions of the technical options available. The required features should therefore be specified in each individual case at the time of closing the contract. For the secure operation of Siemens products and solutions, it is necessary to take suitable preventive action and integrate each component into a holistic, state-of-the-art security concept. Third-party products that may be in use should also be considered.