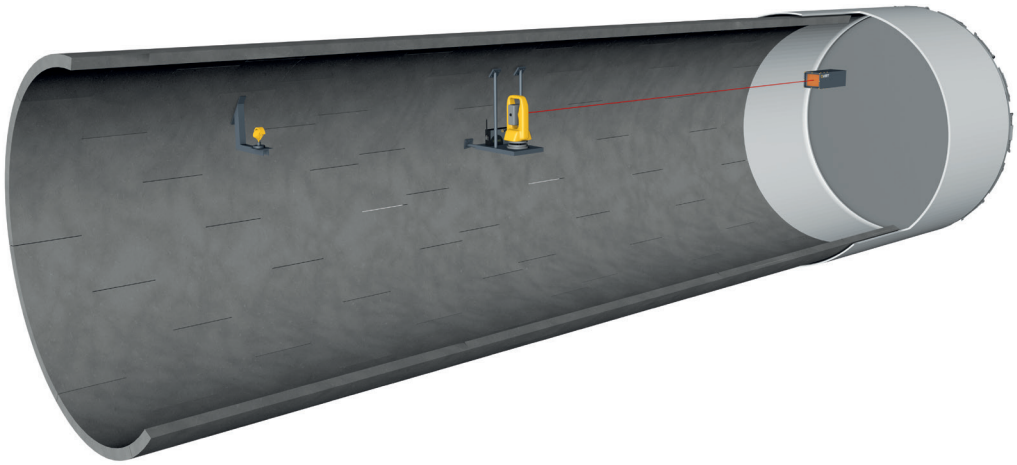
TUnIS Navigation TBM^{Laser}

TUnIS Navigation TBM^{Laser} is the solution for navigating tunnel boring machines (TBM) independent of whether it is for EPB, mixed shield or hard rock TBM and for all geometry types.

The name TUnIS stands for Tunnel and Underground Integrated Software Structure and is a software platform that forms the basis for various measurement and navigation systems from VMT. In combination with hardware components proven on the construction sites, TUnIS supplies perfect system solutions that have proved their worth for more than 25 years.

Precise and up-to-date. On single shield TBMs, the well-proven VMT system solution, TUnIS Navigation TBM^{Laser} determines the current advance position compared to the planned tunnel axis with millimetre accuracy and in real time using a total station and an active laser target installed in the shield. The precise position information in real time ensures optimum control of the machine position and thus a uniform shield run with small deviations from the tunnel axis. The position and tendencies are continuously displayed to the shield operator. This allows vertical or horizontal curves to be easily and precisely controlled.



Benefits

- Thanks to the compact laser target, the system can be used on machines **with small diameters without loss in accuracy** – at the same time, the flexibility for the construction of the gantry is increased.
- TUnIS Navigation TBM^{Laser} can be enhanced with the assistance system **TUnIS.track assistant.** This ensures **continuous position determination and documentation** (including chainage), **even in tight curves**
- To ensure trouble-free advance at all times, the system offers the **switch between TUnIS.moving station and the classic navigation mode.** This presents considerable advantages, including the fact that the total station no longer needs to be relocated
- By temporarily or permanently including additional sensors (e.g. a gyroscope) in position determination the modularity of TUnIS Navigation TBM^{Laser} ensures **reliability and availability of correct TBM positioning determination – even in tight curves**

TUnIS Navigation TBM^{Laser}

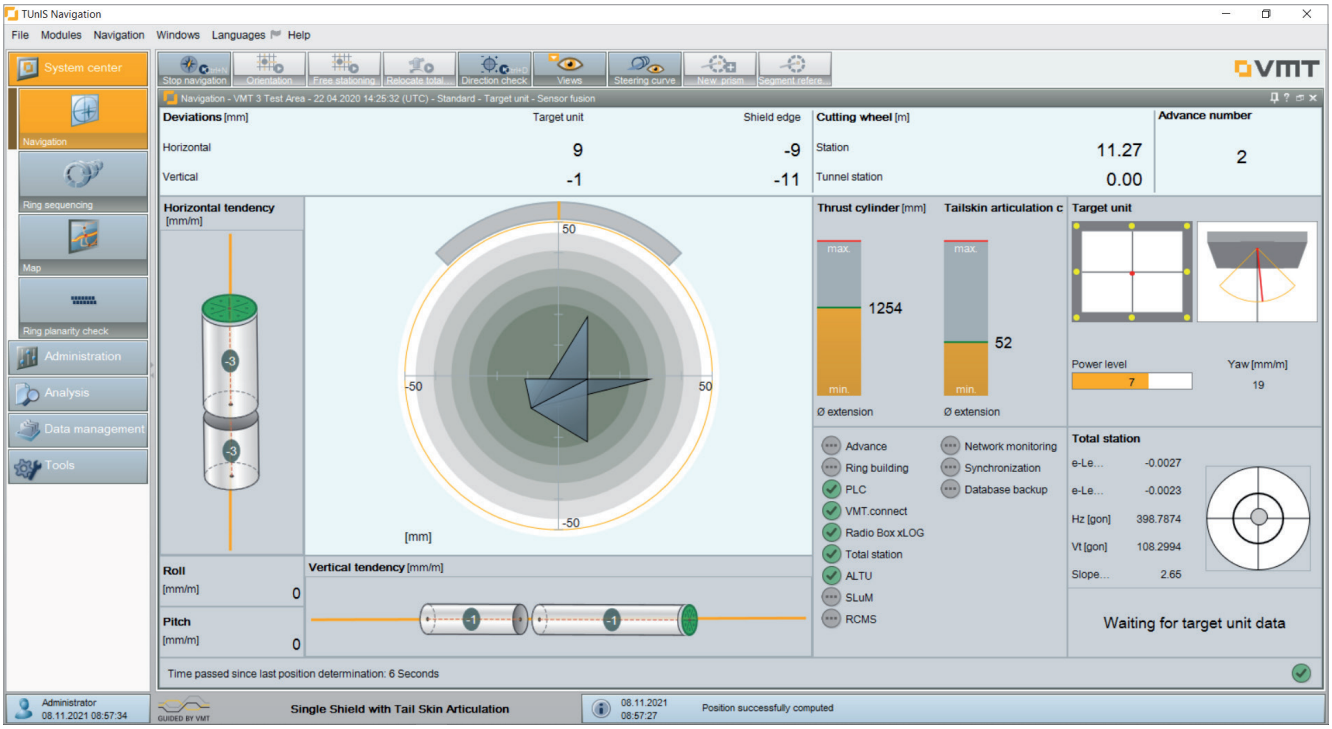
Navigation system for EPB, mixed shield and hard rock TBMs

Features

- Calculation of a correction curve in the case of inaccurate driving and display of the TBM deviation to that curve
- Monitoring of segment reference prisms parallel to the advance
- User-specific display of the navigation screen
- Support for various PLC types
- Modular, easily adaptable and scalable system
- Conforms to IP65 for harsh operating conditions below ground
- Comprehensive advice and worldwide service from VMT

Redundancy with the assistance system

With the use of a Track Assistant that is automatically activated and uses complex algorithms to process the data from various sensors, it is possible for the TBM to temporarily navigate precisely without the main system, consisting of total station and laser target. Particularly for machines with limited or small laser windows, or when moving through small curve radii, this procedure is a great advantage: even when the laser beam is temporarily interrupted, the position is continuously calculated and the total station does not have to be relocated immediately.



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