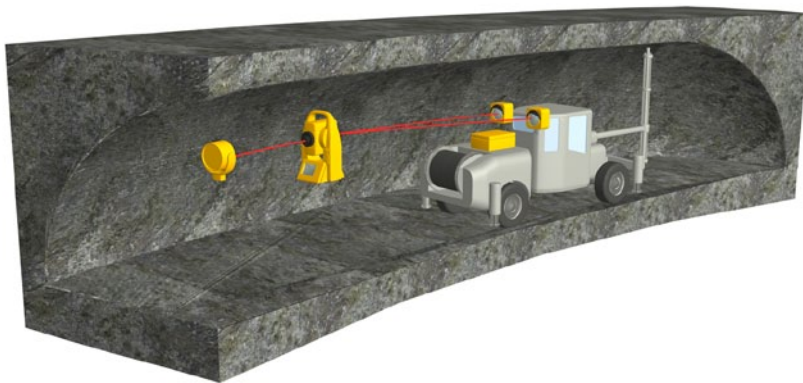# ΠAVIGATE
Tunnelling

So far, the bolter to stabilise the rock mass, were only positioned visually or through manual marking of the initial anchor point. To automate this procedure the VMT GmbH developed a navigation system for a drill carriage, the SLS Rockbolter advanced.

SLS-Rockbolter advanced

Therefore he positioning of the bolter is quicker and more precise and furthermore the real bolter position can be easily compared and documented to the desired position of the bolter schematic.

This system calculates itself the exact position of the drilling rod and shows it as:

- Position of the drilling rod in relation to the DTA
- Position of the drilling rod in relation to the drilling profile (bolter schematic).

To optimise the working procedure the drilling rod will be displayed on the monitor in the view of the operator in relation to the required position of the bolter schematic. The system calculates self-acting the exact position and direction of the drilling rod and after reaching the final position it records this data in the system by activating a button.

Schematic SLS-Rockbolter advanced

VMT

SLS-Rockbolter advanced

The DTA can be created external and afterwards imported as a file. It is also possible to make the input directly in the software. The data can be seen or changed later.

Advantages

- Saving of manual work
- Increase of operational safety
- Increase of precision and efficiency
- Quick setting of bolts

Advantages compared to Basic Version

- No measurements with total station necessary as long the bolter doesn't move
- So the total station can be used for other tasks, for example for navigation of a Roadheader in the same tunnel
- More precise calculation of drilling rod position and orientation
- Higher measuring frequency of drilling rod position and orientation

Features

- Field of applications: Large tunnelling
- Independent calculation of position of drilling rod regarding DTA and drilling profile
- Continuous storage of data
- Optional connection possible to visualization and remote systems

All important data (e.g. rod-points, results of the direction control, position of the total station and back sight target) will be recorded in the system. Through this data the whole history is reproducible.

The navigation system can be connected to a visualisation and remote system (over WLAN or site network). So the advance progress can be visualised e.g. in the site management.