



CUSTOMER SUCCESS STORY



Telecommunications Network and Cable Infrastructure in a Single System

Greater transparency, efficiency, and speed –
SBB is boosting its cable network management with FNT

Swiss rail company Schweizerische Bundesbahnen AG (SBB) is proof that tradition and state-of-the-art technology can go hand in hand, as evidenced by their cutting-edge railway infrastructure that includes a telecommunications network. This network provides end-to-end data exchange between all entities, components, and objects required for technical operations. When their existing cable management system reached its end of life, SBB searched for a new solution. An important requirement was that this solution could be integrated into the existing OSS environment and linked to surrounding systems via interfaces. FNT delivered on all these requirements, and then some.

Not only does FNT's robust cable management software have all the functionality needed for efficient management of the cable infrastructure, FNT has a team of experts to ensure a smooth implementation. This includes migrating data from the old system into the FNT Command Platform and includes updating and maintenance, and support over the course of the eight-year contract life. SBB is reaping multiple benefits. They now have transparency into both its telecommunications network and underlying cable infrastructure, which are managed together in FNT Command to simplify and increase the efficiency of planning their operation and maintenance processes.



Transportation

Industry



33,900

Employees



> 400,000 km

Fiber and copper cable



Founded in 1902, SBB enjoys an outstanding reputation as a modern transportation and service company. SBB carries 880,000 passengers and 185,000 metric tons of freight safely to their destinations each day and employs 33,900 people. It has operating divisions for passenger services, real estate, infrastructure, and freight. The company also moves with the times: it adapts dynamically to new passenger mobility behavior and offers a flexible rail system with high levels of efficiency and sustainability.

A key success factor is the company's strong, robust rail infrastructure. The SBB Infrastructure division's responsibilities include provision of the relevant rail, energy, and telecommunications networks. The latter consists of 9,500 kilometers of fiber-optic cabling with a total of around 400,000 kilometers of optical fibers, some 4,500 kilometers of copper cables, and approximately 30,000 distribution points – a solid basis for supporting SBB's proprietary data network.

SBB. Connecting Switzerland

SBB is the backbone of the Swiss public transport system. It has been transporting people and freight for more than 100 years, bringing millions of people together and providing them with goods. It connects people and places, rural regions, cities, and cantons (states of the Swiss Confederation). SBB is a reliable partner to the Swiss Confederation, cantons, communities, and suppliers.

At its heart is the integrated railway with the divisions passenger services, real estate, freight, and infrastructure. This core business serves their customers. The rail infrastructure, with its track, energy, and telecommunications networks, provides the underpinnings.

With more than 150 different careers and over 33,500 employees, SBB is one of Switzerland's largest employers. SBB is the backbone of the public transport system, ensuring that travelers arrive at their destinations safely, punctually, and reliably.

By 2030, SBB aspires to be economically stable and better anticipate customer needs – for Switzerland and as a public service company. It also aims to achieve smart growth in areas where rail has natural strengths, be a leader in sustainability, and create a railway run by people, for people.



CABLE MANAGEMENT SOFTWARE LIFECYCLE COMES TO AN END

When the lifecycle of the existing cable management tool came to an end in 2018, SBB needed to find a new system that met several requirements. It was important that the new solution could handle the increasing demands placed on infrastructure operation due to new services and heavier use of the network. It was also critical that the new software seamlessly integrate into the SBB Operations Support System (OSS) environment.

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Silvan Wigger, Project Manager
Telecom at SBB

The final requirement was direct, end-to-end connectivity to surrounding systems via interfaces – quite a challenge, given the complexity of the existing network.

A state-of-the-art software solution and a skilled service partner were needed to handle this

mammoth task. That partner would have to meet several stringent demands, from implementation of the cable management software through the migration phase, to maintenance over an eight-year service life. “We had a very clear objective. By integrating cable management software across the board, we wanted to break down the existing silo solution and ensure end-to-end data consistency,” explains Silvan Wigger, Project Manager Telecom at SBB.

DRIVING DIGITALIZATION

Another key objective was that the new system should help drive the Swiss rail company’s digitalization strategy. As they already had high quality data, migrating it from the old system to the new one was imperative. Reducing the lifecycle costs of operating the cable management software was a further aim. The SBB telecom team therefore preferred an off-the-shelf solution. Importantly, the software needed to accommodate SBB’s increasing data volume, which typically grows by an average of ten percent a year.

WANTED: THE RIGHT PROJECT PARTNER

The telecom team within the Infrastructure division launched a call for tenders to evaluate potential project partners. The requirements were clearly defined: the new solution had to cover the full functionality of the existing system, be able to work with data from third-party systems, and enable easy, flexible connection to surrounding systems via a range of interfaces. All this needed to be delivered in a single, end-to-end package that spanned provision and integration of the cable management soft-

ware, maintenance, support, and continuous development throughout the entire planned eight-year service life.

FNT met all the requirements and won the tender. Through a points-based assessment of various solutions, FNT received the highest overall score in all areas that were evaluated: quality of service, price, investment protection, return on investment, sustainability, to name a few. SBB was also impressed by FNT’s thorough proof of concept (PoC), which demonstrated FNT’s ability to address SBB’s specific needs, for the most part out of the box. The PoC also drove home the necessity of well-maintained data for a high-performance and stable telecommunications network.

FNT COMMAND DOCUMENTS CABLE INFRASTRUCTURE

FNT was awarded the contract for the entire program: provision, implementation, and integration of the cable management software; ongoing migration of data; and system maintenance and support. The cloud-based FNT Command Platform enables documentation of all the copper and fiber-optic cables that run along the railway tracks in concrete ducts. These cables have a total length of 68,000 kilometers – the equivalent of more than one and a half times around the world. The technical plant rooms and logical network elements, such as backbone nodes, are also documented.

This offers SBB a range of benefits, including the ability to realistically simulate the failure of devices, fibers, routes, and cables. Accordingly, SBB is better able to plan redundant capacity, can optimize availability, and deliver greater rail safety. Another benefit is improved planning of maintenance work, which reduces disruption to a minimum. “Plannability was a key criterion for cable documentation and the inventory system. Any interruption of operation must take place within a short window that is available once a week. This minimizes the negative impact of downtime. FNT Command offers exactly the right tools and functions to optimize this planning process,” says Silvan Wigger.

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STANDARDIZATION FOR MAXIMUM DATA CONSISTENCY

When deploying FNT Command, SBB made a conscious decision not to customize the product. The standard functionality is capable of mapping the full depth of complex structures, without the need for individual adaptation. Standardization makes control and management of many processes much easier; uniform workflows are available across all functions, modules, and interfaces. The standardized processes in FNT Command thus ensure maximum data consistency.

“FNT Command fully addresses our needs. We can manage a high-availability telecommunications network and the necessary cable infrastructure in a single system. This helps us to meet strict compliance requirements, while also giving us extensive monitoring capabilities by way of attributes assigned to the cables in the FNT system. This allows us to take availability to a new level. A reliable data set is a prerequisite for this kind of analysis,” comments Silvan Wigger.

USERS BENEFIT FROM NEW TRANSPARENCY AND MORE EFFECTIVE PROCESSES

As a key benefit, FNT Command provides transparent visualization of data, complex logic, and dependencies. Data centers, for example, can be viewed graphically, which offers better insight into specific details. It is even possible to display cabinets at different locations in a shared window. These views enable a high level of

flexibility and precision in workflows. At SBB, some 80 users benefit from maximum transparency and faster processes. Technicians can view the current status at any time in FNT Command and quickly identify the source of the problem in the event of a fault.

Looking to the future, further process optimization options are on the horizon. When changes need to be made, for example to a switch cabinet, users can start by making them via the planning function. This documents the desired change and automatically sends the work order to the technicians tasked with carrying it out. Having a transparent representation of the necessary work steps and instructions means that the technical team can quickly implement the requested change. Once the work has been completed, the status is changed in the documentation from “planned” to “actual.” This functionality in FNT Command will therefore support a high level of process automation which SBB fully intends to utilize in the future. The aim is to generate the inventory for the network and surrounding systems directly from the cable management software.

INVESTMENT WAS THE RIGHT STRATEGIC DECISION

“From a strategic viewpoint, we made exactly the right decision by investing in FNT Command. The software offers many options for addressing our specific requirements as part of consistent, high-quality data management. We can transparently map our complex processes and structures and thus ensure the ongoing success of our network-based rail infrastructure,” thus Silvan Wigger.



About FNT

FNT GmbH, headquartered in Ellwangen (Jagst), Germany, simplifies the management of highly complex digital infrastructures in companies and public authorities with its FNT Command Platform. With the cloud-enabled “software made in Germany”, IT, telecommunications and data center infrastructures can be efficiently recorded as digital twins and documented across all levels from buildings to digital services. The software also offers open interfaces and numerous functions for planning,

implementing and automating transformations and changes in an integrated manner. FNT’s customers include more than 500 companies and government agencies worldwide, including more than half of the DAX-40 listed corporations. FNT operates offices in several locations in Germany as well as in New York, London, Singapore and Timisoara and has an international partner system with market-leading IT service providers and system integrators.

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