RHOMBERG SERSA
SERVICE

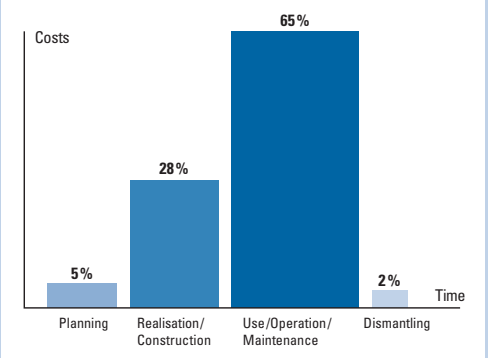
Asset Management Track

Rhomberg Sersa Service provides a comprehensive service portfolio for railway projects, and as a multidisciplinary full-service company acts as a one-stop shop.

What is track management?

Track asset management ensures that a company's infrastructure and vehicles are always available as required, in suitable condition and at as low an economic cost as possible. The infrastructure usually involves extremely long-lasting objects with an average life span of 30 to 50 years. However, long life spans lead to stringent demands with regard to planning and control of maintenance. This includes the changing nature and intensity of use, dominant costs of use, documentation as a result of legal stipulations and diverse, mutual, industry-specific influences regarding vehicle/track, wheel/rail and pantograph/contact wire.

Cost-effectiveness depends on the so-called life cycle costs (LCCs), which indicate the total costs incurred during the life span of an installation object (lifetime). The LCCs can roughly be divided into the phases of life shown in the graphic.



Typical cost distribution in the life cycle of a railway installation

Reducing life cycle costs

Pure acquisition costs are not crucial in the long term. A component with a slightly higher acquisition price can in the long term prove to be better value for money, e.g. if it does not need such frequent maintenance. Improvements to the tracks play a major role in our track management. And there are many further ways of reducing life cycle costs, which we consistently pass on to our customers.

Retaining long term value

Retaining long term value must be the objective of intelligent and future-oriented management of track facilities. The central aspect of track management is therefore maintenance which includes the following essential tasks: preventing disruptions and failures to operations, prolonging the lifespan and guaranteeing to meet the agreed availability and best possible operating safety of track. It is the decisive economic factor in operating a railway. If one considers the overall life cycle, this area accounts for an average of 65% of the total costs – i.e. many times the initial procurement costs. Maintenance planning, control and performance are therefore tasks to which we at Rhomberg Sersa Service – as a competent track manager – have always paid very particular attention and this has been to the benefit of our customers.

In the past, maintenance was regarded as merely an expensive necessity. However, on the basis of our experience, we now know that expert and forward-thinking maintenance creates enormous potential for savings, because it avoids expensive repair work in the long-term. The objective of our strategy of intelligent track management is the long-term value retention or value enhancement of the track; and we have the expertise necessary for achieving this objective.

The aim of maintenance is to consistently supply vehicles (and assets)

- *in the agreed condition*
- *with the agreed operational availability*
- *at the lowest possible cost*

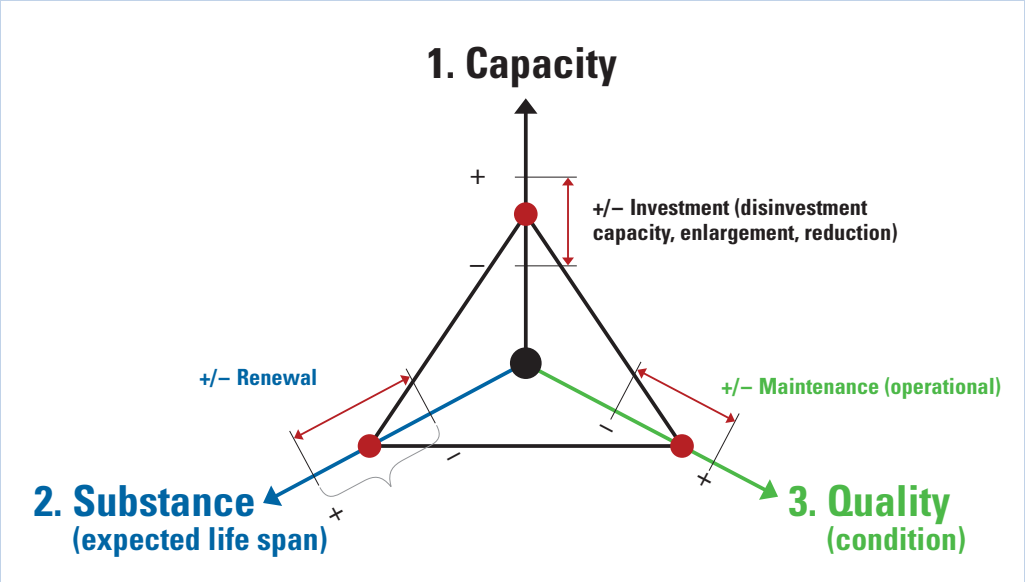
(VDV 170)

Track substance – wear-and-tear reserve

Infrastructure installations are long-lasting. It takes a long time until operational safety is endangered, but faults or neglected maintenance nevertheless become noticeable – in the form of loss of substance and reduced life expectancy, and thus far higher LCCs.

A mixture of status-oriented and preventive maintenance has proven its worth as the most economic maintenance strategy for rail networks. With status-oriented maintenance, regular inspections ensure transparent and up-to-date status information, and supply the data for the planning and control of maintenance.

In the field of services track, Rhomberg Sersa Service specialise in recording and assessing the status of infra-structure installations and managing track maintenance. We support our customers in areas ranging from advice and inspection through to complete acceptance in connection with maintenance assignments. For this purpose our inspectors regularly provide information on status, and diagnose the need for maintenance and the degree of the objects' loss of substance.



The key parameters of the infrastructure strategy and their most important relationships.

Maintenance in accordance with clearly defined objectives

Economic maintenance presupposes clear cost objectives as well as quality agreements concerning the requirements and condition of the track over a long-term period. In this way, it becomes objective-oriented track management. Identifying, agreeing and monitoring performance indicators requires objectives that can be measured, achieved and checked, which also implies higher quality in terms of the evaluation and documentation of track condition. By creating transparency in this respect, we generate long-term added value. The more transparent and understandable the maintenance process, the more efficient and economic use of the track will be.

The following steps are required:

1. *Definition and agreement of objectives*
2. *Methods and standards for measuring the intrinsic value of the track*
3. *Monitoring the progress and achievement of objectives (target-actual comparison)*
4. *Determination and presentation of the development of the condition and intrinsic value over a period of time*
5. *Planning and control system – adapted to the special needs of the maintenance:*
   - 5.1 Action planning and preparation
   - 5.2 Lifelong documentation
   - 5.3 Recording and evaluation of life cycle costs

Our expertise is available for hire

In order to develop maintenance into guaranteed success for our customers, we provide a service of modular track management for track networks – from the determination of requirements and assistance with decision making, to preparation for the awarding of contracts, order monitoring and documentation, through to the assumption of complete maintenance activities. The individual services can be put together as modules completely in line with the requirements of our customers and tailored individually to their needs.
Services such as the "Temporary Track Manager" provide infrastructure operators with lasting support in economic maintenance. Our experienced experts support those responsible for maintenance in all necessary day-to-day activities – and precisely when it is necessary.

The scope of performance varies from individual duties right through to complete track management with full responsibility for budgets.
Thanks to the cross-sectional experience through their work for numerous different infrastructure operators, our "Temporary Track Managers" have a high level of experience-based knowledge and, naturally, have access to our internal company network of experts and expertise.

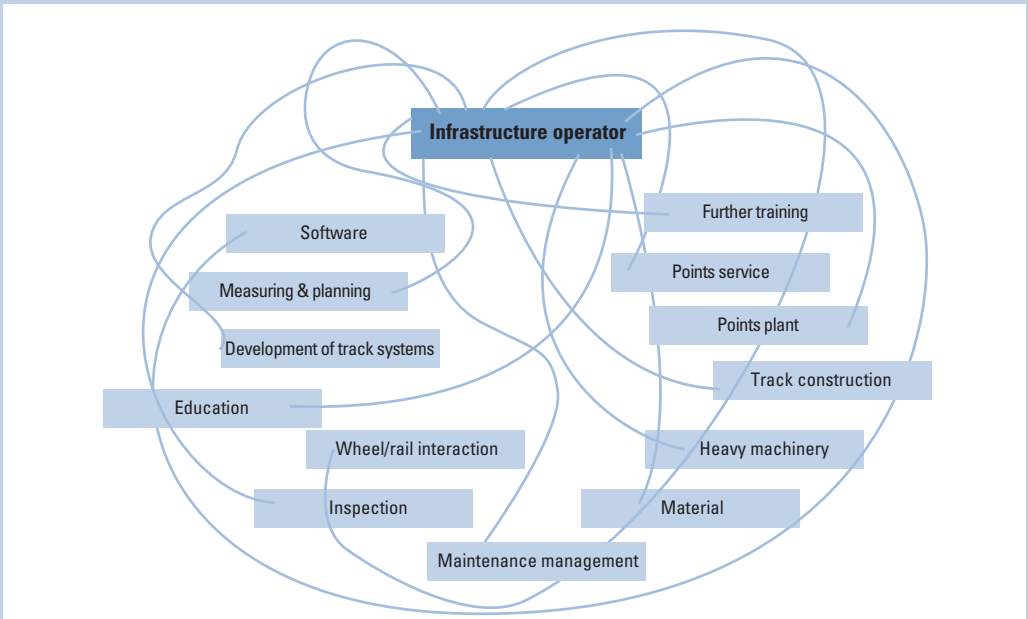
Partnering means to Rhomberg Sersa Service transparent, 'eye-level' action on the part of customers and con-tractors, with the common aim of guaranteeing the reliability, availability and safety of the rail network throughout its life cycle and inexpensively maintaining the network.

Process phases	Operational maintenance process	Service portfolio Track life cycle management
Planning	▸ Provision of master data	▸ Inventory and classification
	▸ Determination of maintenance strategies	▸ Working, service and care schedules
	▸ Planning maintenance measures	▸ Recording and assessment of condition ▸ Prioritisation and classing
	▸ Planning maintenance costs and determination of budget	▸ Calculation of repair costs and performance
	▸ Planning schedules and capacities	▸ Operations scheduling
Management and realisation	▸ Arranging order scheduling and placement	▸ Preparation of awarding of contracts ▸ Preparation of specification and schedule of prices ▸ Project planning
	▸ Performance and monitoring of order	▸ Interface management ▸ Recording of progress ▸ Schedule monitoring ▸ Quality monitoring ▸ Monitoring of capacities ▸ Acceptance
	▸ Order acknowledgement and documentation	▸ Recording of effort ▸ Provision of enhancement information ▸ Asset documentation update
	▸ Risk analysis and controlling	▸ Process optimisation and feedback
Controlling	▸ Measuring and billing of maintenance costs and performance	▸ Cost and performance related reporting system ▸ Actual versus budget comparison
	▸ Prosecution of warranty claims	▸ Warranty monitoring
	▸ Development of operating figures and analysis of fault variance	▸ Identification of operating figures and faults

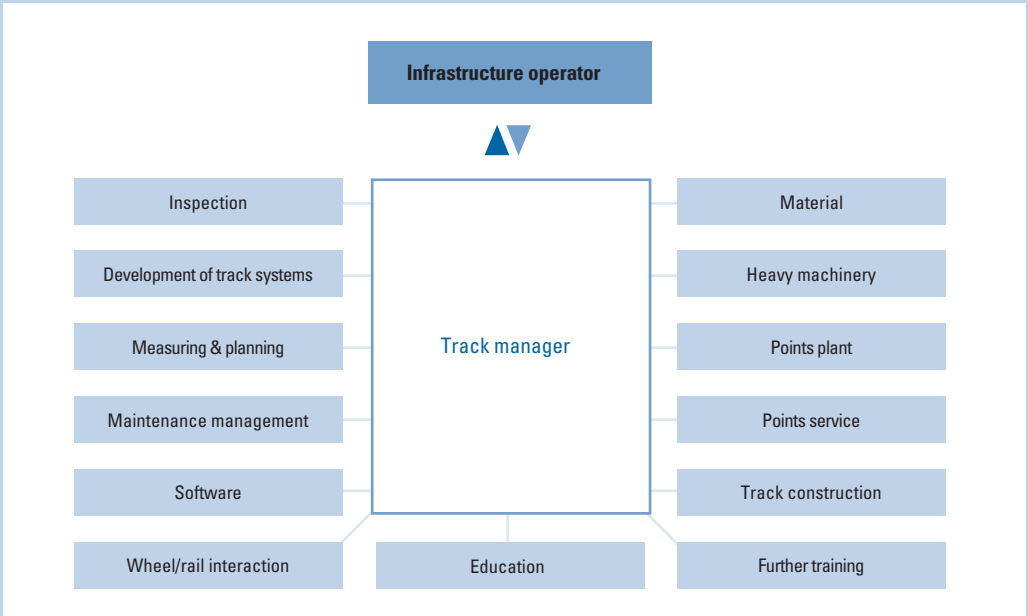
Cost reduction through process-optimising track life cycle management service for rail infrastructure

The processes of maintenance management usually involve considerable potential for optimisation and cost reduction. RS Gleisbau's track management actively supports you from conception through to implementation in daily business. Our process- and company-specific solutions are results-oriented and bring you concrete benefits.
These benefits represent cost savings and, in most projects, their value exceeds the project investment by approx. 200 – 300% in the first year. The improvement approaches are logically and consistently based on the circumstances within the company and are implemented together with your staff on site. Such cooperation produces a consistent and measurable increase in efficiency of at least 15% and frequently in excess of 25%.

Optimised interrelation of subsystems through intelligent track lifecycle management



In the initial situation the operator is in direct contact with the subsystem providers. He determines the configuration and coordinates all parts to a whole. This requires a maximum of detailed knowledge of the involved skills, which has to be kept up to date.



Noticeable discharge regarding the specification and coordination of the skills to a complete system. As a specialist for track systems, the track life cycle manager provides the latest knowledge in order to optimise the system as a whole.

Database-assisted track management

Maintenance processes concerning the rail infrastructure place high demands on the quality and availability of information. A lasting improvement in the quality of information can be achieved with suitable EDP support.

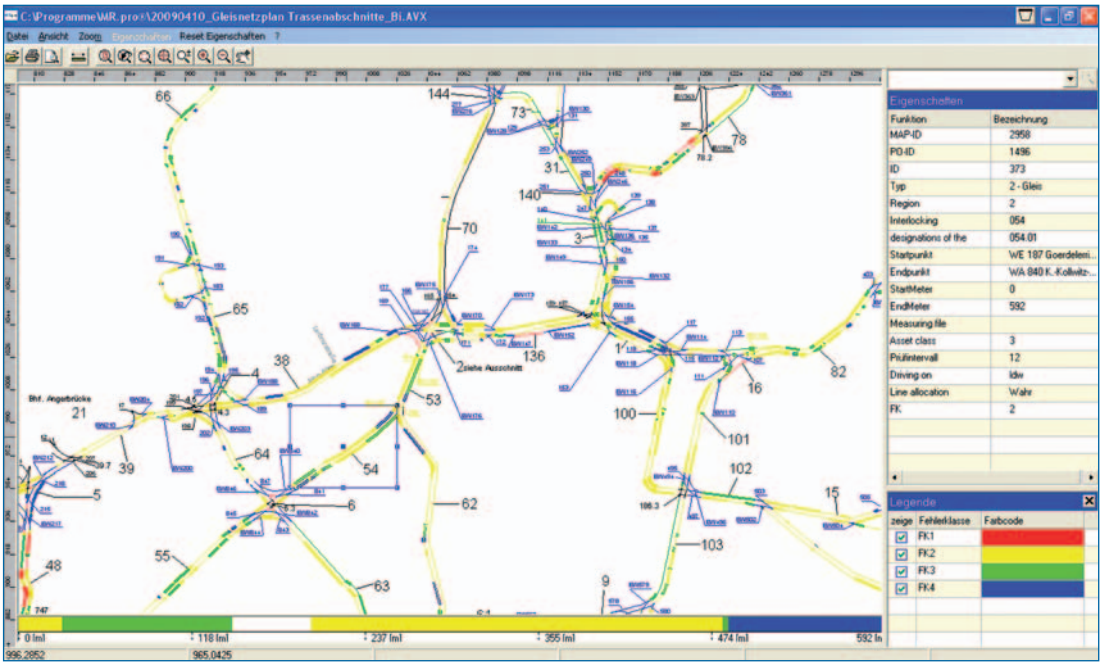
The internally developed software MR.pro®, a technical maintenance management system, manages all infrastructure data and creates information from measurement and test data, facilitating correct decisions that can be followed up. The prioritised measures derived from the status and stock information influence budget determination and medium-term maintenance planning.

MR.pro®

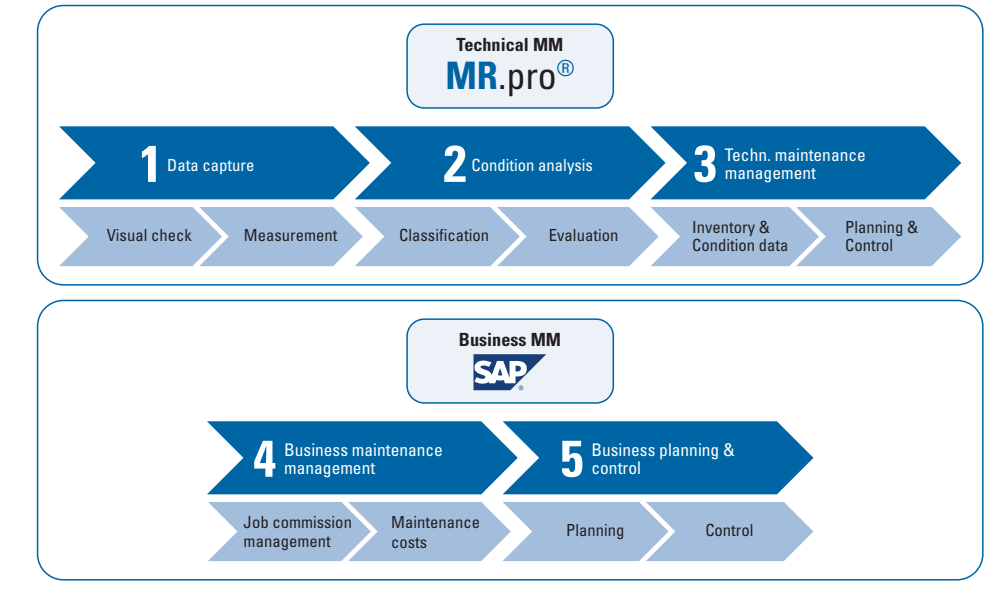
MR.pro® is a software product for technical maintenance management of railway infrastructures. It provides clear, collected information on the stock and status of installations for the purposes of the maintenance process.

In addition to planning and allocation, one of the program's most important functions is the control of maintenance and repair assignments, taking into account commercial and value conserving considerations. To this end the software offers extensive numerical and graphical analytical tools for assessing and visualising the status and substance of the rail infrastructure and for generating comprehensible decisions on necessary and useful repair and maintenance measures. The integrated controlling module effectively supports those responsible for installations in quality monitoring, lifespan management and the active pursuance of warranty claims.

Bidirectional interfaces ensure the linkage to commercial maintenance-management and planning systems – ERP systems such as SAP PM.



A picture paints a thousand words – visualised maintenance planning with MR.pro®.
Current state capture – current state analysis – information system – planning and control system



***Two software systems for all functions of maintenance management: Technical = MR.pro®
Business management = SAP/PM. Additional geographic information systems (GIS) offer a useful supplement.***

Our success proves we are right!

Fixed-term track managers know their customers' tracks very well and are responsible for the entire maintenance cycle. If necessary they will support customers with the allocation of repair measures, and will accompany, coordinate and monitor all work. They will finally document the work and results, and will update the transport company's track documentation. This professional support saves their customers time and at least 20% of the maintenance costs, as only useful repairs linked to life cycle costs will be carried out, and they will also be critically monitored. It has been proven that this means the tracks can be economically used for longer.

For our customers it is important that they concentrate on their core tasks and leave the niche work to the specialists. This trust is justified, because our installations managers have the very best network at their disposal: the combined expertise of the Rhomberg Sersa Rail Group.

Benefit from our knowledge!

Rhomberg Sersa Service also offers seminars on the topics of management, planning and control of maintenance,

e.g.:

- Maintenance control
- Life-span management
- Infrastructure-data management
- Status-dependent maintenance
- Inspection & analysis

How often is a fundamental renewal of the data management of your infrastructure planned?

Probably not that often.

As a rule, one is therefore generally not familiar enough with the system to be able to quickly set up an information system that fulfils all the expectations and requirements of all concerned – on top of conducting all the daily tasks.

QM zertifiziert
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Arbeitsschutz, SCC

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Simplify Database – an ideal combination of ”doing, and letting somebody else do“

This is exactly where the holistic system of Rhomberg Sersa Service starts. We offer tailor-made data management systems that can be completely preconfigured and installed if so required – in other words, **“ready to work”.**
Based on the individual requirements and the operational environment we, together with the operator, work out the correct solution in view of the required information value and its usability within the framework of maintenance planning and control. Amongst other factors, we clarify:

- The required measurement parameters and levels of detail according to cost-benefit assessments
- The quality of measurement results (reliability and repeatability, etc.)
- The interfacing and further processing and presentation in GIS or ERP planning systems
- The linking with primary measurement databases
- The update interval and storage in the system

During the actual implementation, our specialists create a complete database of the tracks and points during the inventory assessment.
MR.pro® is installed ready for the customer with all inventory and condition data. The inspection equipment is handed over to the operator after intensive training and the “flying start” is professionally supported and taken care of.
In this way the start into digital infrastructure data management will succeed from the offset – guaranteed!

Ein Unternehmen der
RHOMBERG SERSA RAIL GROUP