

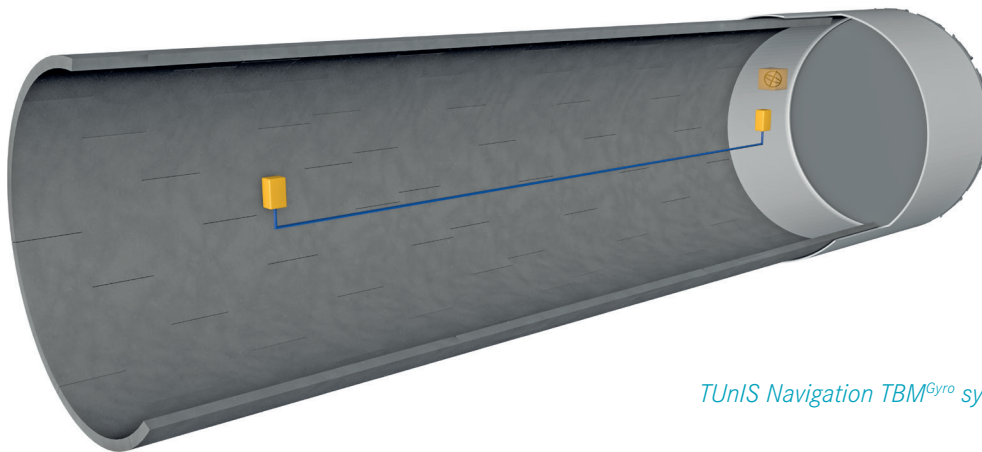
TUnIS Navigation TBM^{Gyro}

TUnIS Navigation TBM^{Gyro} is a navigation system for tunnel boring machines that is independent of machine type (EPB, mixshield, hard rock). The TUnIS Navigation TBM^{Gyro} measuring process is based on a gyroscope (gyro-compass) and is particularly suitable for tight alignment radii and where there is no laser window on TBMs with only a small diameter.

Precise position information in real time ensures optimum control of the machine position and thus a uniform shield run of the TBM with the smallest possible deviations from the tunnel axis. With a suitable navigation system, the shield operator receives a continuous display of position and tendency of the machine and countermeasures can be taken in the event of deviations.

TUnIS is the acronym for Tunnel and Underground Integrated Software Structure. TUnIS is a software platform for various measurement and navigation systems from VMT. In combination with hardware components tested on site, TUnIS forms a proven system solution for navigating TBMs.

TUnIS Navigation TBM^{Gyro} is a special navigation system based on a gyro-compass that does not require a total station or a laser.



TUnIS Navigation TBM^{Gyro} system view

Also in the tightest curves and on small TBMs

For an alignment with small curve radii when using an optical measuring system, the sighting distance of the associated total station installed in the tunnel is very limited. The total station must therefore be moved frequently. These movements require personnel and hinder the working processes, costing time and money.

The TUnIS Navigation TBM^{Gyro} solution based on a gyro-compass does not require a total station. It is therefore possible to continuously calculate the current TBM position even in tight

radii without frequent manual interventions. Even machines with a small diameter and without a laser window can be reliably navigated with the help of TUnIS Navigation TBM^{Gyro}. Reduced space that makes the installation of a total station difficult or impossible plays no role with TUnIS Navigation TBM^{Gyro}.

TUnIS Navigation TBM^{Gyro}

Navigation system for EPB, mixed shield and hard rock TBMs



Features

- Display of deviations for the actual machine axis or for the drift-corrected drive direction to the tunnel axis
- Calculation of a correction curve in the case of inaccurate driving and display of the TBM deviation to the correction curve
- Manual drift and chainage correction possible at any time
- User-specific display of the navigation screen
- Permanent and continuous display of the position data, even when affected by vibration and during the advance
- Support for various PLC types
- Modular and therefore easily adapted and scaled
- Robust hardware for the demanding use in the tunnel
- All system components from one source
- Comprehensive advice and worldwide service from VMT

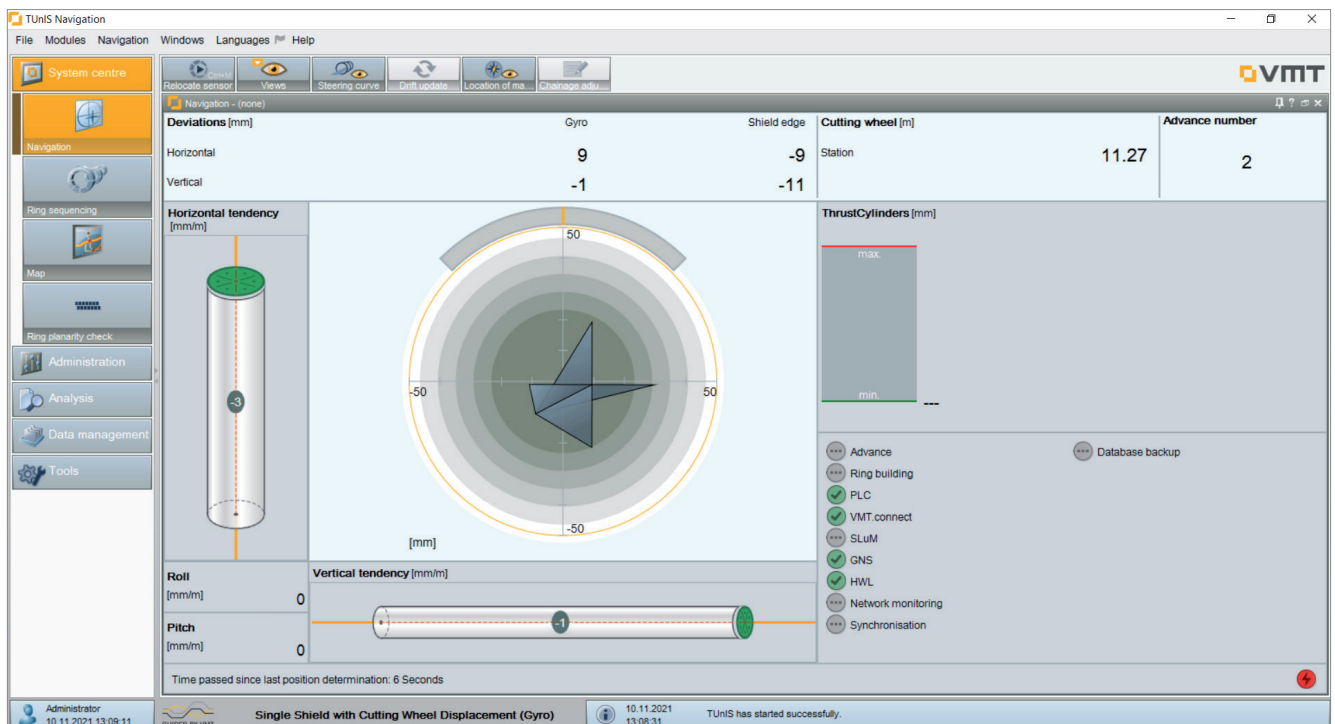


Benefits

- This all-rounder navigation system provides continuous determination of TBM position **even under poorest visibility conditions or without laser window** – for all machine types and any alignment geometry
- TUnIS Navigation TBM^{Gyro} has an automatic drift calculation function that avoids **operating errors**, **increases the accuracy** of the system and **prevents driving off-track**

Advice and competence from VMT

You won't be alone in the configuration and operation of TUnIS Navigation TBM^{Gyro}. We offer competent and continual support, with over 25 years' experience and more than 2,400 tunnelling projects successfully completed worldwide.



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