

The Siemens logo is displayed in a white rectangular box in the top right corner of the page. The background of the entire page is a blurred image of a modern train station with a large, curved glass and steel structure. Overlaid on this background are several layers of digital graphics: a complex network of glowing blue and yellow lines representing a control system or data flow; a horizontal stream of binary code (0s and 1s) in white and blue; and several glowing padlock icons, some of which are open, symbolizing security and access control.

SIEMENS

Controlguide® Itis N

Highly reliable and future-proof
Operations Control System

[siemens.ch/mobility](https://www.siemens.ch/mobility)



Worldwide first safety-relevant railway solution offered as a service (Iltis as a Service at Gornergrat Bahn)



Our customers are in Switzerland (SBB, BLS, MGB, Rhb, SOB, zB, amongst others), Austria (ÖBB), Slovakia (ŽSR), Hungary (MÁV), Slovenia (SŽ) and Malaysia (KTMB, ERL)



Profound experience and continuous innovation

Iltis N covers the entire range of operator control: From local/central operation of individual interlockings to the entire automation of a nationwide rail network.

The increasing urban population and the associated demand for appropriate mobility are some of the important challenges that rail operators are faced with nowadays. Controlguide Iltis N provides a solution that maximises the efficiency of the existing infrastructure. This is achieved by guaranteeing the highest availability and reliability through a redundant and fail-safe system architecture. Iltis N is highly scalable with regards to network complexity – from nationwide installations to “as a Service” solutions for small private railway companies. This Siemens Operations Control System has stood the test of time in one of the densest railway networks in the world (SBB/Switzerland) due to its continuous development as well as our strong partnership with our customers.

Highest level of automation

Operation according to the timetable is 100% automatable

With Iltis N, railway operation is running almost entirely automatically. Routes are set in an automatic manner based on timetable data and train describer information. Iltis N easily handles the relationships between trains such as transfer connections, sequences and prioritisations automatically.

This enables the operator to focus on situations where interventions are needed. As an example, operators can set route macros to automate bypasses when technical disturbances occur.

Flexible and scalable system

Iltis N's architecture enables a flexible and scalable system that is seamless in operation

An IP-network (WAN) connects all the components of Iltis N. Cell-servers comprise all functionality related to rail operation and provide for the control of interlockings and Radio Block Centres (RBC). Workstations are connected to cell-servers in a Client/Server manner. This means flexible access to all interlockings from every workstation.

The decentralised architecture provides the operator with a system without boundaries that is easy to operate.

High level of ergonomics for users

A highly customisable user interface of workstations maximises the efficiency of train operation. Detail view images of stations and areas are customisable to the operators' needs. Iltis N displays stations in a unified way, regardless of the underlying technology.



Iltis Web Services: Iltis N in the digital age

*1,000,000 passengers
10,000 trains
650 stations*

*All operated from just
one system: Iltis N*

Interoperability is key

Iltis N can interface with a multitude of external third party systems – be it interlockings, Radio Block Centres or further neighbouring systems – comprising a wide range of technology and manufacturers

Iltis N can interface with electronic and relay interlockings from Siemens and other suppliers. It also interfaces with Siemens and Thales Radio Block Centres (RBC). This enables integration into an installed base in a straightforward manner.

Furthermore, other external third party subsystems, such as Online Planning Systems, are interfaced through a secure gateway, which provides for the separation of the network and adjacent systems.

Iltis N in the digital age

We drive innovative digital solutions to create added value for our customers

Iltis N has established itself as a high quality product over the years. This is mainly due to our capability of identifying customer needs and our commitment to foster innovation for our customers. Iltis N has been further developed in order to leverage digitalisation, creating added-value for our customers in the digital age.

Iltis Web Services

With Iltis Web Services, the customer is able to have an overview of the operating situation on any web-compatible terminal device (smartphone, tablet etc.). Detail view images and logging data can be accessed locally independently at all times to reproduce past and real-time events.

Iltis as a Service (ILaaS)

Iltis as a Service (ILaaS) allows the rail operator to obtain Iltis N functionality in the form of a flexible service. Siemens keeps the control technology up to date and takes care of the server hardware and all software releases by hosting the servers on Siemens premises. This also involves compliance with the applicable IT security standards (i.e. IT security patching). ILaaS, therefore, ensures optimised obsolescence management and maintenance conditions.

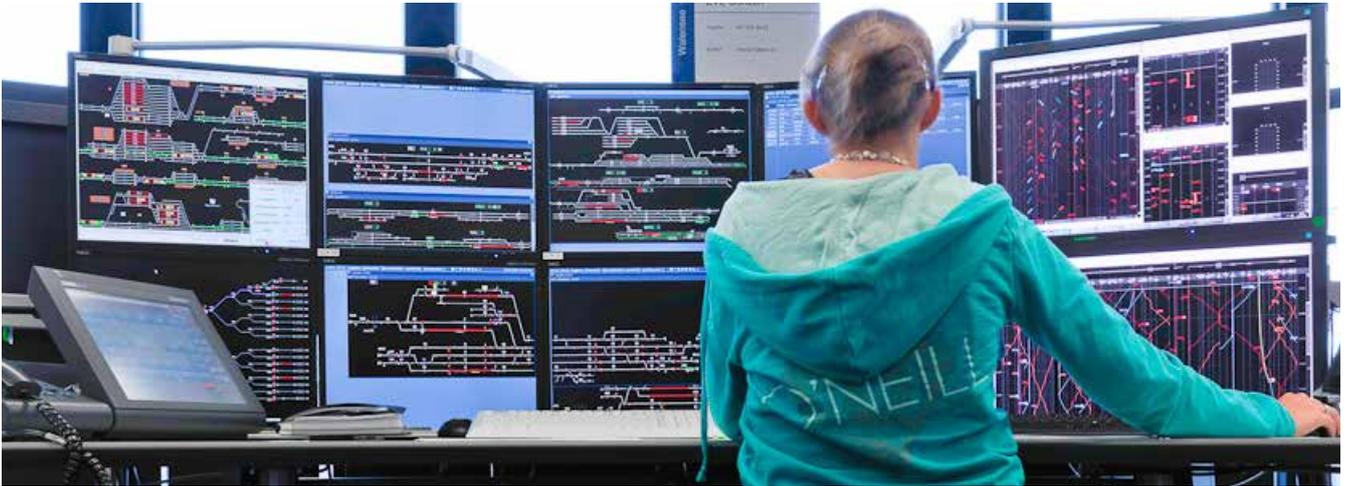
Both services described above have been deployed starting in 2016 and have been commissioned by multiple customers since.

Hardware Virtualisation

Virtualisation serves as a means to loosen the linkage of the life cycle between the operating system and hardware. This enables simpler software migrations and optimised Obsolescence Management. Virtualisation also helps to reduce hardware and maintenance costs. This allows for hardware-consolidated data centres, be it on Siemens (Software as a Service) or company premises (company data centre).

Iltis Geo-redundancy

Iltis N provides the customer with a smart solution for geo-redundancy. It enables the geographical split of the inner system redundancy. Both half-systems are autonomous and synchronised at all times. This ensures disaster protection with minimal additional hardware expenditure.



Iltis N operation centre

Optimised Obsolescence Management

Innovative solutions in the light of fast life cycles of electronic equipment

All hardware components used in Iltis N are Commercial off the Shelf (COTS) products. They have been tested and approved 'fit for purpose'. This way, Siemens can cost effectively replace any obsolete components.

With Iltis N, we provide a durable solution for the short life cycles of COTS electronic equipment. New hardware components can be introduced via a streamlined approval process (approved by Federal Office for Transport in Switzerland) thereby avoiding high approval costs.

Iltis N outlook

Today, we are solving our customers' challenges of tomorrow

Controlguide Iltis TMS

Current work-streams include, amongst others, the combination of Iltis N and an Online Planning System into an integrated Traffic Management System (TMS). A TMS unifies the functionality of operational automation (Operation & Control System) with the capability of ensuring a conflict-free timetable at all times (Online Planning System).

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Interconnectivity

Steady improvement of interconnectivity is an essential goal regarding Iltis N in order to increase versatility and user experience even further. This comprises the multiplication of interfaces to different interlockings and Radio Block Centre systems.

Modularisation of Architecture

The split between safety (SIL2) and non safety-relevant (SIL0) functions and further encapsulation of SIL2 functions is an important work-stream that will enable a leaner process for modifications in functionality.

Predictive Maintenance

Another key vision is to provide our customers with smart data by processing the information within the system. This data enable the user to anticipate incidents through identification of trends and deviations and, therefore, ensures the maximum availability of the whole railway network.

Benefits of Iltis N

Investment protection: Highly proven and future-proof Operations Control System

Customer convenience: From local/central operation of individual interlockings to the entire automation of a nationwide rail network

Optimal assignment of resources: Highest level of automation allows the operation to focus on non-routine tasks

Lean Interoperability: Interface with a multitude of external third party systems available

Fit for the future: Iltis N is at the forefront of digitalisation with its digital portfolio and creates added value for our customers