Rail automation solutions for mainline and regional railways

Your reliable partner during the entire life cycle
Efficient, sustainable and future-oriented railways

With the world market leader in rail automation

The challenges of the world’s growing population and the process of urbanization, also in terms of climate change and the consumption of resources, are becoming increasingly larger and more complex. This also imposes increased requirements on railways. Transport and infrastructure operators have to cope with rapidly growing traffic flows and passengers’ rising expectations. Their success is measured against factors such as safety, environmental friendliness and sustainable cost-effectiveness.

Siemens’ intelligent and future-oriented mainline rail concepts support operators in successfully meeting these challenges. We regard our customers as partners who we support through our work in sustainably developing their environment and making their rail infrastructure efficient and effective in both national and international context. That is why we create the basis for efficient mobility without borders and thus for the further economic development of both regions and countries.

For an environment worth living in Siemens has set itself the task of offering efficient mobility solutions. Through our optimum use of resources, attractive, safe and environmentally friendly rail solutions will evolve.

Our rail automation portfolio includes intelligent signaling and control systems which increase line capacity, improve punctuality and reduce energy consumption.

More passengers and freight within a shorter time

Increasing numbers of people are using high-speed, mainline and regional trains to move from A to B fast. With our Trackguard interlockings, Trainguard train control systems and Controlguide operations control systems, we offer you solutions which meet continuously rising passenger levels and can be flexibly adapted to increasing requirements. Implementation takes place without perceptibly disrupting operations.

Our solutions boost the capacity, reliability and safety of your lines in highly automated operation. This enables growing freight and passenger volumes to be handled in future.
Efficient solutions
With the latest know-how and state-of-the-art technology

As pioneer in rail engineering with more than 160 years of experience, Siemens repeatedly comes up with innovations. From the development of the first electromechanical interlocking in 1894 through to the interoperable European Train Control System (ETCS) – products and systems from Siemens determine rail history and have again and again proved themselves as a major success factor for rail operators. The result is futureproof innovations for our customers’ competitive advantage.

Market leader for rail automation
As a company with long-standing expertise in the field of high-speed, mainline and regional railways, we are at all times capable of understanding and reliably meeting our customers’ needs. Our international experts precisely know the requirements of our customers and are available to you on site when it comes to finding solutions for your tasks. Our full-scale portfolio is complete and enables us to take up any challenge anywhere throughout the world.

As market leader, we stand for both quality and adherence to deadlines. Siemens offers you modular, scalable and futureproof systems which can grow in step with your requirements. However, we also ensure compatibility with other manufacturers’ products, interoperability, investment security and the upgrading of existing systems. Depending on your requirements, we provide individual products or integrated-package solutions which boost the availability and durability of your public transport systems. Our global network contributes by ensuring that we comply with our obligations for maintenance, repair or subsequent delivery.

Modernization without adverse impact
Today, disruptions or lengthy interruptions in public transport due to modernization work are generally unacceptable. That is why Siemens’ solutions are modular and scalable so that they can be modified or expanded step by step without affecting ongoing operations.

Our services range from specifications and project management through to implementation, approval and maintenance, ensuring maximum availability and cost-effectiveness.

Our service and diagnostics concept provides you with the level of certainty that all systems always function reliably. Possible faults are immediately detected and remedied, and we also minimize your downtimes for maintenance and repair work.

Our competence and experience which we have gained in numerous rail automation projects as a responsible, competent, reliable partner make us specialists for the migration of modernization solutions into existing transport systems.
Technology for capacity, speed and comfort

Monitoring, control and optimization

Operations control systems
Using our Controlguide systems, you can monitor your train control systems and your electronic and relay interlockings and automate a large number of functions. We offer solutions from standalone operator consoles through to large-sized control centers.

Electronic interlockings
Trackguard electronic interlockings control rail traffic and set signals and points. We supply electronic interlockings turnkey as preconfigured container solutions which have been tested at our Test Center. This enables short commissioning periods and maximum availability from the very first day.

Trainguard for ETCS
For unrestricted technical and operational interoperability across national borders and cost-optimized solutions for migration (e.g. Level 1 Limited Supervision).

Trainguard OBU
As the smallest on-board unit on the market, it provides for fast, reliable retrofitting and forms the basis for Baseline 3 and a bi-standard solution.

Trainguard ATO
For the optimum usage of line capacity and safe, energy-efficient driving ETCS also provides Automatic Train Operation.
Automatic train control systems
Our Trainguard systems are scalable and offer different levels of automation for train control. In conventional train operations, they support the driver with numerous safety-related functions or perform complete control and monitoring in highly automated operations. Our portfolio ranges from products for conventional operation through to the interoperable solution for the standard European Train Control System (ETCS).

Products
Siemens supplies all products which are required for rail systems – from point operating systems through to state-of-the-art LED signals, all from a single source. We attach maximum importance to the quality of our products and services in order to provide you with functionally correct, highly available and simple-to-maintain solutions.
Performance guaranteed

Complete portfolio and competence

From planning through to service, Siemens provides you with the entire range of services from a single source. Worldwide, we are not only present for you on site with the competence of a globally operating company but also familiar with the regional special features of rail transport systems.

Our services range from the integration of new products into existing infrastructures through to the installation of completely new rail solutions. We are your reliable partner in all process phases. Whether it is a question of resource planning or professional project management, we closely work together with our customers.

The undisputed quality of our products forms the basis for individual systems which precisely reflect your needs and can grow in step with your requirements. If requested, we act as your general contractor and ensure the turnkey completion of your projects. Alternatively, we cooperate, of course, with other contractors.

Before a system is commissioned, we test it at our Mainline Test Center. We also make our Test Center available to you for your own test series. We offer you seminars for your staff’s training at our Rail Automation Academy. Simply profit from the experience and competence which have developed over many years and which our experts have gained from numerous projects around the globe.
A fundamental rule in rail automation states that safety must be ensured at all times and at all places. Siemens is convinced that safety can only ever apply if the quality of products, systems and services comes first.

Precedence to safety
As our customers’ partner, we are aware of our great responsibility for the safety of their passengers and freight. We have independent safety and quality audits regularly performed in order to maintain the high standard of our products on an international level. In this way, we can offer you solutions which combine uncompromising safety with cost-effectiveness, ease of maintenance and reliability.

Siemens is certified according to the following quality and safety standards:

- ISO 9001:2008
- ISO 14001:2004
- BS OHSAS 18001:2007
- IRIS:2009
- CMMI L3:2014
- CENELEC

Quality is the key
Public mainline rail services require the safety and availability of all associated systems at all times. Siemens complies with this requirement from the very beginning by providing full-scale reliable product quality. As we see it, service during the entire product life cycle is an essential element of this approach.
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.