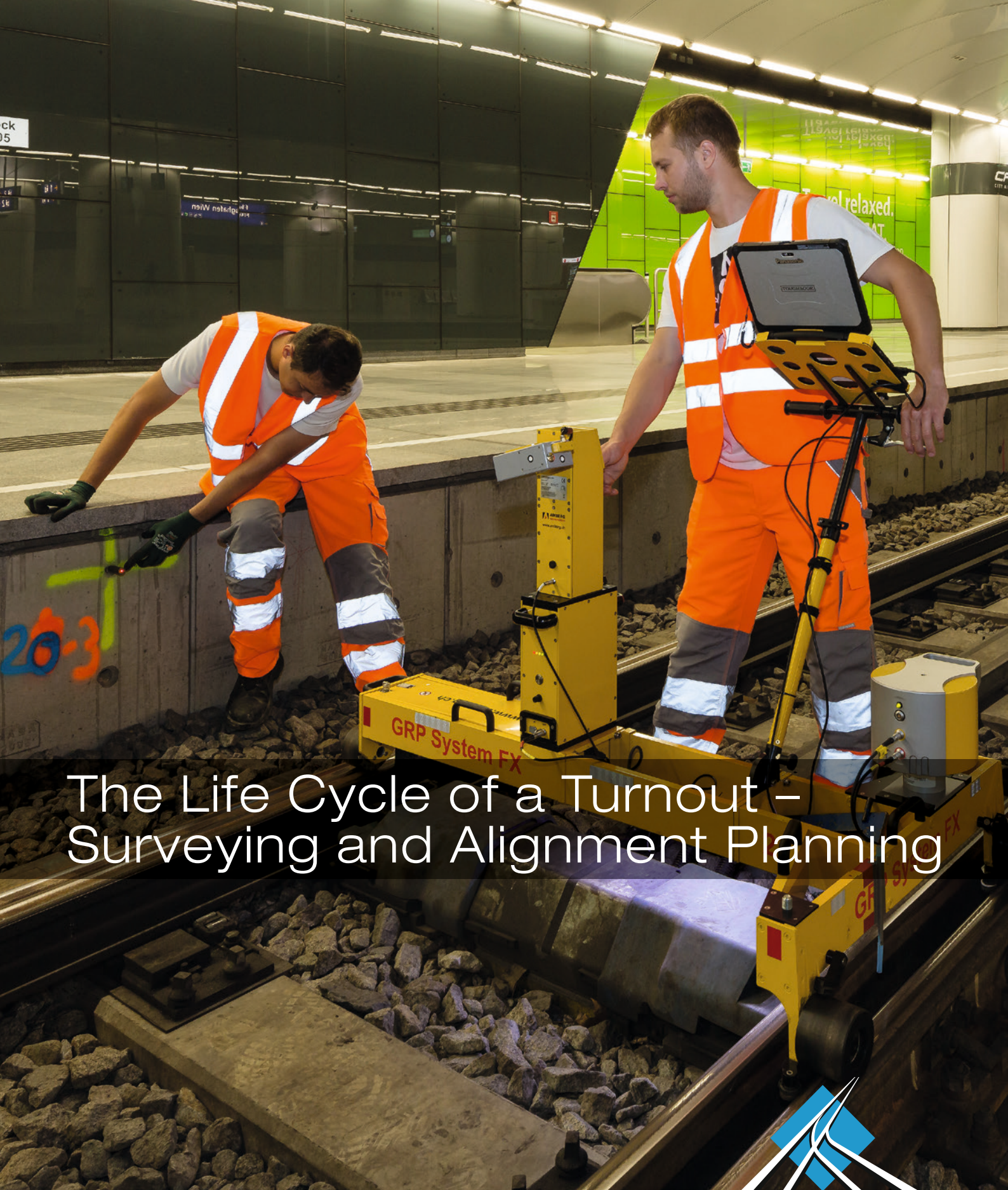


The Life Cycle of a Turnout – Surveying and Alignment Planning

Weichenwerk Wörth GmbH

WWG

www.wwg.co.at


Leica

Surveying, Alignment Planning and Turnouts all done by one company

By already involving our turnout experts from the surveying stage, we can provide our customers with a significant advantage. As a leading specialist in railway solutions, we can guarantee tailor-made and optimized alignments ensuring the best possible turnout solutions for our customers. This enables us to optimize track and turnout geometries, as well as sleeper sections, ensuring the best possible arrangement of insulated joints and reduction of welded joints. This results in a positive effect on the overall quality and cost of the system. To meet the high standards of our customers, in terms of profitability and quality, we employ state-of-the art technical equipment for track alignment.

By reducing interfaces, we can effectively minimize possible errors through communication and data transmission thus increasing accuracy. By eliminating adjustment work we are able to reduce installation costs drastically. This measure also initiates a shorter order processing period and underlines the importance of implementing upstream service performed by a turnout specialist.

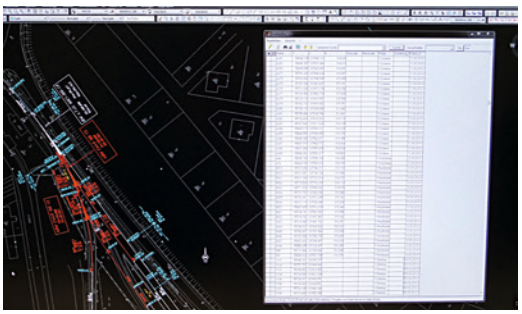
- ✓ Specialized in railway systems
- ✓ Optimal alignment by experts for track and turnout systems
- ✓ Life cycle cost reduction

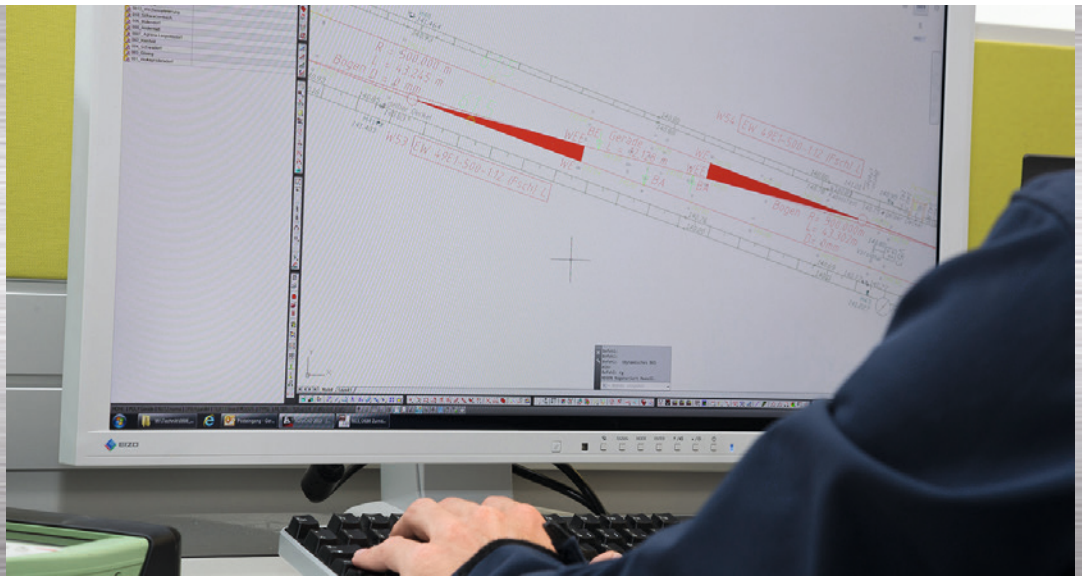
1 SURVEYING & DATA ANALYSIS

In order to comply with all requirements and to make the best possible use of the optimized potential, all rail tracks and turnouts are surveyed by our specialists.
This is done on site with a high-precision total station using a laser scanner function to scan details such as overhead lines and catenary masts etc. This information can also be used at a later stage. For longer rail track or turnout sections, measurement is carried out highly efficient with the WWG track measurement systems, Amberg IMS3000 track measurement trolley and the Leica GS18 GNSS receiver. Thereby making it possible to optimize the surveying process and to reduce Cut Off Time of the rail tracks to a minimum. Surveying is thus not only possible during line closures, but also while trains do not commute on the track.
The WWG Track Measurement System can also be expanded with a 3D laser scanner, which in addition to recording the track data also enables seamless, highly accurate detection of the area around the track, including overhead lines and cantilevers. After the track measurement the recorded data is post processed and an measurement plan is created in CAD, this represents a precise topographical planning base for the track alignment.

2 TRACK ALIGNMENT

The survey data is transferred by our surveyors to a computer, where a comparison of all recorded track geometry with the map data takes place. If there is an exact match, a turnout design is drawn up; alternatively, a new track alignment is created and calculated. The turnout radii can thus be optimized and new turnouts used or old turnouts replaced with new turnouts.
Based on the actual and structural conditions, our specialists optimize the rail system by developing a sustainable, customer-oriented and cost-effective solution. As a result you achieve an increase in passenger comfort and driving speed as well as extending the lifespan of the track system whilst reducing overall life cycle costs.

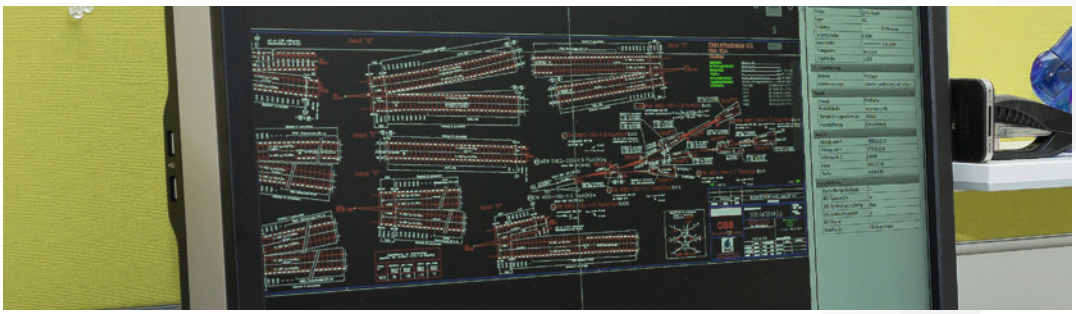


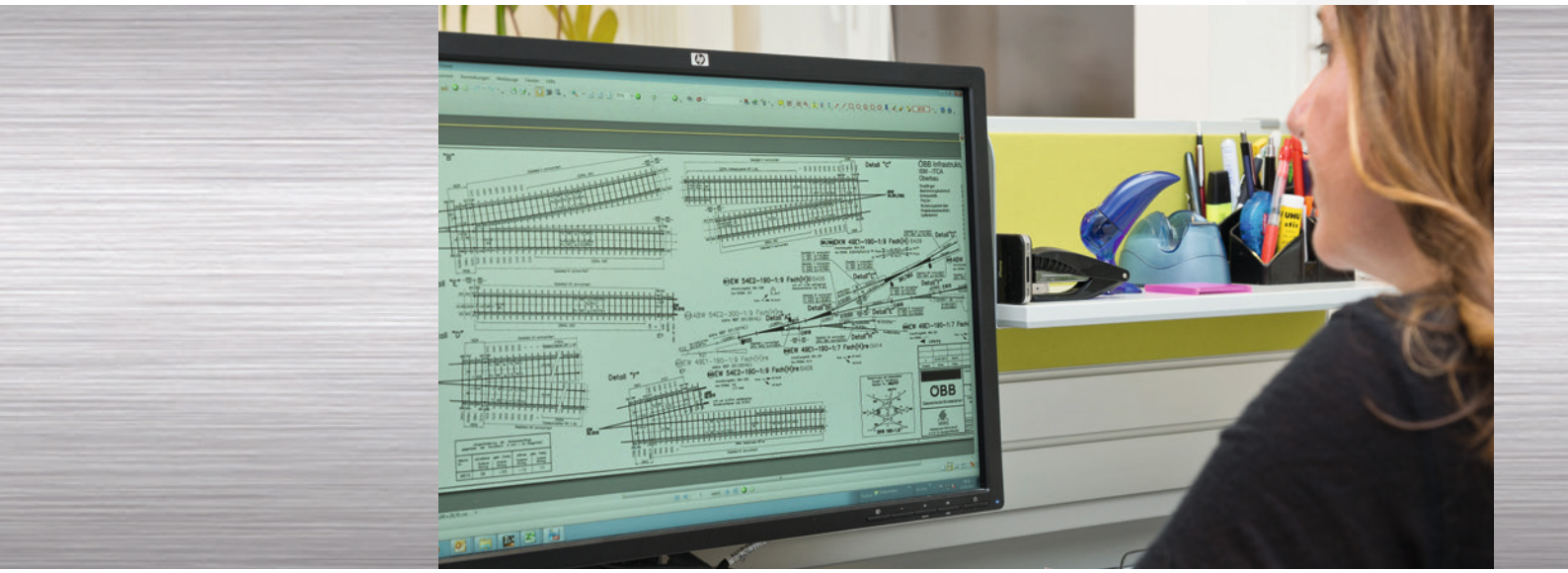


3 PREPARATION OF TECHNICAL ORDER DOCUMENTATION

As a technical base, we create detailed turnout designs for our customers according to the defined alignment. These include the exact specification of the turnout type and design, rail shape, signalling equipment, insulated joints, as well as additional rails and sleepers which can also be delivered pre-assembled as a complete package.

Once our customer confirms the turnout design, a turnout installation is generated. This forms the technical foundation for production and assembly. Based on this turnout installation the alignment data is processed for the tamping machine and transmitted in digital form which ensures the exact and automated positioning and setting up of the tracks and turnouts.





4 SETTING OUT

Before installation the newly aligned track and turnout area is set out by our surveying technicians. The alignment data is marked on site and the stakeout points are given to the contractor. The stake-out plan is used for the final documentation of the positions and elevations of the alignment. When carrying out all our tasks, we aim to provide comprehensive service to our customers ensuring availability and reliability is at the core of our performance whilst promoting safety and profitability. Our complete solution package, for turnouts guarantees practical applications with optimal customer benefits. Our high-performance systems are of the very highest technical standards.

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