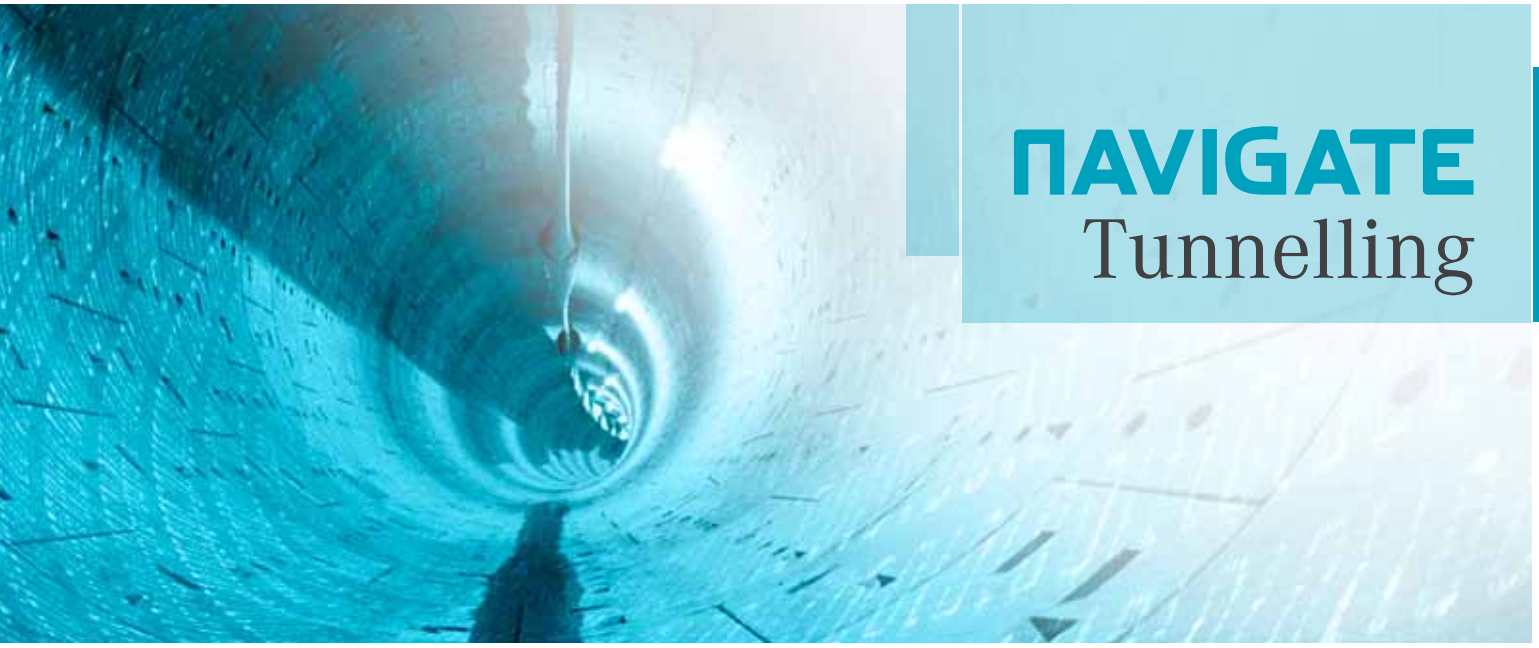


NAVIGATE Tunnelling

When using a roadheader one of the main problems affecting the precise cutting of the face is the visibility of the cutter head. Frequently the amount of dust produced, or residual shotcrete in the air, is such that the operator is unable to clearly see the position of the cutter head.

SLS-Roadheader

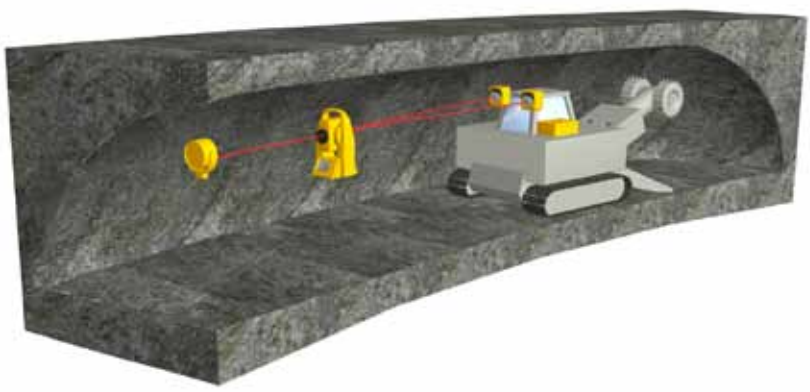
Marking of the face area to be excavated is time consuming for the survey crew and it takes place in an area where stability of the working area is at its potentially most vulnerable. Even if the machine is positioned correctly and has a limit on the movement of the cutter head there is a tendency for the machine to move as a reaction to the cutting force applied by the machine.

In order to save unnecessary excavation and provide better information to the machine operator, VMT GmbH has developed a system to support precise excavation of the tunnel profile when using roadheaders or other partial face cutting machines.

The SLS-Roadheader Positioning System determines:

- The position of the excavator in relation to the DTA
- The position of the excavator in relation to the profile

And it presents this information to the machined operator in a clear concise form, both numerically and graphically.



Schematic SLS-Roadheader

VMT

SLS-Roadheader

On the monitor of the system PC the actual position of the machine and the excavation are continuously displayed. The data such as horizontal and vertical deviation in relation to the DTA and the distance to the profile is displayed in a clear form.

Advantages

- Extensive information and visualization of data
- More safety for the staff
- Minimization of staff assignment (driver can operate alone)
- Optimization of profile excavation

Features

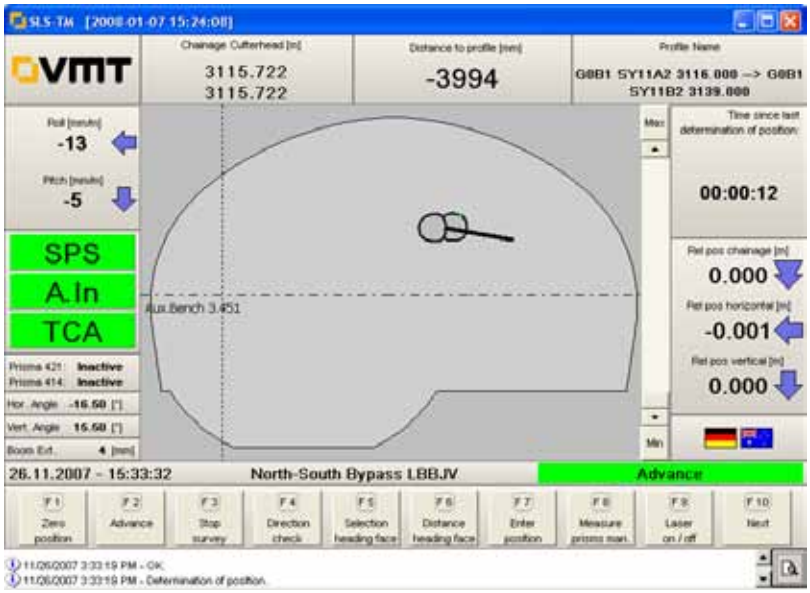
- Field of Application: Large tunnelling, conventional excavation
- User management
- Continuous calculation of cutter arm's position
- Visualization of all important data on the screen in driver's cab
- Archiving of all data

Options

- The positioning system can be connected to a visualization and remote-maintenance system (via WLAN to the network at site), which enables the visualization of working process in the site office.

The actual chainage, as well as the roll and pitch of machine, complete the important information for the operator; thus enabling optimal control for the necessary steering actions.

Additional information such as date, time, project, profile name and hardware status are also shown in the visualization and stored for later analysis and documentation.



Screenshot: Visualization

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