keep track

2025/26

THE CUSTOMER MAGAZINE OF THE RHOMBERG SERSA RAIL GROUP

Highlights in this edition

RHOMBERG SERSA RAIL GROUP

ACHIEVING MORE TOGETHER

What began as a focused collaboration on the Lötschberg Tunnel has grown into a strong partnership that extends far beyond a single project. Mutual respect has fostered trust, diversity has evolved into unity and two companies have come together to form an international group with one shared goal. That goal is to rethink and improve railway technology.

Despite our deep expertise as a leading railway technology company offering a comprehensive range of services in track construction, equipment, and maintenance – one thing we definitely don't have is tunnel vision in the figurative sense. We are both willing and able to consider all things beyond our immediate interests.

What we have in abundance are ambitious ideas about modern infrastructure. Shared values. An entrepreneurial spirit. A willingness to embrace innovation. And a cultural mindset built on trust, responsibility, and collaboration rather than hierarchy.

This attitude shapes our actions every day – in leadership as well as in project execution on-site. With innovative concepts, high-quality solutions, and the use of cutting-edge technologies, our goal is to shape the future, learn continuously, and keep pushing boundaries. We do this together with our customers, our partners, and our employees.

We are proud of what we have built together and look forward to what lies ahead. Because we've also learned this - the best ideas are rarely born in isolation, rather they emerge through dialogue.

We look forward to continuing this journey with you – together and in conversation.

Koni Schnyder
President Owner Board

Hubert Rhomberg
Member Owner Board

TUNNEL EXPERTISE THAT CONNECTS

They traverse mountains, link cities, regions and countries, and sometimes even run beneath the sea. In short, railway tunnels are technical masterpieces that enable efficient and sustainable rail mobility. That's why we at Rhomberg Sersa Rail Group are particularly proud of our extensive expertise in tunnel equipment and refurbishment – and of the fact that we have played, and continue to play, a key role as the reliable partner of choice in numerous projects.

Our expertise is in demand – whether for new tunnel construction, such as the Semmering Base Tunnel (p. 20), or time-critical repairs to high-performance tunnels like the Gotthard Base Tunnel (p. 08). We also frequently work on tunnels that are more than 100 years old and must now be adapted to meet modern demands – for larger, more comfortable and faster trains – often while operations continue. Rhomberg Sersa Rail Group offers the full range of services for this: from ballasted track approaches to slab track systems, tunnel refurbishments and clearance profile expansions. We also cover all electrical system requirements – from 50 Hz systems and control technology to high-voltage overhead lines. Supported by cutting-edge BIM technology, RSRG has played a major role in almost all of Europe's longer rail tunnels. In this issue of our customer magazine keep track, we take a closer look at some of these and other exciting tunnel-related projects.

As always, this edition also offers fascinating insights into our wide-ranging activities – including special anniversaries in Australia (p. 31) and Austria (p. 34), innovative technologies and products, our extensive fleet of machinery, and the role of digitalisation at Rhomberg Sersa Rail Group.

We hope you enjoy reading!

Garry Thür
CTO

Thomas Bachhofner
CEO

Thomas Mayer
CFO

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ONLINE-MAGAZINE

We are delighted to be able to welcome you online again this year. You can find the online edition of our customer magazine at: magazine.rhomberg-sersa.com

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RSRG'S

TUNNEL VISION

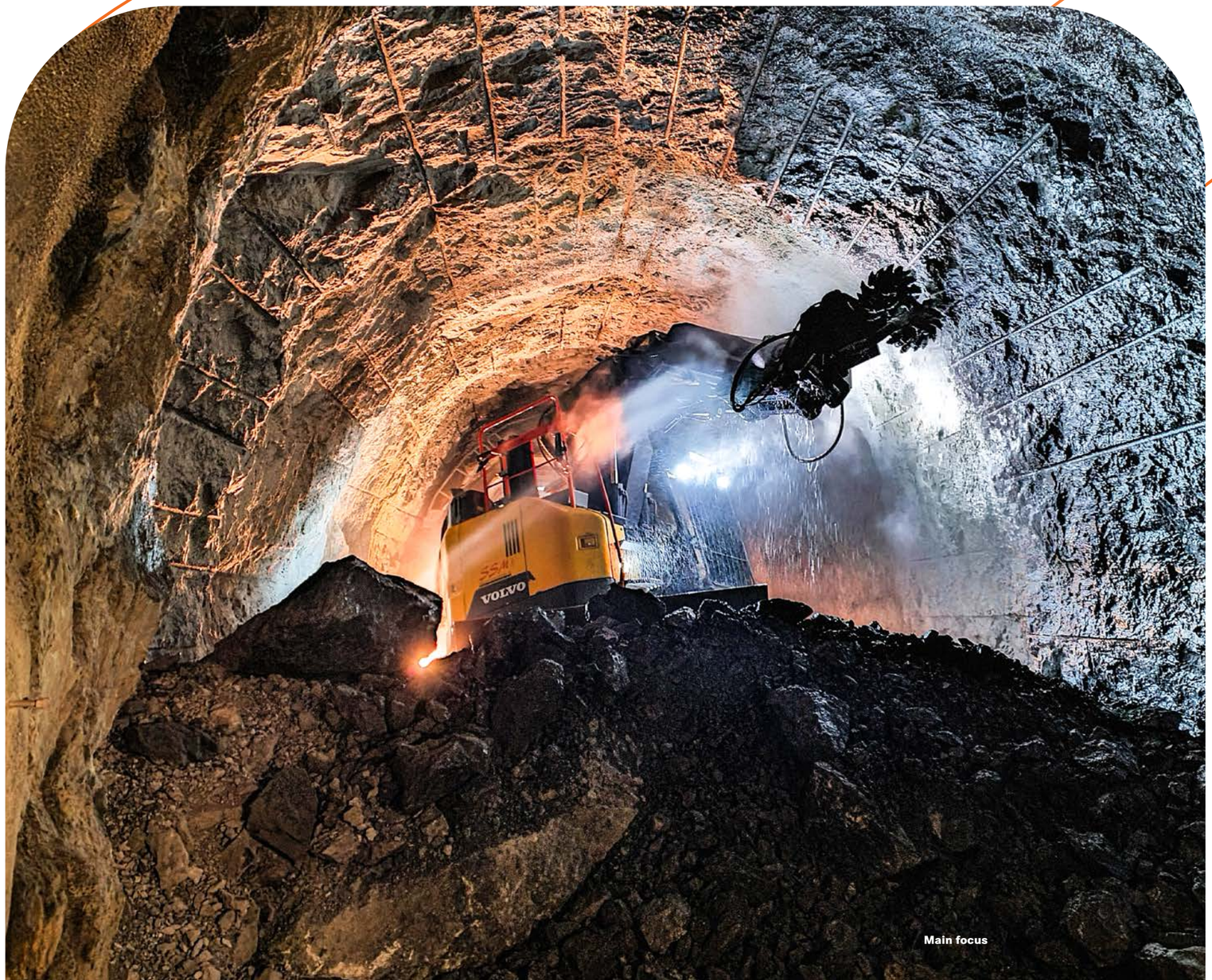
THEY CLEAR THE WAY FOR THE WORLD'S RAILWAYS: TUNNELS.

These mostly underground structures allow trains to pass beneath obstacles such as mountains, bodies of water, or other transport routes. In railway construction, tunnels are particularly important, as trains can only handle limited gradients and require wide curves to change direction. Tunnels enable trains to reach their destinations much more directly and quickly than alternative routes. For example, the Koralm Tunnel cuts travel time between Klagenfurt and Graz from nearly three hours to just 45 minutes.

The conclusion is clear: these impressive feats of engineering play a crucial role in the success story of what is currently the most sustainable mode of transport!

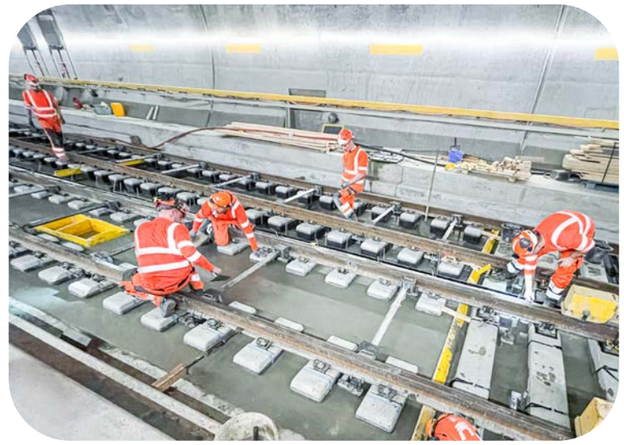
Meeting the complex requirements of new railway tunnel construction or the refurbishment of existing ones demands extensive expertise and years of experience. Few railway technology companies in Europe – or indeed the world – can match Rhomberg Sersa Rail Group in this regard.

Added to this is RSRG's almost complete service portfolio, covering refurbishment, equipment installation, track construction, site management and temporary works, as well as digital rail services.



TECHNICAL MASTER-PIECE

How RSRG restored the Gotthard Base Tunnel under extreme conditions.



Marco Mosimann
Director Construction South, Swiss Market

Dominko Bilic
Project Manager, Swiss Market

Sophie Schlögl
Technical Expert (DRS), Swiss Market

Fabrice Lardon
BIM Reality Capture (DRS), Swiss Market

FOLLOWING A MAJOR FREIGHT TRAIN DERAILMENT, A SEVEN-KILOMETRE SECTION OF SLAB TRACK HAD TO BE COMPLETELY REFURBISHED – A TECHNICAL CHALLENGE UNDER THE TOUGHEST CONDITIONS..

At 57 kilometres in length, the Gotthard Base Tunnel (GBT) is the longest railway tunnel in the world and a vital transport artery in Europe. Each day, numerous freight and passenger trains travel this route. All the more important, then, that this key link between Northern and Southern Europe through the Alps runs smoothly. But in August 2023, operations came to an abrupt halt.

The accident and its aftermath
A faulty wheelset caused a freight train to derail, severely damaging a significant stretch of infrastructure. The slab track was particularly affected – including rails, sleeper blocks and the switch-over gate.

Immediately after the incident, tunnel clearance began, with RSRG providing support. The derailed train and all damaged materials were removed. RSRG then conducted a detailed damage assessment and developed the refurbishment plan. A full renewal of the affected section was decided in order to meet the highest track performance standards.

High-speed refurbishment
Work began at the end of October 2023 under a strict timeline to restore full operations as quickly as possible. The first step was to install two high-speed turnouts, including their drives, at the Faido multifunction station. This was followed by complete renewal of the damaged slab track, with rails, over 20,000 sleeper blocks and the concrete layer replaced.

Due to stringent requirements regarding track geometry and stability, the team deployed the most advanced milling, concreting and surveying technologies. The use of LVT (Low Vibration Track) support points – a proven system for reducing vibrations – ensures a long-lasting, stable track structure.

Logistical challenges in the tunnel
Limited space and access via just one tunnel bore made the works particularly demanding. Materials and personnel had to be precisely coordinated, with transport vehicles, concrete pumps and machinery operating in perfect sync. The track installation followed a structured process: removal of the damaged track, milling, surveying, concreting and finally welding.

Progress was continuously documented and visualised in “Maps of RSRG”, the in-house WebGIS platform developed by Digital Rail Services (DRS). Up to 80 staff members worked daily in three shifts under challenging tunnel conditions. Around 300 metres of track were refurbished each week.

One particular challenge was that freight traffic had to continue operating – albeit in a limited capacity – in the adjacent tunnel bore. This presented a significant logistical hurdle for SBB (Swiss Federal Railways) and all executing parties, and had to be taken into account throughout the construction process.

Project dimensions
The refurbishment required enormous quantities of materials and precise logistics:

- Nearly 23,500 LVT blocks were removed and reinstalled.
- Around 4,500 m³ of concrete were milled out and re-poured.

Extreme conditions for people and machines
High temperatures and limited air circulation made working in the tunnel physically demanding. In addition, high levels of dust and exhaust fumes from machinery required specific safety measures, including protective masks and strictly controlled ventilation.

Precision to the millimetre
Slab track requires exceptional installation accuracy. Given the international nature of traffic, the highest standards of both Switzerland and the EU were applied. Relative and absolute positioning accuracy of ±2 mm had to be demonstrated along the entire track and turnout sections.

High-precision, efficient surveying
To meet these stringent requirements, multiple measurements were taken throughout the construction process along the seven-kilometre section. A dedicated four-person team from Digital Rail Services ensured compliance before and after every concreting step. Final checks were carried out using an IMU-based measurement system, enabling the entire section to be surveyed in a single day.

In addition, test runs were performed using special measuring vehicles to verify safety and ride comfort. Only once all tests had been successfully completed was the tunnel reopened for regular rail traffic.

Every sleeper counts
Another key challenge was documenting the exact position of all ~23,500 sleepers. A dual-laser scanner system was used for rapid and reliable surveying. From the resulting point cloud, the LVT sleepers were classified using machine learning by Digital Rail Services, and the exact position of each sleeper was automatically determined. Thanks to the international team and the use of internal synergies, the entire process was developed within just a few weeks.

CONCLUSION

A success for rail transport
The refurbishment of the Gotthard Base Tunnel marked a milestone in the maintenance of European infrastructure. Thanks to precise planning, cutting-edge technology and outstanding engineering, the tunnel was brought back into operation quickly, safely and on schedule – without delay. A remarkable example of efficiency and teamwork in rail transport. The GBT remains a symbol of progress – today and for the mobility of tomorrow..

THE INNOVATOR

A CONVERSATION WITH URS TANNER, TUNNEL RENEWAL PROJECT MANAGER AT THE RHAETIAN RAILWAY, ON SUSTAINABILITY AND DIGITALISATION IN TUNNEL CONSTRUCTION.

Mr Tanner, tunnel construction has evolved significantly in recent years. What role does digitalisation play in this?
Digitalisation is clearly a driving force for innovation in both tunnel construction and renewal. It is opening new possibilities that require new forms of collaboration between planners, surveyors, and contractors. And it's not just about planning – digitalisation is also transforming execution. For example, 3D scanning can now determine the tunnel profile with millimetre precision before and after concreting. This makes it possible to calculate the exact volume of material used and thus the exact cost.

However, this requires clearly defined procedures, frameworks and workflows to be in place before construction begins. I'm deliberately not using the term Building Information Modelling (BIM) here, as we're not quite there yet in terms of information integration. But our goal is clear: full digital integration of all processes – from initial planning to long-term maintenance. We still have a lot to learn in this area, and not all stakeholders have the same level of expertise or staffing resources.

What measures are you taking in tunnel construction to improve sustainability?
Sustainability starts with the choice of materials. We're currently exploring the use of concrete with a reduced cement content to lower CO_2 emissions. One promising approach is using biochar as an additive – it not only stores CO_2 but also darkens the concrete, which is especially relevant for us as we work in UNESCO-protected areas and want to preserve the historic, darker tunnel appearance. Another exciting initiative is the use of waste products from desalination plants as concrete additives to further reduce resource consumption.

Are there any sustainable developments in the construction process itself?
Yes, with our "standard tunnel construction method" and the use of serially prefabricated elements, we've effectively adapted modular construction principles to tunnel renewal. This comes with all the associated benefits: resource efficiency, reduced emissions, and faster construction timelines. We cut down on material usage, minimise waste, and significantly accelerate the construction process which in turn, reduces energy consumption and limits disruption to railway operations. We're also testing modern construction machinery equipped with particle filters or powered electrically to reduce on-site emissions.

What developments do you see shaping the future of tunnel construction?
The combination of digitalisation and sustainability will fundamentally transform the sector. Automated processes, new materials, and closer collaboration between clients, planners and contractors will be key. Alliance models – where all stakeholders sit at the same table and share responsibility – will also become increasingly important. Technological advancements will continue to present major challenges, but also great opportunities. I'm excited to see where the journey takes us!

About the interviewee
Since 2012, Urs Tanner has been Tunnel Project Manager at the Rhaetian Railway, where he is responsible for introducing and further developing the company's "standard tunnel construction method" and overseeing its application across various projects. A trained civil engineering draughtsman and site manager for civil works, Urs previously gained tunnel construction experience working in a surveying office. Earlier in his career he worked at a construction chemicals supplier and for a plastic pipe manufacturer. Originally from the canton of Graubünden, he was involved in the Promontogno bypass tunnel and the NEAT "Sedrun intermediate access" project and has since overseen numerous tunnel projects in the cantons of Graubünden and Valais.

UNRIVALLED

TUNNEL EXPERTISE

The (digital) RSRG tools that rail infrastructure companies can rely on for their tunnel projects:

dProB: more than just a logistics simulation
This tool enables detailed planning of tunnel construction sites, taking into account both construction phases and ongoing rail operations. With real-time visualisation, users can simulate workflows and logistics in a digital environment. The software integrates timetables, actual train movements, and the modelling of resources and personnel, creating a realistic overall picture of the construction project.

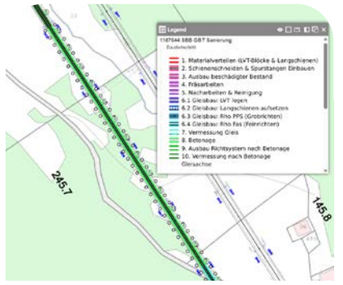
Track and turnout maintenance: efficient life cycle extension
Intelligent RSRG tools like MR.pro®, field-tested for over 30 years, actively support rail infrastructure companies in managing their track networks. For example, the inventory data of a turnout installed as part of a BIM process is evaluated and seamlessly linked with inspection data recorded during the construction phase. The collected inspection and maintenance data create a complete history, enabling accurate forecasting of the turnout's future performance and service life.

FahrwegDiagnose: holistic data competence
RSRG operates a dedicated measuring vehicle for metre-gauge railways, already in regular use with over 15 Swiss and two French railway operators. In addition to recording track and overhead line geometry, measurements are often supplemented by deflection analyses. In tunnels with slab track, the data provides valuable insight into the transition zones to ballasted track. The specialist platform IRISSYS© is used for time-series analysis of linear data. It not only contains measurement results but also infrastructure information and records of completed and planned maintenance activities. Interfaces to GIS or asset management systems are essential – and corresponding functionalities are available.

BIM: better communication and faster construction processes
In tunnel renewals, especially when upgrading tunnel radio and mobile communication systems, Building Information Modelling (BIM) plays a key role. BIM enables precise planning, coordination and documentation of all measures. By digitally modelling the tunnel, cable routes, antenna locations and maintenance access points, all elements of the project can be efficiently coordinated. This shortens construction time, reduces risks, and delivers infrastructure which is future-proofed.

"Meeting the complex requirements of new railway tunnel construction or refurbishment demands extensive expertise, years of experience – and the right tools. Rhomberg Sersa Rail Group offers all of these like few other rail technology companies in Europe or worldwide."

Thomas Bachhofner
CEO



Maps of RSRG: the construction site at a glance
The RSRG WebGIS visualises a wide variety of data types and information in spatial relation to the construction site, available in real time on an online platform. In the construction progress module, data can be managed within individually defined process segments. This makes the project status visible to all stakeholders, helps identify critical phases more easily, and enables targeted action.

PRECISION AND TRANSPARENCY

The Semmering Base Tunnel project relies on state-of-the-art working methods.

Ralf Sommer
Head of Digital Rail Services, Project Business

Philipp Ofenböck
EDS

Emanuel Leirich
BIM Manager, Project Business

IN THIS COMPLEX LARGE-SCALE PROJECT, RSRG – TOGETHER WITH JOINT VENTURE PARTNER PORR AG – IS RESPONSIBLE FOR THE ENTIRE TECHNICAL EQUIPMENT OF THE TUNNEL, INCLUDING EXECUTION AND INSTALLATION PLANNING, IMPLEMENTATION AND FINAL AS-BUILT DOCUMENTATION. THE TEAM IS USING BUILDING INFORMATION MODELLING (BIM) AND LEAN MANAGEMENT TO ENHANCE EFFICIENCY, SCHEDULE AND COST RELIABILITY, AS WELL AS EXECUTION QUALITY.

Building Information Modelling (BIM) allows for continuous digital modelling and coordination across all trades. All planning disciplines benefit from detailed 3D modelling, which helps detect clashes at an early stage and significantly reduces on-site changes. BIM also fosters transparent collaboration among all parties involved. The entire planning process is consolidated in a lean board, allowing potential challenges to be identified and addressed early.

A central element in this process is the overall BIM coordination which, in this project, RSRG is implementing for the first time together with its subsidiary EDS. This ensures interdisciplinary model integration, information management, and high-quality models and planning outputs.

The actual site conditions are recorded via laser scanning and integrated into the BIM model as point clouds. This enables early detection of discrepancies between the design and the construction site, helping to reduce errors and rework. Coordination across the different disciplines is more seamless, resulting in a smoother process on site.

Construction teams benefit directly from well-structured trade-specific models. These clearly show the current planning status (the “target condition”) on site. Everyone is aligned and can quickly get their bearings. Unclear points? They’re addressed directly within the model – with no lengthy back-and-forth or rounds of clarification.

This approach has proven particularly effective in defect management: QR codes placed inside the tunnel link directly to the current model. Defects can be recorded directly at the correct component in the model – clearly, transparently, and for everyone to see.

The logistics process has also been newly designed – lean, practical and well-structured. With lean methods, digital tracking, and efficient storage space management, all work steps, deliveries and removals can be reliably documented and monitored. This helps everyone involved stay on top of the construction process and material flows therefore improving coordination and ensuring smoother operations on site.

In addition to model usage and on-site coordination, commissioning and daily site reporting for the Semmering Base Tunnel are also handled digitally via a central system. This makes all processes, inspections and progress transparent at any time, saving time and significantly simplifying site management.

Semmering Base Tunnel
The SBT is one of Europe’s most important infrastructure projects and a key rail link between Lower Austria and Styria. At 27.3 kilometres in length, the tunnel will significantly reduce journey times on this vital route and increase capacity for both passenger and freight traffic.

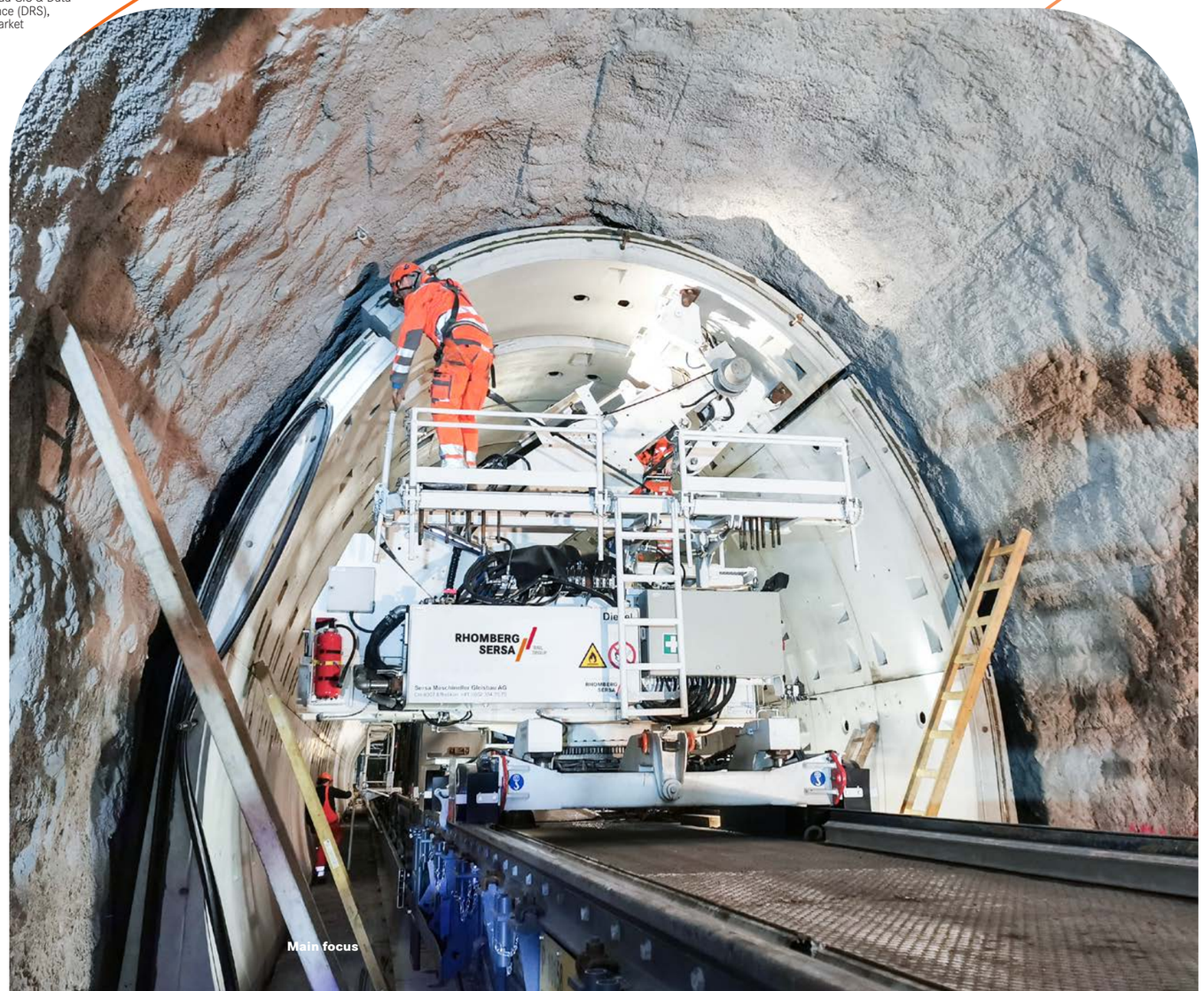
TRADITION MEETS

INNOVATION

RSRG is refurbishing the 670-metre-long Toua Tunnel in the canton of Graubünden.

Pius Jochum
Tunnel Refurbishment Project Manager, Swiss Market

Amanda Zwicky
Team Lead GIS & Data Intelligence (DRS), Swiss Market



LOCATED AT THE HEART OF THE UNESCO WORLD HERITAGE ALBULA LINE IN SWITZERLAND, THE TOUA TUNNEL SITS AT AN ALTITUDE OF 1,680 METRES AND IS INACCESSIBLE DURING WINTER. MANY KNOW THE LINE FROM THE WORLD-FAMOUS GLACIER EXPRESS AND BERNINA EXPRESS.

As part of the Rhaetian Railway's (RhB's) long-term renewal programme, this helical tunnel is being refurbished using the "standard tunnel construction method" developed by the RhB. RSRG has already completed two of five modernised tunnels along this line – the Toua Tunnel is now the third.

Most RhB tunnels were built around 1900. Over time, water, ice and geological conditions have taken their toll. The aim of the refurbishment is to preserve the structure while modernising the tunnel from a technical standpoint.

Refurbishment using the RhB standard construction method

The original tunnel portals are carefully dismantled stone by stone and reconstructed in the original style. The tunnel cross-section is enlarged by about one metre, and the invert is lowered and fitted with RhB-type slab track. The upgrade also includes improved drainage, new utility conduits and a lit handrail along the escape route.

All construction work takes place exclusively at night to ensure uninterrupted train service during the day. As soon as the last train passes through the tunnel, blasting begins, bringing down around 120 m³ of rock onto the tracks. The debris is then cleared and the exposed rock face secured. In parallel, drainage systems are installed and segmental lining elements are fitted using specialised equipment to ensure a watertight seal.

The portal areas remain visually unchanged. A certified heritage architect oversees the work to maintain the historic appearance of the structure.

Efficient execution and sustainable construction methods

Track renewal is being carried out during three full line closures between 2024 and 2026. The Tyrex system is used to sustainably load and remove ballast and excavated material.

Due to the tunnel's difficult access, construction equipment is maintained in an on-site workshop to ensure smooth night-time operations since any breakdown would have serious consequences for train service on the Albula line.

Digital Rail Services (DRS), RSRG's in-house digital team, is supporting the construction crew with the WebGIS tool Maps of RSRG, which combines geodata and layout plans with high-resolution aerial images (drone footage). This centralised digital data pool reduces the need for field inspections during planning, enables resource-efficient planning of site setup and access, and supports documentation and evidence collection.

This internal collaboration across the group maximises synergies and ensures efficient implementation and sustainable construction practices.

IVES SLAB TRACK

TUNNEL REFURBISHMENT IN THE FAST LANE

RSRG's slab track system IVES shows its strengths where track possession times are getting ever shorter.

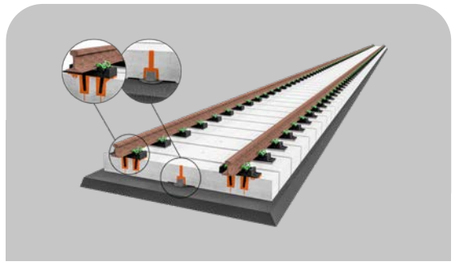
"IVES shows its full potential in single-track tunnels!"

Stefan Vonbun
Head of Track Products,
Project Business

THE GROWING SUCCESS OF RAIL AS A SUSTAINABLE MODE OF TRANSPORT IS LEADING TO INCREASINGLY DENSE TRAIN SCHEDULES. AT THE SAME TIME, MUCH OF EUROPE'S RAIL INFRASTRUCTURE IS AGEING. THANKFULLY, THERE'S IVES.

While tunnels typically have a service life of around 100 years, track infrastructure – depending on design speed, axle load and superstructure type – generally lasts between 40 and 60 years. Additionally, many older tunnels no longer meet the clearance requirements of modern electric trains. In short, large parts of the global rail infrastructure – including tunnels – are due for refurbishment and modernisation, especially as many operators are aiming to increase train capacity even further.

In the UK, Ireland, Germany and Australia alone – all key markets for RSRG – there are around 1,000 kilometres of railway tunnels. At a conservative annual refurbishment rate of three percent, this would mean refurbishing some 32 kilometres of tunnel each year. Deutsche Bahn, for example, is tackling this enormous challenge through so-called corridor projects, where entire route sections are comprehensively renewed in very short timeframes. The aim is to improve the network's infrastructure "grade" (comparable to a school rating) from "barely sufficient" to "good" or "very good".



IVES slab track system: Close-up showing Vossloh DFF 300 RS direct fastening and stainless-steel shear dowel, both embedded in high-strength grout (shown in orange).

Laid IVES blocks create a level surface suitable for rubber-tyred traffic.

Track panel on RhoFAS lifting and alignment system, mounted on IVES blocks. Integrated formwork ready for grouting of the fastening system.

Fast, precise, and durable
This is where the IVES slab track system from Rhomberg Sersa Rail Group comes in. Developed thanks to decades of experience with all common slab track systems, IVES is designed for rapid installation, high precision, and low maintenance. It truly shines in tunnel applications – especially single-bore tunnels.

After the prefabricated IVES concrete slabs are laid, they form a flat surface immediately accessible to rubber-tyred construction vehicles. The patented direct fastening system Vossloh DFF 300 RS – developed jointly by RSRG and Vossloh – enables top-down installation using fast-curing grout (either cement- or epoxy-based). The RhoFAS system for track alignment even allows the use of lightweight rail-bound vehicles with axle loads under 1.5 tonnes during the grouting process.

Thanks to these features, construction logistics are not limited to a single tunnel portal – materials, equipment and personnel can be brought in from multiple access points. While IVES is suitable for use on open track as well as in tunnels, its advantages are particularly evident in tunnel modernisation or new-build projects.

MODERNISATION OF

DORTMUND CENTRAL STATION

RSRG renovates platforms and infrastructure at a major transport hub in Germany, all under live traffic conditions.

Tobias Tüscher
Site Manager,
Project Business

AS PART OF THE COMPLETE REDEVELOPMENT AND COMPREHENSIVE MODERNISATION OF ALL EIGHT PLATFORMS AT DORTMUND CENTRAL STATION, RHOMBERG SERSA RAIL GROUP EQUIPPED THE STATION WITH A NEW, STATE-OF-THE-ART LIGHTING SYSTEM. IN ADDITION, THE ENTIRE PLATFORM POWER SUPPLY WAS RENEWED. TO MAXIMISE SAFETY, A NEW HIGH-PERFORMANCE 10 KV MEDIUM-VOLTAGE SYSTEM WAS INSTALLED IN THE FORMER POST AND LUGGAGE TUNNEL.

To ensure reliable energy supply, a new transformer station with two 630 kVA dry-type transformers was constructed and it has been in operation since May 2022. An existing 10 kV transformer station was also newly connected to the grid. This required rerouting power lines throughout the entire station – a particularly challenging task given the existing infrastructure.

A central element of the project was the construction of a new pedestrian underpass. It now links the platforms with the newly built concourse and the northern entrance, providing passengers with a more comfortable and accessible route through the station.

Challenges …

A key challenge was that all refurbishment work had to take place during ongoing operations – in other words, “under live wheels”. Only specific sections of the station could be closed at a time, with only the platform currently under construction ever taken out of service. Passenger traffic had to be maintained at all times, including during demolition and new construction phases.

Throughout the construction period, all parties involved were consistently pushed to their limits. The planning had to be revised several times – whether due to changes in regulations, technical innovations such as LED lighting, CCTV, Wi-Fi or D-BOS, or unexpected structural conditions in the existing building. Despite these adjustments, the project schedule was met without delays.

… and solutions

None of this would have been possible without the close, solution-focused collaboration of everyone involved. Special thanks go to Deutsche Bahn as the project owner, who always pursued a pragmatic approach. The successful delivery of this project demonstrates what can be achieved through ongoing coordination, technical expertise, and shared commitment.

After a total construction period of seven years, the last of the eight platforms was completed and officially opened on February 7, 2025 – marking a major milestone for the station.

KORALM TUNNEL

IN THE FINAL STRETCH

A European infrastructure project of superlatives is nearing completion.

Ronald Ehrenhöfer
Authorized Officer, Technical Director & Head of Sales Electrical Equipment, Austrian Market

ONE OF THE MOST SIGNIFICANT RAIL INFRASTRUCTURE PROJECTS IS APPROACHING ITS CONCLUSION: THE KORALMTUNNEL. THE FOCUS OVER THE PAST YEAR WAS THE INSTALLATION OF THE OVERHEAD CONDUCTOR RAIL – A DEMANDING SUB-PROJECT REALIZED BY RHOMBERG SERSA RAIL GROUP (RSRG) IN PARTNERSHIP WITH ANOTHER CONTRACTOR.

Over the past five years of intensive construction, RSRG, together with a joint venture partner, has implemented both the installation of the slab track (Lot GU1) and the electrical and mechanical equipment (Lot GU2). In addition, the Rhomberg Sersa Rail Group contributed its expertise in the fields of digitalization and robotics, installed various ballasted tracks and switches on the eastern approach line and at logistics terminals, and ensured reliable traction power supply including the connection of the overhead catenary system.

Another milestone towards commissioning this major project was reached last year: the 33 km long tunnel was equipped with an overhead conductor rail – a particular challenge delivered by RSRG as part of the joint venture. Each partner equipped one tunnel tube. Skilled specialists worked in double-shift operation to complete the demanding installation works on schedule.

The installation of the overhead conductor rail was carried out using specially developed assembly units that enabled precise and efficient installation. Every step was executed with the highest accuracy. One of the key challenges was adhering to the tight tolerances, in particular the contact wire height, which had to be installed with an accuracy of +/- 4 mm. In February of this year, the tunnel was handed over on schedule.

The year 2025 will be dedicated to final works. In particular, the dismantling of temporary installations required for the tunnel construction will be carried out. For example, this autumn will see the removal of four switches and around 700 m of track at the eastern construction site facility in Wettmannstätten.

STREAMLINED TUNNEL REMEDIATION IN THE

ROCKY MOUNTAINS

Rhomberg Sersa Rail Group impresses with a holistic approach.

Steve Atherton
COO, North American Market

THE CANADIAN PACIFIC KANSAS CITY (CPKC) CONNAUGHT RAIL TUNNEL IN CANADA IS PART OF THE MAIN LINE TO VANCOUVER. BUILT IN 1916 BY 'HAND' AS A DOUBLE TRACK TUNNEL UNDER MOUNT MACDONALD IN BRITISH COLUMBIA, IT WAS SUBSEQUENTLY CONVERTED TO A SINGLE TRACK TO ALLOW DOUBLE STACK CONTAINER FREIGHT TO PASS.

As the track was constructed with steel ties (sleepers), corrosion was extensive so in 2018 CPKC commenced a project to convert the tunnel to timber ties. To lower the ballast depth, the entire tunnel was also ballast cleaned. CP did the first section with their own resources, utilising traditional rail mounted excavators to dig out the existing ballast to the tunnel walls. This proved slow and required double handling of the spoiled ballast, which had to be rehandled for removal from the tunnel.

In 2019, Rhomberg Sersa and our track partner, Remcan Projects undertook an innovative new methodology to streamline the tunnel remediation. Utilising the Rhomberg Sersa Plasser RM80 UHR ballast cleaner and locally sourced MFS or Nappa cars, Rhomberg Sersa and Remcan delivered an 'end to end' solution to CP, carrying out the entire work from ballast cleaning and spoil removal via MFS through to renewal of the track and all associated works. Undertaking three successful annual campaigns over the next 4 years, 2024 saw the final segment of the tunnel renewed but this time with a fleet of Rhomberg Sersa owned MFS wagons – part of the first privately owned Material Handling and Distribution Train (MHDT), that Rhomberg Sersa North America introduced to Canada in 2023.

MODERNISATION OF THE

ÖBB TAUERN TUNNEL

Thanks to RSRG expertise: increased performance for a vital Alpine transit corridor.

Michael Traar
Site Manager Railway Technology, Project Business

Christian Silbernagl
Installation Manager Control and Safety Technology, Austrian Market

AFTER 115 YEARS IN OPERATION, THE TAUERN TUNNEL HAS BEEN FUTURE-PROOFED THROUGH EXTENSIVE REFURBISHMENT WORKS. RHOMBERG SERSA RAIL GROUP WAS RESPONSIBLE FOR BOTH THE RAILWAY SYSTEMS INSTALLATION AND SIGNAL TECHNOLOGY – ONCE AGAIN DEMONSTRATING ITS EXPERTISE IN COMPLEX TUNNEL PROJECTS.

The Tauern line between Salzburg and Villach is one of Austria's most important Alpine transit routes and a key axis for north–south rail traffic. The required refurbishment works began with the first construction phase between November 2024 and July 2025.

RSRG successfully secured the contract for both electrical engineering disciplines. Teams from two locations combined their expertise to deliver a one-stop solution for the client. As part of the modernisation of the historic Tauern Tunnel, RSRG's Tunnel Equipment team in Austria – together with a partner – was responsible for the second-largest work package of the entire project.

Work began immediately after the contract was awarded. The Control and Safety Technology (LS) team dismantled components including intermittent automatic train control (PZB), speed monitoring systems, light signals (including signal boxes) and axle counters.

The tunnel equipment team began by removing all components from the tunnel cross-section to quickly provide a clear worksite for the structural refurbishment contractor.

Throughout the entire structural phase, RSRG maintained ongoing dialogue with the client (ÖBB-Infrastruktur AG) and all other contractors to ensure technical accuracy, regulatory compliance, and smooth coordination. This proactive approach helped avoid any delays within the tight schedule.

In parallel with the construction works, the team installed handrails along both tunnel walls and began mounting niche components for the telematics and 50 Hz systems.

In April this year, the main rail-based works began – including the machine-assisted pulling of approximately 200 kilometres of cable, with daily progress of up to 10 km. These activities also included radio installations and final system testing.

The LS team also installed and commissioned modern PZB magnets and axle counters.

For this project, RSRG's Tunnel Equipment Austria team and its partner were responsible not only for their core expertise – the 50 Hz installation – but also for the full telematics infrastructure, installation of mechanical systems and air flow monitoring stations. The team also handled all structural fire protection measures and installed specially developed tunnel doors designed for operation under extreme conditions.

The greatest challenge, as is often the case, was coordinating the various trades – particularly because only one of the two tracks could remain in operation. However, RSRG's teams rose to the occasion. One of the key success factors was the collaborative, solution-oriented partnership between the contractors and the client.

THE EARLY BIRD

CATCHES THE WORM

Early Contractor Involvement (ECI) Pays Off for Slab Track Projects.

Chris Hardwick
Principal Engineer
Projects & Engineering,
UK Market

1 Project Selection (ES1–ES3)

2 Design (ES4–ES5)

3 Delivery (ES6)

4 Close (ES7–ES8)

RHOMBERG SERSA RAIL GROUP HAVE ALWAYS BELIEVED THAT THE BEST DELIVERED CONSTRUCTION PROJECTS START WITH EARLY CLIENT ENGAGEMENT. THE ABILITY TO INFLUENCE THE DESIGN AT AN EARLY PHASE IS PARAMOUNT AND ENABLES US, AS PART OF DIRECT AND MEANINGFUL CONSIDERATION, TO DE-RISK THE PROJECT CONSTRUCTION PHASE AND FACILITATE SUCCESSFUL REALISATION ON SITE.

It is no coincidence that the talented engineering team at Rhomberg Sersa in the UK are well versed in both the design aspects of ballastless track as well as construction planning and installation. Early engagement has led to the award of the construction phase of the works post design on many occasions, as a natural progression.

Network Rail uses a 4-phase process for infrastructure projects with 8 Engineering Stages (ES): Project Selection (ES1-ES3), Design (ES4–ES5), Delivery (ES6) and Close (ES7-ES8).

ES3, (Feasibility) is where RSRGs involvement may begin. The engineering team would assess the proposed track alignment, ground conditions, client requirements and construction constraints. The deliverable is a report in which several track-forms and transition solutions are evaluated recommendations are made to the client. Drawing on the extensive experience within the Rhomberg Sersa Group with many ballastless track systems the objective is always to recommend the optimal solution for the specific project scenario.

ES4 (Preliminary Design) ends with the outline approval of the solution following development of the design based on the ES3 proposal. Typically, RSRG would develop a fully integrated 3D model as it must be demonstratet that the solution satisfactoryly interfaces with the drainage, civil structures, electrification and signalling. It is at this point where delivery personnel are also involved and the preplanning for execution can be started. This is essential for the client to receive a suitable design, with account taken of constructability and risks identified.

ES5 is Detailed Design, in which RSRG engages and works with the design partners who prepare the structural calculations. Final drawings and reports are worked on together to prepare the scheme for full approval for construction (AFC). By the Delivery Phase, the construction team are already well versed with the design and the proposed construction methodology. RSRG engineers that have directed the solution development are also integrated into the construction team and provide on-site progressive assurance. The integration of design and delivery is key, and having engineers familiar with both, means that emerging issues are resolved efficiently and decisively. The transition between the project phases is bridged seamlessly as a result.

Experience shows that this approach is a winning formula. Good examples of this are projects such as Kings Cross Gasworks Tunnel, Barking Riverside Extension, and Mountfield Tunnel. We look forward to more examples of these to come.

01

FROM THE COMPANY

20 YEARS OF INNOVATION AND EXCELLENCE

Rhomberg Sersa in Australia Celebrates Anniversary.

Amber Bellamy
Marketing and Communications Manager, Australian Market

AUS THIS YEAR MARKS A MAJOR MILESTONE FOR RHOMBERG SERSA AUSTRALIA AS THE COMPANY CELEBRATES 20 YEARS OF EXCELLENCE IN THE AUSTRALIAN RAIL INDUSTRY. BEGINNING AS TRACK AUSTRALIA, THE COMPANY HAS GROWN INTO A LEADING PROVIDER OF INNOVATIVE RAIL INFRASTRUCTURE SOLUTIONS, HELPING TO SHAPE THE NATION'S TRANSPORT NETWORK.

From a small team of just 10, Rhomberg Sersa Australia has expanded to nearly 300 employees, all dedicated to delivering outstanding rail services across major projects. Its journey over the past two decades is a testament to the hard work, expertise, and commitment of its people. As Managing Director Richard Morgan notes, "Reaching this 20-year milestone is a testament to the dedication and expertise of our people. Our strategy has always prioritised our core business clients and delivering the highest standard of work."

The company has played a key role in delivering some of Australia's most important rail projects, including the Newcastle Light Rail, Sydney Metro, and Brisbane's Cross River Rail. Looking ahead, Rhomberg Sersa Australia is preparing to contribute to the Western Sydney Airport line—an exciting project that will enhance regional connectivity and reinforce its position as a leader in the rail sector.

As it celebrates this significant anniversary, Rhomberg Sersa Australia remains focused on the future. With a commitment to innovation, strong partnerships, and supporting Australia's growing transport needs, the company is well-placed to continue delivering cutting-edge solutions that shape the nation's rail network for generations to come.

"Reaching this 20-year milestone is a testament to the dedication and expertise of our people. Our strategy has always prioritised our core business clients and delivering the highest standard of work."

Richard Morgan
Managing Director, Australian Market

EXPERTISE AS AN ALLIANCE PARTNER

RSRG secures two more IPA projects with Deutsche Bahn.

AFTER SUCCESSFULLY SUPPORTING THE NEW COTTBUS PLANT AND THE "GÄUBAHN NORTH" PROJECT, THE RAILWAY TECHNOLOGY SPECIALISTS HAVE NOW BEEN SELECTED FOR TWO MORE ALLIANCE PROJECTS: THE "RESIDENZBAHN" AND THE LÜBECK–LENSAHN RAIL ALLIANCE.

RSRG WAS AWARDED TWO NEW CONTRACTS IN RECENT MONTHS WITHIN THE FRAMEWORK OF "INTEGRATED PROJECT DELIVERY" (IPA), ONCE AGAIN DEMONSTRATING ITS STRENGTH AS A RELIABLE PARTNER FOR COLLABORATIVE SUCCESS.

RESIDENZBAHN

Just four months after winning the contract for the rail link in Lübeck, RSRG has become part of another alliance project with "Residenzbahn". Together with long-standing partner Reif Bauunternehmung GmbH & Co. KG, RSRG is responsible for the transport infrastructure. Operating as ARGE RSRG-Reif, the two companies are in charge of civil works, cable trenching, track construction, and the construction of passenger stations.

"Residenzbahn" involves bundling several sub-projects along the Stuttgart–Karlsruhe rail corridor into a single, integrated project – from permitting through to commissioning. These sub-projects include the remodelling of track systems in Pforzheim and Wilferdingen–Singen to allow overtaking by 740-metre freight trains (part of the 740-metre network programme), the renewal of a signal box, and the reconstruction of a multi-track railway bridge in central Pforzheim. The measures also involve upgrades to the full range of railway systems – including overhead lines, signalling and control technology, lighting, 50 Hz systems, and telecommunications equipment.

Philipp Nachbaur, Managing Director of Project Business at RSRG Germany: "We are delighted that DB has once again placed its trust in us and that we can contribute to another major IPA project. We're confident our experience in IPA collaboration will add value to the project. As a full-service provider for railway technology, we can also handle a high share of the work in-house."

LÜBECK–LENSAHN RAIL ALLIANCE

The Lübeck–Lensahn Rail Alliance – consisting of DB InfraGo, RSRG and seven other partners (12 companies in total) – is responsible for implementing the Fehmarn hinterland rail connection from Lübeck to Oldenburg. RSRG will manage the superstructure as an alliance partner in this major project, which will complete the crucial double-track, electrified link in the Scandinavian–Mediterranean corridor between Germany and Denmark.

Over the coming years, the project will involve the construction of 53 bridges and culverts, 35.5 km of noise protection walls, 110 km of track and 109 turnouts. The entire route will also be fully electrified and equipped with railway systems.

Following the joint project alliance kick-off, the planning phase, target price definition, and preparatory works are now in full swing to ensure construction begins on schedule in early 2026. Intensive and exciting challenges lie ahead for all involved, with the shared goal of commissioning the single-track section by 2029 through close, strong cooperation.

Toshe Naumov, Regional Manager North/East Germany, RSRG: "Completing the hinterland rail connection will provide the necessary capacity to sustainably and efficiently handle growing passenger and freight volumes across Europe. We're proud to be part of this landmark project – together with Deutsche Bahn and other experienced partners."

PIONEERING SPIRIT IN OUR VEINS

75 years of mechanised track construction in Austria.

Markus Pfarl
Head of Mechanised Track Construction, Authorised Signatory, Austrian Market

↳ **This Matisa machine (1950) marked the beginning of the mechanised track construction era in Austria.**

AUT INNOVATION, PIONEERING SPIRIT AND SUSTAINABLE SOLUTIONS IN SERVICE OF OUR CUSTOMERS – THESE HAVE DEFINED THE COMPANIES OF THE RHOMBERG SERSA RAIL GROUP SINCE THE VERY BEGINNING. AND IT WAS THIS DRIVE THAT ALSO GAVE RISE TO MECHANISED TRACK CONSTRUCTION IN AUSTRIA. LET'S TAKE A SHORT JOURNEY BACK TO WHERE IT ALL BEGAN.

It's 1950: track construction in Austria is still done by hand. Workers align and tamp the rails using crowbars and simple tools – a task demanding immense physical effort. But even then, Bahnbau Wels (the predecessor to today's company) had a clear philosophy: to continuously improve track construction. The next step came quickly with the importation of two Matisa track machines from Switzerland which were put to work in Austria. This historic moment marked the beginning of mechanised track construction in the country.

The new machines significantly eased the workload, although at the time levelling still had to be done manually, as the machines had no lifting mechanism.

Seventy-five years later, the pioneer of mechanised track construction in Austria – today's Rhomberg Sersa Rail Group – remains the national leader in tamping technology. Since then, the company has not only expanded its range of services but also extended its operations into neighbouring Germany. In addition to tamping machines, its fleet now includes rail cranes, rail grinding machines and logistics vehicles. This forms part of its modern mechanised track construction offering. Then as now, cutting-edge technology and in-depth expertise ensure precise and efficient project execution.

Through close cooperation with its customers, RSRG continuously optimises processes, while technology partnerships drive the ongoing development of machine standards. Looking ahead, the RSRG is committed to setting new benchmarks as an innovative and reliable partner in mechanised track construction.

STRONG GROWTH ON THE RAILS

Rhomberg Sersa Rail Group expands project logistics with a new locomotive, its own wagon fleet and a dedicated logistics team.

Christoph Schmoranzer
Site Manager Halle/Saale, German Market

↳ **Vectron Dual Mode**
Application: Traction for supply and disposal
Drive: Electric (overhead line) and MTU diesel engine
Top speed: 160 km/h
Length: 19.98 m over buffers
Traction power: 2,000 kW electric and diesel combined
Weight: 90 tonnes

DEU SINCE APRIL 2025, RHOMBERG SERSA RAIL GROUP HAS BEEN EXPANDING ITS SERVICES IN GERMANY: AT ITS HALLE/SAALE SITE, THE COMPANY NOW OPERATES AND DISPATCHES ITS OWN RAIL-BASED LOGISTICS. THIS EXPANSION IS A DIRECT RESPONSE TO GROWING DEMAND FOR TRANSPORT AND SUPPLY SOLUTIONS.

A new dual-mode locomotive highlights the capabilities of this new offering. Paired with a proprietary fleet of Rens freight wagons, the loco performs traction services for material supply and removal – primarily within project operations. A five-person logistics team is on hand to manage all rail operations requirements. The new logistics division now offers planning, operational locomotive and train driver services, and transport solutions.

The deployment of the new locomotive at the Halle/Saale site was made possible through cross-location collaboration within the Rhomberg Sersa Rail Group. The vehicle is drawn from the mechanised track construction equipment pool a prime example of how internal collaboration drives the strategic development of service offerings.

From its base in Halle/Saale, the logistics division will be able to quickly and strategically support other sites and construction projects across Germany. This not only supplements the existing logistics infrastructure but also reinforces RSRG's value promise to its customers.

SUSTAINABILITY IN FOCUS

THE NEXT STAGE OF RSRG'S CLIMATE STRATEGY

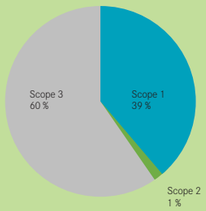
Katharina Willam
Advisor Environmental and Resource Management

TO ALIGN WITH THE PARIS AGREEMENT AND REACH NET ZERO BY 2050, RSRG MEASURES ITS EMISSIONS ANNUALLY, IMPLEMENTS CLIMATE PROTECTION MEASURES AND REVIEWS THEIR EFFECTIVENESS. THIS COMMITMENT CONTINUED THROUGHOUT 2023/24.

RSRG Climate Strategy at a Glance

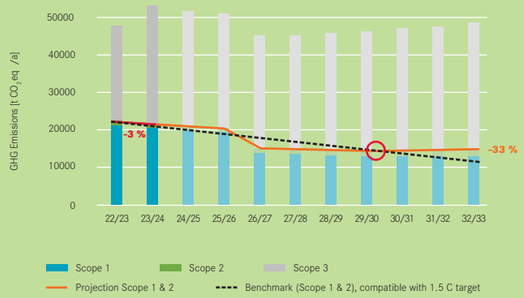
- Greenhouse gas emissions 2023/24: approx. 53,000 t CO_2eq (Scope 1: 39% | Scope 2: 1% | Scope 3: 60%
- Main energy source: Diesel – 6.7 million litres per year
- Projection model includes expected company growth (+) and climate action impacts (–)
- Reduction of approx. 33% CO_2eq in Scope 1 + 2 by 2032/33 (up to 2029/30 in line with the SBTi benchmark, further efforts required thereafter) despite very strong growth
- Main decarbonisation levers: Diesel replacement 69%, Electrification 14%, Energy efficiency measures, Switch to green electricity products and Awareness-building

Figure 1: RSRG greenhouse gas emissions 2023/24: 53,000 t CO_2



Scope 1 includes direct emissions from company-owned sources (e.g. combustion of fuels like diesel).
Scope 2 includes indirect emissions from purchased energy (electricity, heat).
Scope 3 covers all other indirect emissions from upstream and downstream value chain activities (e.g. materials purchased from suppliers).

Figure 2: Comparison of RSRG's actual emissions versus projected emissions to 2032/33



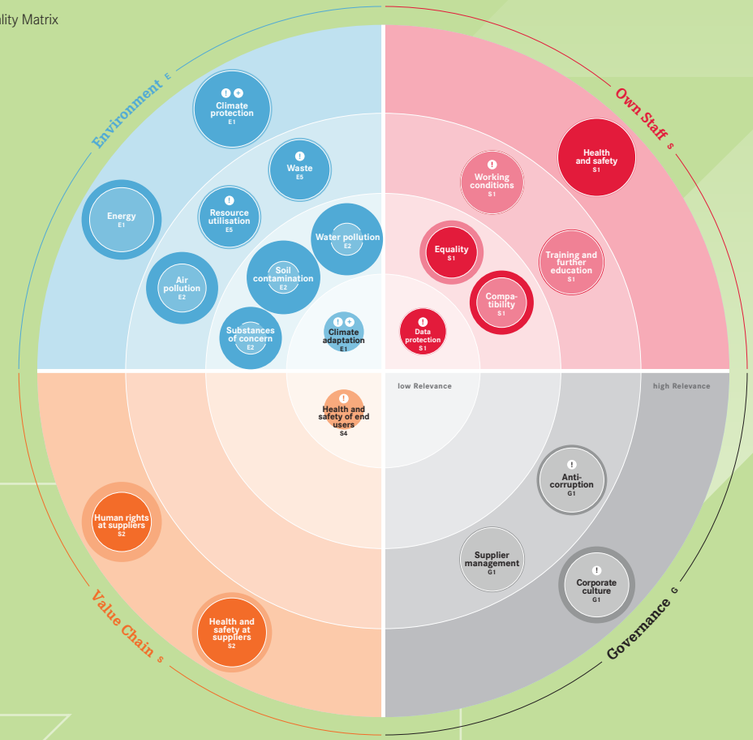
In the 2023/24 financial year, RSRG emitted approx. 53,000 tonnes of CO_2 – around 11% more than in 2022/23 (see Figure 1).

Figure 2 shows the emissions trajectory for Scope 1 & 2 compared to the SBTi benchmark. RSRG is on track to meet the benchmark until 2029/30, but will require further efforts thereafter to remain on the net-zero pathway. For the first time, RSRG's emissions projection also accounts for anticipated company growth – meaning more ambitious measures will be needed in the future.

Climate protection is a long-term journey that requires continual adjustment and new solutions. Despite challenges, we are learning from experience and adapting our measures accordingly. The goal remains clear: net zero by 2050. By continuously developing our strategy and working closely with partners and clients, we are laying the foundation for a more climate-friendly future.

Further details on measures and environmental indicators are available online.

Figure 3: RSRG Materiality Matrix



You can find more information here:

The Double Materiality Assessment

In summer 2024, RSRG conducted a double materiality assessment in accordance with the EU Corporate Sustainability Reporting Directive (CSRD). The assessment identified sustainability-related opportunities and risks and clarified key topics for future strategy development.

In addition to internal workshops, a comprehensive stakeholder survey was conducted, including employees, customers, suppliers and other interest groups – ensuring external perspectives are considered alongside internal priorities.

Many thanks to all who participated in the survey!

Figure 3 presents the results of the materiality analysis, showing all material (and thus reportable) sustainability topics.

RSRG is strategically positioned to advance these key topics, strengthen its sustainability performance, and ensure transparency.

02

DIGITALISATION

DIGITAL TRANSFORMATION OF ALC FILES

A transition from analogue to digital will help improve maintenance output.

Edel Kennedy
Head of Marketing and Communications, Irish Market

IRL THE ROLLOUT OF DIGITAL ALC FILES ACROSS THE IARNRÓD ÉIREANN - IRISH RAIL (IÉ) OTM FLEET IS INCREASING ACCURACY ON KEY MAINTENANCE SHIFTS.

Previously, the process was fully analogue but later moved to ALC measurements being provided on a USB stick which would then be uploaded to the OTM's computer.

The Automatic Guidance Computer (ALC) is vital for the delivery of accurate geometry on the network as it ensures that the lining, longitudinal level and cross level are fit for the required track speed.

However, an entirely digital system is now being introduced by Iarnród Éireann which will eliminate a series of steps and also help to increase the accuracy and efficiency of the work delivered. Working closely together, Iarnród Éireann and Rhomberg Sersa are testing the cloud-based system to improve output.

"We looked at how to improve the system and make it more streamlined," said Darryl Gwilliam, Professional Head of Operations and Continuous Improvement with Rhomberg Sersa in Ireland.

"We've designed a system whereby Iarnród Éireann can drop files into SharePoint. This dedicated secure SharePoint folder is accessible by the machine, meaning data is available instantly both for download and upload of all tamping files. This makes it less likely to have corrupt files but it also means track designers can make last minute changes if for example, it's noticed that the wrong data is inputted.

"The second benefit is that the complete post-work file will be sent to the same place and can be reviewed instantaneously."

By having a repository of data, a picture can then be formed of the network which will assist with the future planning of maintenance work.

During tight possessions for shifts, a digital system is preferable.

The system was tested on one of the tampers and proved successful, with proposals to roll it out to other machines.

Existing Conditions Modelling for the

MATTERTAL TUNNEL

Sandra Furrer
Team Lead Engineering & Design (DRS), Swiss Market

Kevin Schnippkoweit
BIM Modelling & Design (DRS), Swiss Market

Jan Sigrist
BIM Modelling & Design (DRS), Swiss Market

A foundation for future-oriented planning and execution.

CHE THE PLANNED MATTERTAL TUNNEL OF THE MATTERHORN GOTTHARD BAHN (MGB) WILL REPLACE THE EXISTING RAIL LINK BETWEEN TÄSCH AND ZERMATT IN SWITZERLAND, ENSURING A SAFE AND YEAR-ROUND CONNECTION. TO ENABLE EFFICIENT PLANNING, PRECISE EXECUTION AND LONG-TERM OPERATION, MGB IS RELYING ON DIGITAL PLANNING BASED ON THE BIM METHODOLOGY. DIGITAL RAIL SERVICES (DRS) OF RHOMBERG SERSA RAIL GROUP (RSRG) IS PROVIDING HIGH-PRECISION MODELLING AND PREPARATION OF EXISTING CONDITION DATA AS A CRUCIAL FOUNDATION FOR THE PROJECT.

openBIM Approach

Tunnel planning follows openBIM standards to enable interdisciplinary collaboration. The existing condition model data was provided in IFC 4.3 format, allowing seamless integration into the planning process for all project stakeholders. The data requirements were defined using an industry-recognised data catalogue, which greatly contributed to a clear and precise project brief.

Integration of Multiple Data Sources

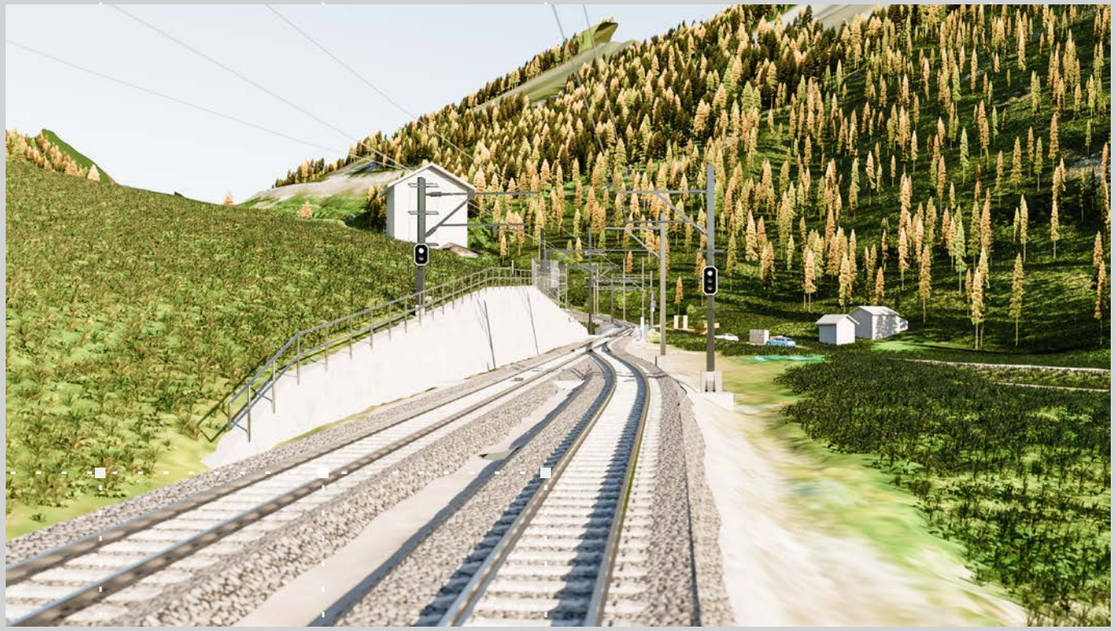
A wide range of data sources was combined for the existing conditions model: laser scanning, drone imagery, archived plans, GIS utility data, and the asset database of the Matterhorn Gotthard Bahn. The core geometric base was formed by georeferenced, high-precision point clouds. GNSS-supported measurements were additionally used to record the exact positions of key utility lines in the model.

The MGB's asset database was specifically used to enrich the model with further information – such as year of construction or condition rating for structural elements. Archived plans and inspection reports helped close geometric data gaps, for example in defining the width of a retaining wall. To ensure transparency and traceability, all data sources used were documented directly within the model.

Collaboration via the Project CDE
All data was stored in MGB's project CDE (Common Data Environment), enabling fully model-based coordination. Change requests were no longer sent by email but were located directly in the model and passed on via defined project interfaces. This enabled more efficient communication and ensured traceable updates exactly where they matter - in the model itself.

A Reliable Basis for Further Planning
The digital existing conditions model provides a dependable foundation for all project stakeholders. It not only supports tunnel design but also offers valuable input for logistics, deconstruction planning, and even for communication with local residents.

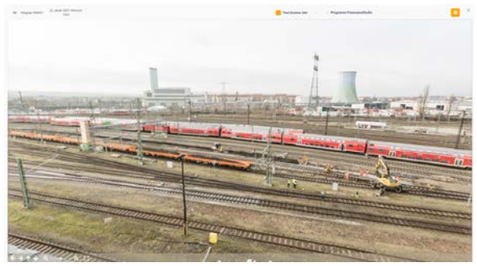
With this work, Rhomberg Sersa Rail Group and its Digital Rail Services division are proud to contribute to future-oriented, precise and efficient project planning and delivery.



360° VIEW OF THE CONSTRUCTION SITE

Revolutionising site documentation.

Stefan Lange
Technician Digital Construction Site, German Market



NEW TECHNOLOGIES SUCH AS 360° CAMERAS, DRONES AND GNSS SURVEY STATIONS ARE OPTIMISING DOCUMENTATION AND SIMPLIFYING BILLING, ANOTHER MAJOR STEP TOWARDS THE DIGITAL CONSTRUCTION SITE.

In today's construction industry, precise and efficient documentation is essential to meet growing demands for transparency and traceability. The introduction of GNSS survey stations (commonly referred to as "site poles") has set a new standard that is transforming construction site documentation.

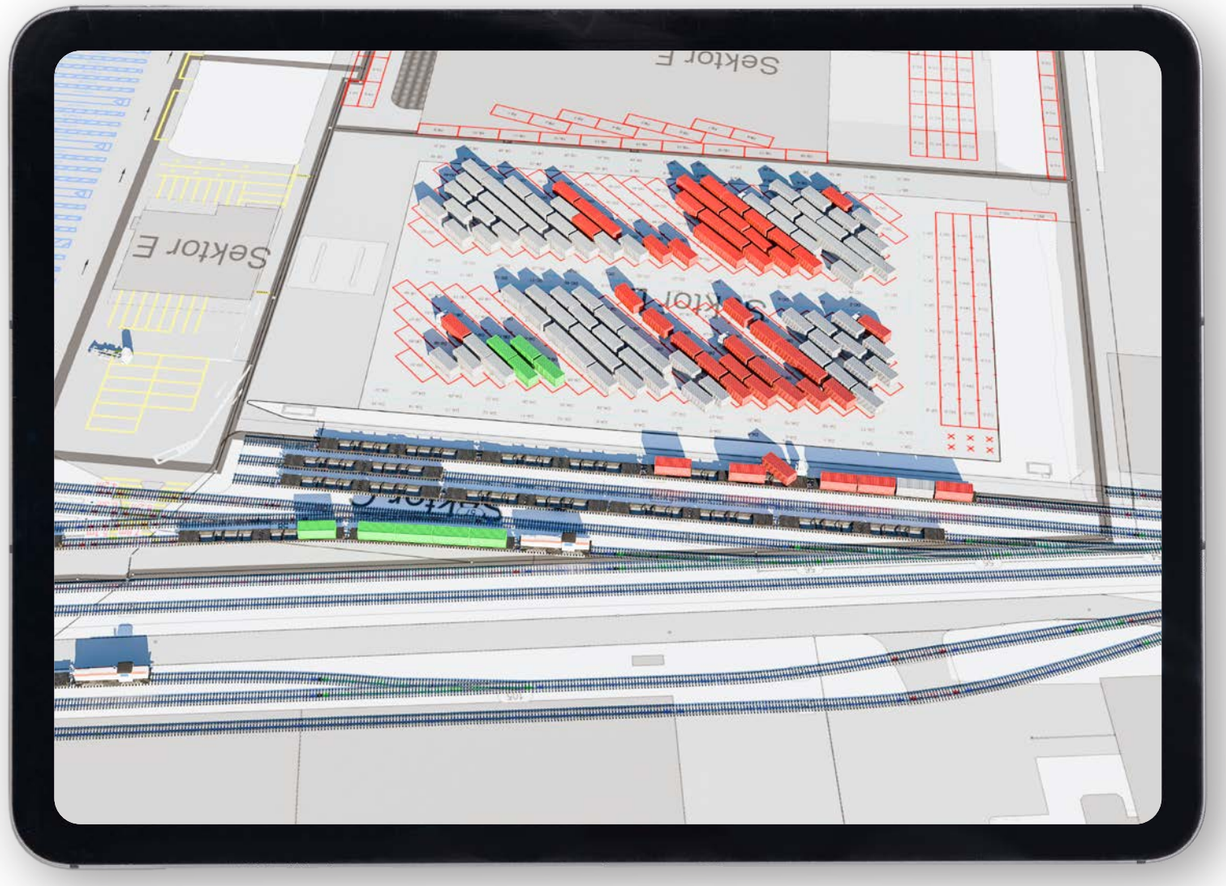
The Dresden-Altstadt project clearly illustrates how the recording, documentation and measurement of various activities can be significantly simplified and optimised. A key element of this innovation is the integration of new 360° cameras. These can be used independently or in combination with the GNSS survey station. The resulting 360° images offer a complete visualisation of the entire construction site and its subcomponents. By uploading the images to the SitePlan software platform, documentation is not only improved but communication between project stakeholders is also enhanced. Thanks to this visual clarity, progress and challenges are visible at a glance, enabling better-informed decisions.

Regular drone flights further contribute to measurement accuracy and traceability. These aerial overviews provide clear and tangible visualisations of construction progress. The combination of 360° cameras, drone technology and centimetre-level point capture via GNSS stations creates a robust data foundation – one that streamlines billing while also strengthening on-site quality assurance.

The construction industry is entering a new era, in which digital solutions are paving the way for a future-proofed and sustainable way of building.

VISUAL CONSTRUCTION AND LOGISTICS PLANNING

Data-driven scheduling and cost planning in a visual context for better project understanding.



Marcel Nolte
Head of Digital Rail Services,
Swiss Market

USING CUTTING-EDGE METHODS FROM GAME ENGINEERING, THE RHOMBERG SERSA RAIL GROUP PLANS AND SIMULATES ALL TYPES OF CONSTRUCTION AND LOGISTICS PROJECTS – FROM EARLY-STAGE FEASIBILITY STUDIES TO DETAILED CONSTRUCTION PROCESS PLANNING FOR EXECUTION.

Every construction project requires a clearly defined target framework for schedule and cost planning. Depending on the planning phase, this framework will vary in its level of detail. A feasibility study will naturally be less detailed than a preliminary or execution-level design – and the accuracy of scheduling and cost planning aligns accordingly.

From the client's perspective, having transparent cost and scheduling information – in all its possible granularity – from the outset is essential. Reliable verification of these parameters provides all project stakeholders with confidence and control over key assumptions throughout the entire lifecycle.

Ultimately, the credibility and traceability of the planning process depend on questions such as: Are we planning based on the right assumptions? Have we identified and accounted for all risks? Can the planned construction measures be implemented exactly as proposed?

Many experts must align on these matters, but each comes with their own perspective and may not fully understand the needs of others. This can result in communication and comprehension gaps that hinder efficient execution planning.

The more complex the construction project, the harder it becomes to consolidate measures in 2D bar charts or linear scheduling diagrams. Poor or insufficient information often leads to poor decisions, especially when stakeholders lack a shared understanding of risks and opportunities.

The RSRG solution

With visual construction and logistics planning, RSRG is ideally equipped to meet client needs, support a common understanding of the project, and provide a sound basis for decision-making. From early-stage rough planning to detailed execution planning, all schedule- and cost-relevant data – along with many other parameters – can be integrated and made accessible to all stakeholders.

The visual representation is just one part of the added value. By linking planning model data, schedule data, cost figures and other project parameters, a comprehensive data set is created for each construction task – one that can be leveraged in multiple ways. Traditional schedules, cost breakdowns, resource allocations, material flows, and other vital project data can be calculated and analysed at any time.

Unlike conventional visualisations that simply depict completed schedule plans, RSRG's systems enable intelligent project simulations with real-time insight into the effects on timelines, costs, or even CO_2 emissions.

These data-driven methods allow us to create detailed simulations of various construction process scenarios, as well as early-stage planning and phasing, complete with cost estimates. High-quality visualisations for information or presentation purposes can also be generated with relatively low effort.

Clients also benefit from comprehensive planning and simulation of handling logistics even when space or capacity is limited. In such cases, RSRG helps identify optimisation opportunities and supports the efficient design of handling facilities.

03

MACHINES

WELCOME TO THE FLEET M612

New Innovative Resurfacing Machine for Rhomberg Sersa in Australia.

Scott Richardson
General Manager Rail Operations, Market Australia

AUS IN APRIL, RSRG HAD THE PLEASURE OF OFFICIALLY WELCOMING RESURFACING MACHINE M612 09-2X-4X4/4S DYNAMIC TO THE AWARD WINNING RESURFACING TEAM IN AUSTRALIA.

With it, Rhomberg Sersa is introducing the first machine of its kind in the Southern Hemisphere, designed to deliver unparalleled efficiency across all operations. Capable of achieving speeds of 1700 metres per hour on plain track and 700 metres per hour through turnouts, it also features advanced dynamic stabilisation for both plain track and turnouts, ensuring smooth, reliable performance.

The order was placed in March 2022, with the machine arriving in the country December 2024. Throughout the process, RSRG and the Original Equipment Manufacturer worked closely together to tailor the machine to our specific needs, ensuring it delivers maximum value, performance, and reliability for our customers.

With both static and dynamic testing now complete, and a test run on track during a ARTC Hunter Valley possession in early 2025, the machine is now in service. Its arrival has marked a significant milestone, as it leads the way for future innovations in the fleet and sets a new standard in the market.

The official commissioning and naming of M612 took place as part of Rhomberg's 20 year celebrations week in April 2025.

"The continued investment in people and machines is the key to our success and makes us what we are today, the market leader in Resurfacing"

Scott Richardson
General Manager
Rail Operations

IRON ORE PELLET CLEAN-UP PROJECT

Innovative Track Cleaning on Minnesota's Iron Range.

Steve Atherton
COO, North American Market

USA THE "IRON RANGE" REFERS TO A REGION IN NORTHERN MINNESOTA KNOWN FOR ITS RICH IRON ORE DEPOSITS, PRIMARILY LOCATED IN THE MESABI RANGE. THE MINES IN THE AREA ARE SERVICED BY ONE OF THE SIX MAJOR CLASS 1 RAILROADS IN NORTH AMERICA AND PLAY A PIVOTAL ROLE IN TRANSPORTING MILLIONS OF TONS OF IRON ORE PELLETS ANNUALLY ACROSS THEIR NETWORK.

Due to older rail cars leaking pellets onto the tracks and the surrounding areas, the impact has been both economic and environmental and has also resulted in the track becoming difficult to inspect.

In 2023, Rhomberg Sersa and its North American partner Remcan Projects proposed a solution that comprised off Rhomberg Sersa's Material Handling and Distribution Train (MHDT), which is a consist of ten MFS 40 cars and two Power Wagons. MHDT is a highly flexible piece of maintenance-of-way equipment designed to load, store, transport, and unload materials. A Kershaw track cleaner, which is commonly used in North America, would be employed to sweep and transfer the pellets into the MHDT.

In June 2024, Rhomberg Sersa and Remcan conducted a 30-day concept trial of the yard cleaner and MHDT solution. The trial demonstrated that the system was both effective and efficient, cleaning over 2 miles of track in a single eight-hour shift.

The railroad was pleased with the methodology and the quality of the results but had concerns with the operational speed of the Power Wagons as their design limited them to a maximum speed of 2 mph, restricting the process of transferring and unloading cars.

Through collaboration with colleagues within RSRG in Germany and Australia, the North American team developed a modification to the traction power system, which was implemented during the winter and spring of 2025. Initial testing was carried out in April with promising results. A second 30-day-trial followed in April and May.

Subject to the railroad's approval and acceptance the intent is to agree a long-term multi-year contract to undertake the cleaning of track across the Iron Ore Range.

SUSTAINABLE TECHNOLOGY: BATTERY POWER FOR TUNNEL AND TRACK WORKS

Emission-free batteries for grinding machines, shearing tools and more.

Patrick König
Head of Welding Operations, Swiss Market

EFFICIENT, ENVIRONMENTALLY FRIENDLY AND ERGONOMIC – THE FUTURE OF TUNNEL CONSTRUCTION IS BATTERY-POWERED. SWITCHING FROM PETROL TO BATTERY OPERATION OFFERS NUMEROUS ADVANTAGES.

Thanks to a specially designed conversion kit, conventional petrol-powered MP6 grinding machines can be retrofitted for battery operation. A single battery charge enables up to six weld seams to be ground – with a charging time of only 90 minutes. This ensures the machines retain their familiar ergonomic design, while significantly reducing emissions, noise and vibrations.

The system is highly flexible and can be expanded as needed. The shearing tool, for example, runs on the same battery packs, eliminating the need for additional chargers or batteries. There are also compatible lamps and large battery units available, enabling fully emission-free operations in tunnel environments.

Another innovation is the new Envirofilter system. It efficiently filters welding fumes and, unlike the previous single-use system, can be reused up to 25 times. This helps reduce waste and conserve resources.

The benefits are clear: lower emissions mean improved air quality for workers, lighter battery-powered devices make the work easier, and sustainable technology supports more environmentally friendly construction sites. Battery technology is an important step toward a modern and sustainable future for tunnel and track construction.

OVERHAULS EXTEND WORKING LIFE OF OTMS

A long life for track-laying machines.

Hans-Jürgen Steinbrecher
Head of Rolling Stock Maintenance, Austrian Market

Tim Wellschmidt
Head of Maintenance & Trading, Welding Engineer, German Market

AUT DEU IRL AN OVERHAUL IS AN ECONOMICAL AND SUSTAINABLE METHOD OF EXTENDING THE SERVICE LIFE OF A TRACK MAINTENANCE MACHINE. THE RHOMBERG SERSA RAIL GROUP OFFERS THIS TO ITS CUSTOMERS IN ITS WORKSHOPS IN SPREMBERG AND WELS.

During this process, the machine is completely dismantled andthe parts are refurbished or replaced by our team of machine experts. The machine is then reassembled. Compared to purchasing a new machine, this method delivers a 'new' machine with significantly less capital investment, a faster timeframe, reduced personnel training costs and the elimination of authorisation procedures. An overhaul not only increases performance and safety, but also improves energy efficiency - an important step towards reducing operating costs and environmental impact.

The workshop in Wels is currently carrying out the first major overhaul on an 09-32 CSM for a German customer. The hydraulic system, pneumatics, cabs, tanks, gearboxes, wheelsets and the satellite including the lifting and levelling unit are being overhauled. The electronics are also upgraded: Consoles, distribution boxes and cables, as well as control system components are renewed. After around a year of intensive work, the machine can be put back into operation this autumn - ready for many more years of use. The Spremberg site has been successfully specialising in basic overhauls for eight years and has extensive experience with a wide variety of machine types. In recent years, a Unimat 08-475 4S tamping machine has been subjected to this procedure in the workshop: welding work on the machine frame, modernisation of the drive and renewal of all hydraulic and electrical components.

Last year, a two-way tamping machine 08-275 ZW was rebuilt and modernised for a Polish customer. It was given new corrosion protection and a new paint job as well as a modern TCD 7.8 L6 diesel engine with particulate filter and AdBlue system for greater performance and efficiency. The electrical, hydraulic and pneumatic systems were completely renewed. Two air-conditioned cabs and ergonomic control panels increase operating comfort. The measuring system, including the control computer and recording system, has been brought up to date. An SSP 110 SW high-speed ballast levelling machine from our own company is currently undergoing a major overhaul. The electrics, pneumatics and hydraulics are being completely overhauled and the sweeping system renewed. The machine is being given a new colour scheme and the latest engine technology. Control components will also be replaced. It should be ready for many more years of use by the winter.

The Rhomberg Sersa Rail Group also recognises the high value of a comprehensive machine overhaul.

Together with the site in Spremberg, the Rhomberg Sersa Rail Group is carrying out major overhauls on five machines in Ireland on behalf of Iarnród Éireann - Irish Rail (IÉ). The third machine is currently in the workshop. 'The general overhauls and complete refurbishment of components are crucial - they not only increase reliability, but also significantly extend the service life of the machines,' confirms Robbie Mullen, COO of Rhomberg Sersa Rail Group in Ireland. 'These far-reaching measures enable us to use the machines for much longer.'

"The general overhauls and complete refurbishment of components are crucial - they not only increase reliability, but also significantly extend the service life of the machines."

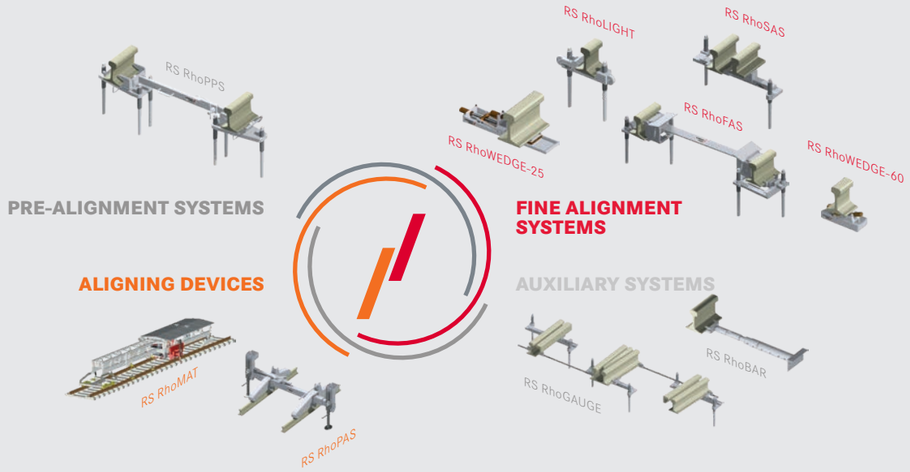
Robbie Mullen
COO, RSRG Ireland

04

PRODUCTS

PRECISION IN MOTION

Modular lifting and aligning systems for every track construction challenge.



Hannes Mathis
Project Manager R&D,
Project Business

Marko Sejnjanovic
Project Engineer,
Project Business

FOR OVER TWO DECADES, THE LIFTING AND ALIGNING SYSTEMS DEVELOPED BY RHOMBERG SERSA RAIL GROUP HAVE BEEN IN USE WORLDWIDE – BOTH IN OUR OWN PROJECTS AND BY CLIENTS AND INFRASTRUCTURE OPERATORS.

Their unique selling point: stress-free track alignment and free passability under axle loads of up to 2 tonnes, made possible by aligning directly at the rail. This combination ensures maximum efficiency and flexibility on construction sites around the globe.

As one of RSRG's core products in the field of track construction, the systems undergo continuous and systematic development – always with a focus on the specific requirements of projects and clients.

A current example is the expansion of the RS RhoSAS turnout alignment system. For a local transport project in Nuremberg, the system was enhanced with modular track gauge rods. Despite the very low installation height of approximately 35 mm, it allows for highly precise positioning and alignment of the turnout at individual support points without needing permanent gauge rods.

The RSRG lifting and aligning system family includes a total of four fine alignment systems for tracks and turnouts, supplemented by a pre-alignment system and various auxiliary components such as side supports and gauge rods. Thanks to this modular approach, an optimal solution can be offered for almost any track system with free rail access.

The range of alignment aids extends from simple manual jigs to tachymeter-controlled alignment robots.

These high-tech solutions from RSRG significantly simplify the alignment of track panels. However, one thing remains true: the experience and know-how of the professionals operating these systems continue to be key to their success.

AUTONOMOUS GROUND PENETRATING RADAR

Tens of thousands of kilometres of track set to be surveyed autonomously.

Edel Kennedy
Head of Marketing and Communications, Irish Market

Pete Goff
Operations Manager - Technical Management, North American Market

RHOMBERG SERSA IS DEVELOPING A GROUND PENETRATING RADAR (GPR) SYSTEM WHICH WILL OPERATE AND GATHER DATA AUTONOMOUSLY.

The team in North America has been carrying out GPR surveys since 2008 and currently collects around 100,000 miles worth of data annually.

This data has multiple uses, including planning where ballast cleaning will take place. The data is also used by the regulator, the Federal Railroad Administration (FRA), to send out safety alerts about sections of the track which could potentially be unsafe.

Now Rhomberg Sersa – in conjunction with its partner Zetica Rail – has launched the first step of what will be a totally autonomous GPR system. When fully operational, the system will gather and process data from tens of thousands of miles of track each year.

“We are currently building the system for Canadian National Railways,” said Pete Goff, Operations Manager-Technical, with Rhomberg Sersa in North America.

“Ultimately, we will have an inspection system that we can independently power up and run autonomously and send track condition-based metrics and safety reports to designated personnel for verification / action. The system is also designed to interact with other onboard inspection systems such as track geometry, vision, vertical track interaction etc. When any of these systems identify an issue that exceeds predefined safety and quality limits, a ‘trigger’ is sent, and a report is generated at each location to provide a comprehensive report on the track condition. This provides a defect and root cause assessment.”

The ‘trigger’ can also be preset to look for changes at locations where repeat issues occur or to inspect and look for changes in conditions.

Commissioning and live testing of the system was completed this summer. In the first year the system will inspect tens of thousands of miles of track and provide triggered safety reports. In addition, 2,000 miles of captured data will also be ‘back office’ processed to support maintenance planning and investment data. It will also help set a baseline across key track corridors that will allow reporting of change and degradation rates. In year two the number of miles processed will be expanded to 5,000 miles and by year three all reporting and system inspection functionality will be autonomous, and available to run 24hours a day.

“This kind of data is very valuable,” said Pete. “Some of our customers will only plan ballast work where they have GPR data.

“Right now, we collect more data than we process but we are processing more and more all the time.”

GPR is also being utilised by the team in Ireland after it won a competitive tender with its client, Iarnród Éireann - Irish Rail (IÉ) to carry out a GPR survey of the entire network.

The national survey is part of Iarnród Éireann’s continuing programme of maintenance works and their growing use of technology to drive improvements.

The GPR survey was carried out in late 2024 by Rhomberg Sersa in conjunction with Zetica.

This project has provided a detailed picture of the track structural condition and will assist the national rail provider in developing their future track maintenance requirements.

Zetica, the partner on both projects, is a global leader in the provision of trackbed condition measurement and asset mapping services to freight and public transport railroad companies.

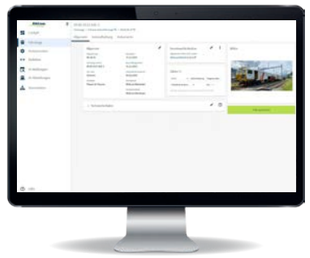
RAILIUM: “ALL IN” FOR TRACK CONSTRUCTION COMPANIES

Digitalisation is advancing in the railway construction industry.

Emily Zemmrich
Software Project Lead, RAILium

Christoph Schürz
Product-Segment-Coordinator

RAILium. Machine Management



↳ **RAILium**
Provider: RSRG und BOOM GmbH
Functions: Deployment and transport planning, resource and availability management, maintenance and workshop operations

RAILIUM IS THE COMPREHENSIVE SOFTWARE SOLUTION FOR TRACK CONSTRUCTION COMPANIES. THE GOAL: MAXIMUM EFFICIENCY IN THE OPERATION AND MAINTENANCE OF TRACK CONSTRUCTION MACHINERY.

Developed by RSRG and BOOM GmbH, this all-in-one solution provides tailored, modular, and reliable digital tools for operators of track construction machines, as well as vehicle manufacturers, maintenance providers, and other service companies.

Modern track construction companies face numerous challenges: growing compliance and reliability standards, complex legal regulations, extensive documentation requirements, and increased liability risks. At the same time, they must ensure high levels of personnel and machine availability, be flexible in adapting to last-minute changes, and meet rising employee expectations for communication and work-life balance.

Until now, it was difficult to find suitable software for personnel, asset, and workshop management in the rail construction sector. In-house developments are increasingly reaching their limits, and the shortage of experienced staff only adds to the pressure.

This is where RAILium comes into play. Originally rolled out within Rhomberg Sersa Rail Group, the powerful software suite is now being adopted by an increasing number of forward-thinking operators of track construction machinery.

And it’s no surprise: RAILium connects deployment and transport planning, resource and availability management, and maintenance and workshop operations on a single platform. The benefits include improved efficiency, regulatory compliance, user-friendliness, automated data quality, adaptability, and easy integration into existing IT systems – and the list goes on.

What’s next? The interdisciplinary team is currently implementing the solution at new platform partners H. F. Wiebe and Spitzke SE, while simultaneously developing new features to further boost the efficiency of innovative track construction companies.

PROGRESS MONITORING ON CONSTRUCTION SITES

Q-tainer helps monitor and document activities on large-scale sites.

Torsten Bode
Head of Group Products and Innovations

Stefan Potocan
Head of Product Management

Source: © Deutsche Bahn AG / Oliver Lang

↳ **Q-tainer**
Provider: RSRG and Dätwyler IT Infra
Features: Edge computing hardware, 5G campus network, AI/machine learning models, construction intelligence
More information: www.rhomberg-sersa.com/en/services/q-tainer

ON LARGE-SCALE CONSTRUCTION SITES, CONTINUOUS MONITORING OF PROJECT PROGRESS INVOLVES SIGNIFICANT EFFORT. A SEMI-AUTOMATED SYSTEM CAN HELP RECORD THE CURRENT STATE OF CONSTRUCTION WHILE CONSERVING RESOURCES.

As part of Deutsche Bahn’s innovation programme DB Mindbox, the Q-tainer qualified as a promising innovation for the 100-day challenge. During this period, the Q-tainer project team had the opportunity to collaborate with DB InfraGO to discuss potential future applications and further develop the solution.

The use case developed during this initiative tackles one of the greatest challenges of linear construction sites: timely comparison of planned progress with actual on-site development. The system stands out by using stationary cameras and drone imagery to monitor large construction areas. The recorded actual data can be transmitted and analysed automatically and compared with the planned timeline. Construction monitoring teams and site management can track progress in real time and take targeted action in the event of deviations. This not only increases efficiency but also helps prevent costly disruptions and delays to the construction process.

To further develop the Q-tainer through real-world application and demonstrate its full potential, the project team is currently coordinating with DB InfraGO for deployment on a linear construction site – for example, during the station redevelopment in Büchen near Hamburg, part of the high-performance corridor project between Hamburg and Berlin.

The plan is to monitor and document the construction of noise barriers along a track section over a five-month period. In addition, the movement of heavy construction equipment used on site is also to be recorded. Looking ahead, the Q-tainer offers the potential to take construction monitoring and collaboration among various stakeholders to a new level in terms of effort, quality, and data currency.

05

ON SITE

HAWKESBURY RIVER BRIDGE

Rhomberg Sersa Rail Group modernises heritage-listed bridge with customised technology.

Bart Kelly
Steelwork and Infrastructure Operations Manager, Australian Market

Projekt Hawkesbury River Bridge
Location: Sydney, Australia
Client: Sydney Trains
Contract: Design, fabrication, and installation of a new 800 m maintenance walkway

AUS **RHOMBERG SERSA RAIL GROUP DELIVERED A MAJOR UPGRADE TO THE ICONIC HAWKESBURY RIVER RAIL BRIDGE, A VITAL PART OF THE SYDNEY TRAINS NETWORK.**

Commissioned by Sydney Trains, RSRG's key task involved designing, fabricating, and installing a new 800-metre walkway along the down side of the bridge. This enhances safety by providing a designated path outside the rail danger zone and accommodates relocated high-voltage cables underneath.

The project presented unique challenges, including maintaining precise measurements and avoiding clashes with the bridge structure. RSRG's innovative design ensured seamless integration of the walkway, minimising interference with main bridge elements. Custom lifting equipment—such as a jib and lifting frame that operated from barges—enabled installation from the water, outside of rail possession times, dramatically accelerating the project timeline.

Steel components were fabricated at RSRG's Horsley Park facility, then galvanised and painted for durability. RSRG also designed and installed two new maintenance gantries along the bridge's underside, replacing a single outdated gantry. These new gantries provide improved access for inspections and maintenance, and can open and close for passage through the piers. Like the walkway, they were built in-house and installed from barges while trains remained operational.

Additional works included major steel replacements, runway beam strengthening, bridge bearing upgrades, and high-voltage cable rerouting.

These efforts reflect RSRG's engineering expertise, innovation, and commitment to quality—delivering results on time, on budget, and with minimal disruption to Sydney's rail services.

BUILDING THE FUTURE

The Western Sydney Airport Line Project.

Amber Bellamy
Marketing and Communications Manager, Australian Market

Bauen unter Betrieb - effiziente Termin- und Raumplanung für einen reibungslosen Bauablauf.

↳ **Project Western Sydney Airport Line**
Assignment: 44 kilometres of Slab Track

AUS RHOMBERG SERSA RAIL GROUP IS PLAYING A PIVOTAL ROLE IN THE CONSTRUCTION OF THE WESTERN SYDNEY AIRPORT RAIL LINE, A HIGH-CAPACITY, DRIVERLESS METRO LINE THAT WILL CONNECT PASSENGERS TO THE NEW NANCY-BIRD WALTON AIRPORT AND FOSTER GROWTH IN WESTERN SYDNEY.

The rail line will significantly reduce travel time to the airport, providing a fast, reliable, and efficient transport option.

As the contractor for this ambitious project, RSRG is responsible for building 44 km of continuous slab track, the largest of its kind in Australia. The use of slab track technology, which offers enhanced stability, durability, and lower maintenance costs compared to traditional ballast systems, is a key innovation in the project. RSRG has designed and deployed four high-production concrete placement units to install the track, ensuring efficiency and precision in the construction process.

The project also incorporates sustainable practices, such as reusable formwork systems, which help reduce costs and environmental impact. The rail line will pass through tunnels, viaducts, and varying terrains, presenting challenges that RSRG is overcoming with advanced engineering solutions.

This rail line is more than just a transport project; it is set to be a catalyst for economic growth in Western Sydney. It will enhance connectivity, benefiting local businesses and residents, and supporting the region's rapid development. RSRG's involvement in this landmark project is a testament to its expertise in large-scale infrastructure, positioning it as a leader in Australia's rail construction industry. The Western Sydney Airport Line is set to become a cornerstone of Sydney's transport network and a milestone for RSRG.

TRACK RENEWAL IN THE LÖTSCHBERG SUMMIT TUNNEL

Construction during operations – efficient scheduling and spatial planning for smooth project execution.

Sebastian Klasen
Construction Manager, Swiss Market

Dominko Bilic
Project Manager, Swiss Market

Sophie Schlögl
Technical Expert (DRS), Swiss Market

↳ **Projekt Lötschberg Summit Tunnel**
Location: Bernese Oberland – Valais, Switzerland
Client: BLS AG
Scope: Conversion of 1.5 km of double track with four turnouts from ballasted track to slab track
Construction phase: April to June 2024

CHE THE LÖTSCHBERG SUMMIT TUNNEL IN SWITZERLAND IS THE CENTERPIECE OF THE LÖTSCHBERG MOUNTAIN LINE FROM SPIEZ TO BRIG. ON BEHALF OF BLS AG, RSRG CARRIED OUT THE CONVERSION OF A 1.5 KILOMETRE DOUBLE-TRACK SECTION WITH FOUR TURNOUTS FROM BALLASTED TRACK TO SLAB TRACK.

The Lötschberg Summit Tunnel is a 14.6 kilometre railway tunnel which opened in 1913. It connects the Bernese Oberland with the canton of Valais and plays a central role in BLS's car transport service. At peak times, up to 180 car trains pass through the tunnel each day.

Due to the importance of the tunnel for railway traffic, the tracks in the construction section were renewed under partial closure or single-track operation. Track 100 was converted between early April and late June 2024, and track 200 between early July and the end of September of the same year. Total closures took place four to five nights per week depending on the holiday season, each from 01:00 to 05:00.

The challenge in the 1,500-metre-long section with four turnouts lay primarily in the short construction windows of only three months per track. Work was therefore carried out in two shifts with three teams on a 10-day cycle.

The existing tracks were dismantled at night using road-rail excavators, and the ballast was removed during the day using MFS excavators and traction units, allowing the section to be cleared within one week.

Due to the confined space, precise work with MFS crawler units was required. Because of these spatial constraints, the new turnouts (LVT-EW VI-900-1:19) were also installed using tunnel-based logistics and assembled directly on-site using road-rail excavators.

Despite all the challenges, the tracks were successfully reopened to traffic on schedule and to the full satisfaction of the client. The necessary clearance gauge checks were carried out efficiently using state-of-the-art technologies by RSRG's Digital Rail Services.

INNOVATION IN THE HAUENSTEIN TUNNEL

The “zero tamping” as a new milestone – precision, teamwork and efficiency in rail construction.

Stefan Schälchli
Head of Track Construction Machines (standard gauge), Swiss Market

Ali Haider
Surveying Technician (DRS), Swiss Market

↳ **Project Hauenstein Tunnel**
Location: Basel–Olten, Switzerland
Scope: Installation of rails and sleepers

CHE IN A PIONEERING PROJECT BY THE RHOMBERG SERSA RAIL GROUP, A “ZERO TAMPING” PROCESS WAS IMPLEMENTED FOR THE FIRST TIME – AN UNCONVENTIONAL SOLUTION SETTING NEW STANDARDS IN RAIL CONSTRUCTION.

Zero tamping is a type of “pre-tamping” that enables the creation of the final track geometry without pre-ballasting. The track panel is laid directly onto the tunnel floor, and once ballast is added, it is brought into its correct position through three tamping and two stabilisation passes. This innovative approach ensures precise track geometry from the first deployment of tamping machines, setting a new benchmark for optimal results.

On a defined section of the Hauenstein Tunnel, tracklayers and the Digital Rail Services team of RSRG installed rails and sleepers with millimetre accuracy using a measurement trolley, so that only minimal corrections were required during tamping. This helped avoid damage to the adjacent cable duct due to limited working space during the process. The track was stabilised over 2.5 kilometres after both the first and second tamping passes.

The true success factor in this project was seamless teamwork. For the first time, a construction site was managed from planning to execution as one integrated group. All participants – technical departments, site managers, foremen and machine operators – were involved from the beginning and carried out detailed inspections and planning sessions.

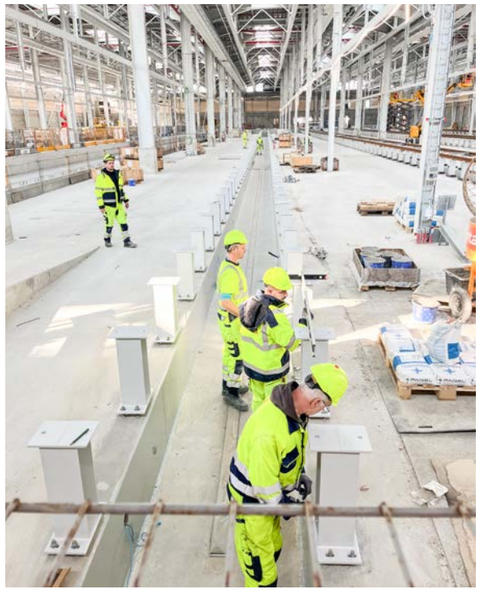
This integrated approach paid off. Despite some planning uncertainties, the project was completed two shifts ahead of schedule. RSRG will continue to work on the Hauenstein Tunnel in five further stages until 2028.

One key takeaway from the project was the importance of continuous optimisation. All insights and lessons learned are being incorporated into the planning of future construction phases to further increase efficiency.

GREENER TRACKS IN THE NORDICS

Pioneering Sustainable Rail Infrastructure.

Mariusz Kalinowski
Business Development Manager, Project Business



DNK RHOMBERG SERSA RAIL GROUP IS DRIVING SUSTAINABLE RAIL INNOVATION, DELIVERING PRECISION-ENGINEERED TRACKS THAT POWER DSB’S GREEN TRANSITION.

Since 2023, RSRG is involved in Danske Statsbaner’s (DSB) ambitious plan to transition the Danish railway system towards a more sustainable future. With extensive expertise in ballastless track construction, RSRG is building tracks of three new eco-friendly workshops in Copenhagen, Næstved, and Aarhus. These facilities are essential for the maintenance of DSB’s new electric trains, marking the transition from diesel to electric operations. This transformation will significantly reduce emissions and contribute to sustainable public transportation, moving hundreds of thousands of passengers daily while alleviating congestion issues. To maintain and service the new fleet, DSB is constructing and upgrading workshops at strategic locations to optimize efficiency and future-proof its operations.

The work of RSRG began in 2023 in Copenhagen with the installation of the first tracks in the workshop. In 2024, RSRG continued in Næstved, which, with its size and capacity, will serve as a key hub for DSB’s new electric train fleet. In 2025, RSRG moved on to Aarhus, ensuring that this workshop is also equipped with a robust and sustainable track structure.

In close collaboration with M.J. Eriksson A/S, which is responsible for track work outside the depots, RSRG is committed to a comprehensive approach to the project – a clear commitment to quality, efficiency, and partnership-based execution. Because precision is the key to success. And RSRG delivers top-level solutions that actively support DSB’s vision of a sustainable railway.

“We deliver high-quality solutions that support DSB’s vision of a sustainable railway, and are proud to contribute to this transformation. We look forward to continuing our growth in the Nordics with innovative and environmentally friendly solutions.”
Mariusz Kalinowski

REFURBISHMENT OF THE WIPKINGEN TUNNEL

Challenges and lessons learned in tunnel rehabilitation. From vault repairs to track renewal.

Sven Meyer
Site Manager,
Swiss Market

Ali Haider
Surveying Technician
(DRS), Swiss Market

Sophie Schlögl
Technical Expert (DRS),
Swiss Market

CHE THE REFURBISHMENT OF THE WIPKINGEN TUNNEL PRESENTED THE RHOMBERG SERSA RAIL GROUP TEAM WITH A DEMANDING TASK - TIGHT TIMEFRAMES, ONGOING RAIL OPERATIONS, AND COMPLEX TECHNICAL REQUIREMENTS. HOWEVER, THANKS TO INNOVATION, PRECISE PLANNING, AND STRONG COLLABORATION, THE PROJECT WAS A SUCCESS WHILE ALSO OFFERING VALUABLE INSIGHTS FOR FUTURE WORK.

The Wipkingen Tunnel is a vital part of the railway infrastructure in the Zurich region. Since its original mining-style construction in 1856, it has undergone several rounds of refurbishment, most recently in the late 1980s, which included an extension with a covered section. Once again, it was time to carry out essential repairs which included restoring the existing masonry vault, renewing the track structure, and integrating a modern 132 kV cable system beneath the existing line. Rhomberg Sersa Rail Group was commissioned as the general contractor to carry out the works.

This challenging and fascinating project required full commitment both in planning and on-site execution. Various hurdles – from logistical bottlenecks to unforeseen geological conditions – had to be overcome. Dynamic and flexible working practices, combined with ongoing technical exchange on site, led to a successful outcome.

From the planning stage, it was clear that the biggest challenge would be working under live rail traffic. The tunnel had to remain operational throughout the works, which demanded precise construction management and close coordination with the SBB's technical departments.

Thanks to innovative solutions, progress was ensured despite these constraints. Modern shotcrete methods were used to stabilise the vault structure sustainably. The installation of the fixed track system in the double-track tunnel was split into two independent stages. This setup allowed the RSRG Digital Rail Services team to implement targeted improvements. For instance, the in-house lifting system was refined and optimised.

The project also served to strengthen international collaboration within the company.

A key success factor was the close cooperation between all parties involved. Internally, the team collaborated seamlessly, while externally they worked closely with the client, planners, and safety experts to develop the best solutions for each challenge. Especially critical was the coordination with SBB specialists to minimise disruption to train services.

After nearly one and a half years of intensive work, the Wipkingen Tunnel was completed in December 2024. Now upgraded to the latest technical standards, it offers passengers a modern and reliable infrastructure.

For the Rhomberg Sersa Rail Group, the project was both educational and rewarding – a clear reminder that successful construction projects depend on precise planning, innovative techniques, and strong teamwork.

With the completion of this project, another chapter in the tunnel's history comes to a close while laying the foundation for safe and efficient rail operations for decades to come.

TAILOR-MADE TECHNOLOGY

Renewal of electrical power systems in the Horchheim Tunnel.

Tim Wende
Site Manager for Electrical Engineering, Project Business

↳ **Project Horchheim Tunnel**
Location: Koblenz, Germany
Scope: Installation of tunnel safety lighting, power supply at the south and north portals, power connections for signal boxes, electric shaft heaters

DEU **AS PART OF THE COMPREHENSIVE REFURBISHMENT OF THE HORCHHEIM TUNNEL NEAR KOBLENZ ON THE RHINE, RHOMBERG SERSA RAIL GROUP WAS COMMISSIONED TO RENEW THE TUNNEL'S ELECTRICAL POWER SYSTEMS.**

The contract included the installation of tunnel safety lighting, power supply systems at the south and north portals, power connections for the signal boxes, and electric shaft heaters.

A key element of the project was the safe drainage of mountain water (seepage water). This water is collected on both sides of the tracks via a longitudinal drainage system and directed towards the northern tunnel portal. For regular maintenance and inspection, drainage flushing shafts are located along the route. These shafts must remain filled with water to prevent the build-up of sediment or solids. This is ensured by a specially designed overflow mechanism. To prevent the water from freezing during winter, electric heaters had to be installed. RSRG, in collaboration with the supplier, developed bespoke heating solutions for this purpose.

Several challenges had to be addressed during implementation:

- **Individual heating requirements per shaft:** Due to the tunnel's incline and varying distances of the shafts from the tunnel portal, water levels differ, requiring each shaft to have a specifically adjusted heating capacity.

- **Comprehensive monitoring per shaft:**
  Level monitoring: Prevents the heater from operating if the water level is too low, avoiding dry running.
  Temperature limiter: Switches the heater off if the maximum temperature is exceeded.
  Temperature controller: Regulates switching on and off of the heater to maintain optimal temperature.

Thanks to these customised solutions, the shafts can be reliably and efficiently heated, ensuring the functionality of the drainage systems even in winter.

OPTIMISATION THROUGH PERFECT TEAMWORK

Insights into the U3 underground project in Nuremberg.

Jens Schülke
Project Manager, Project Business

Hannes Birkle
Site Manager, Project Business

↳ **Project Nuremberg U3 Underground Line**
Location: Nuremberg, Germany
Team: Public Transport, Digital Rail Services (DRS) and Machinery Department
Scope: Track construction with 3,800 m of slab track, 9 turnouts, conductor rail

DEU **WORK ON THE U3 LINE IN NUREMBERG IS PROGRESSING RAPIDLY. THANKS TO CLOSE COLLABORATION BETWEEN THE PUBLIC TRANSPORT AND DIGITAL RAIL SERVICES (DRS) TEAMS AS WELL AS THE MACHINERY DEPARTMENT OF THE RHOMBERG SERSA RAIL GROUP, TRACK CONSTRUCTION IN THE TUNNEL SECTION OF THE U3 WAS CARRIED OUT SWIFTLY, PRECISELY, AND TO THE HIGHEST QUALITY STANDARDS. THE KEY TO SUCCESS: SIMPLIFICATION, AUTOMATION, AND DIGITALISATION.**

The project focused on track construction, particularly the installation of 3,800 metres of slab track and four turnouts on individual supports.

A flexible lifting system was developed specifically for the non-standard gauge. Boreholes were drilled using a specially designed drilling unit capable of executing four core drills in parallel with automated feed. The flushing water was treated and reused.

Even the grouting of the support points was optimised. The mixing and grouting unit for the IVES track system, which had already proven itself in previous applications, was used efficiently once again.

These optimisations enabled the completion of both tracks and two turnouts within just eight months. Around 95% of the 11,000 support points have already been drilled, assembled and grouted.

The installation of the conductor rail in the tunnel section – essential for powering the underground trains – was largely completed on track 1, with work already starting in parallel on track 2.

In the outdoor sections, following the completion of the civil engineering and cable-laying works, ballast track construction began. Surveying data for the 3D machine control of the road-rail excavator was also prepared by the DRS team.

Thanks to collaboration across departments, workflows could be automated and digitalised. The targeted use of innovative machinery and technologies increased efficiency and work quality, which in turn led to better project planning and reduced workload for on-site staff.

NEWLY REOPENED RAIL LINE

Major Programme of Works
on Rejuvenated Line in Ireland.

Edel Kennedy
Head of Marketing and
Communications, Irish Market

IRL A TOTAL OF 104 SHIFTS WERE DELIVERED BY RHOMBERG SERSA ON THE LIMERICK-FOYNES LINE IN THE SOUTH-WEST OF IRELAND, IN ONE OF THE KEY STAGES TO PREPARING THE TRACK FOR FREIGHT TRAFFIC.

The €104million project will see the 42km line to Foynes Port reopened to rail traffic for the first time since 2001.

Phase 1 of the project involved major preparations of the site such as vegetation clearance and the removal of existing track. New ballast was laid to bring the ballast bed up to modern Iarnród Éireann – Irish Rail (IÉ) standards while new rail and concrete sleepers were laid along the entire route.

In mid-October, 2024, two OTMs were craned onto site in order to prepare the track for traffic. Tamper 742 and Regulator 704 were brought by road, and they were then lifted onto the line.

Over the following four months, a total of 104 shifts were delivered by Rhomberg Sersa.

"It's fantastic to see old lines being reopened and we're very proud to be part of this project," said Robbie Mullen, COO of Rhomberg Sersa Rail Group in Ireland. "Irish Rail is making huge investment into the network and the standard of works is very high."

Phase 2 of the project is now taking place and will include the installation of a signalling system on the route; installation of CCTV at level crossings; introduction of train communications system; and upgrades at Limerick and Foynes yard.

The final step before opening to traffic in 2026 will be testing and commissioning.

The line is being rehabilitated as part of IÉ's commitment to its Rail Freight 2040 Strategy to place rail at the centre of Ireland's freight transport system. This aims to create connections which offer Irish businesses greater opportunities to switch from road haulage to more sustainable rail transport.

HIGH-PERFORMANCE CORRIDOR HLK 6100

Rhomberg Sersa Rail Group awarded
subcontract for track works in Lot 3.

Sven Schickedanz
Site Manager,
German Market

Project HLK 6100
Location: Falkensee–Nauen, Germany
Scope: Renewal of 50 turnouts
Construction phase: May to November 2025

DEU THE RENEWAL OF TURNOUTS BETWEEN FALKENSEE STATION AND THE FINKENKRUG JUNCTION, CONTINUING THROUGH BRIESELANG STATION TO NAUEN STATION, HAS BEEN ENTRUSTED TO THE RSRG.

As part of the high-performance corridor Hamburg–Berlin, Rhomberg Sersa Rail Group is acting as a subcontractor to the main contractor DB Bahnbau Gruppe GmbH, delivering two sub-projects within construction lot 3: the Berlin–Dergenthin section. The primary focus of the largest individual contract to date for the Berlin office is the renewal of 50 turnouts. Specifically, the contract covers the works in Sub-project 1 (Falkensee and Finkenkrug) and Sub-project 2 (Brieselang and Nauen).

This endeavour is considered an infrastructure project of national importance. The high-performance corridor Hamburg–Berlin is a key element in the modernisation and expansion of the railway line between the two cities. The 278-kilometre-long line is being fully refurbished to increase both capacity and reliability of rail transport.

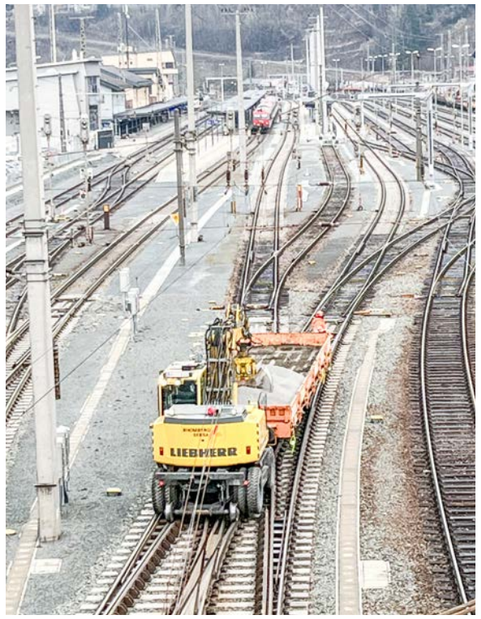
This contract marks a major milestone for Rhomberg Sersa Rail Group and provides the opportunity to apply its extensive expertise and experience in turnout renewal. Close collaboration with all project partners ensures that the work will be carried out efficiently and on schedule.

The project team is approaching the challenge with high motivation. Preparatory work began in May 2025 and laid the foundation for a focused execution during the main closure period. Since August, the project has been in its intensive main construction phase, with turnout renewal work running at full speed. Completion is scheduled for mid-November 2025.

NEW ELECTRONIC INTERLOCKING

SFE cabling and concrete works in the Schwarzach/St. Veit in Pongau station area.

Lukas Röck
Site Manager,
Austrian Market



Project ESTW Schwarzach
Location: Schwarzach/St. Veit, Austria
Client: ÖBB
Scope: SFE cabling and concrete works
Construction period: April 2024 to expected completion by end of 2026

AUT THIS PROJECT MARKS A KEY MILESTONE IN THE MODERNISATION OF RAILWAY INFRASTRUCTURE IN THE REGION. RHOMBERG SERSA RAIL GROUP'S ST. VEIT BRANCH IS INVOLVED IN THE WORKS AS PART OF A CONSORTIUM.

Construction of the new electronic interlocking (ESTW) in Schwarzach began in April 2024 and has been divided into 14 phases. The objective of this major project is to modernise and increase the efficiency of the infrastructure in order to ensure safe and reliable rail operations in the region over the long term. Commissioning of the ESTW is scheduled for 2026.

As part of the construction works, key technical measures are being implemented, particularly the installation of new cable routes. This includes the laying of cable troughs, track crossings with empty conduits in trenches, pipe jacking and boring, as well as the installation of numerous cable pulling shafts. Another key component of the project is the replacement of all signal foundations in the Schwarzach area.

Challenging soil conditions and necessary project extensions required adjustments to the construction schedule. In close coordination with all project partners, work on the remaining measures resumed in mid-March 2025 to ensure timely completion by the end of 2025 as planned.

In spring of this year, work also began to install the new cables in the previously constructed cable routes. A total of around 250 kilometres of cable is expected to be laid or pulled in during the current year. The works are being continuously supported by the use of two to six powerful road-rail excavators.

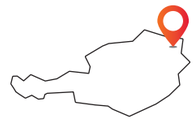
Constructive collaboration with the client ÖBB and all stakeholders has been key to the project's success so far and will continue to be the foundation for the next stages of the project.

MODERNISATION OF THE NORDBAHN

Key project for Europe and the region.

Ronald Ehrenhöfer
Authorised Signatory, Technical Director & Head of Sales Electrical Equipment, Austrian Market

Project Nordbahn
Location: Vienna–Bernhardsthal, Austria
Client: ÖBB
Scope: Renewal of the overhead contact line system
Construction phase: December 2024 to December 2036



AUT THE 66-KILOMETRE SECTION OF THE NORDBAHN BETWEEN VIENNA SÜSSENBRUNN AND BERNHARDSTHAL IS UNDERGOING MODERNISATION TO IMPROVE COMFORT, SAFETY AND CONNECTIVITY TO MAJOR EUROPEAN TRANSPORT CORRIDORS. RHOMBERG SERSA RAIL GROUP HAS BEEN AWARDED THE CONTRACT FOR THE RENEWAL OF THE OVERHEAD CONTACT LINE SYSTEM.

The route between Vienna Süßenbrunn and Bernhardsthal is not only part of the Southern Line, but also of strategic importance for two core trans-European transport corridors - the Baltic–Adriatic and the Orient/Eastern Mediterranean corridors. In addition to enhancing comfort and safety, the 12 year programme aims to shorten journey times and increase the frequency of S-Bahn services. Nine stations and nine stops will be modernised and made barrier-free.

Most of the work is being carried out during ongoing railway operations, which presents a logistical challenge. The upgrade is divided into two sections: the southern section from Vienna Süßenbrunn to Gänserndorf and the northern section from Gänserndorf to the border near Bernhardsthal.

The contract secured by Rhomberg Sersa Rail Group to completely renew the overhead contact line system is a technical highlight of the project. It is one of ÖBB's largest overhead line projects. Existing masts and cables are being replaced, and the entire overhead contact line system is being renewed. In addition, the system separation point at the national border will be modernised. On the main running tracks, different overhead line types will be installed depending on line requirements. Types 2.1 and 1.3 will ensure reliable power supply at speeds of up to 250 km/h. For secondary tracks, types 1.2 and 1.1 will be used.

Construction works began in December 2024. With the comprehensive renewal of the overhead contact line system, Rhomberg Sersa Rail Group is making a vital contribution to the sustainable development of rail transport in Austria.

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