



## Project

- Jagdberg autobahn road tunnel
- Two parallel tunnel tubes 3.1 km long, 15.7 m wide, 11.7 m high
- Six-lane A4 new build (12 km)
- Structural peculiarities: 136 m deep ventilation shaft
- Overall costs: €295 million

## Special feature

Largest traffic tunnel construction project in Germany (2008)

## Task

Tunnelling driving control and identification of excavation geometry

## Contractor

ARGE Tunnelbau A4,  
[www.bemo.net](http://www.bemo.net)

## Duration

March 2008 – 2012

## Efficient Tunnel Guidance thanks to TMS Solution Germany's Largest Traffic Tunnel

Work on the Jagdberg Tunnel in Germany began at the beginning of March 2008, forming part of the six-lane A4 autobahn between Magdala and Jena/Göschwitz. It is currently the largest traffic tunnel construction project in the Federal Republic.

The ARGE Tunnelbau A4 (A4 Tunnelling Joint Venture) was responsible for implementing the €295 million Jagdberg Tunnel. Our experienced technology partner for surveying was Amberg Technologies: the excavation geometry of the twin-tube tunnel was determined with the aid of the powerful TMS software.

The information gathered using the Amberg software determined the tunnel guidance direction. It exactly defined the principal excavation geometry. The acquired data also formed the basis for placing the tunnel lining. The surveys were especially efficient, because TMS Setout Plus includes the entire project data and geometry elements in the total station.

The Amberg Technologies software solution employed is the only one of its kind in conventional tunnelling that can generate profile data on the one hand, but which can also be used for setting out tasks and scan evaluations on the other.



»We chose Amberg Technologies, because we need a partner with a proven track record in the exacting field of tunnel surveying.

Our contacts react quickly and flexibly even when unanticipated problems arise.«

Roman Bieronski  
Technical Site Manager Surveying  
ARGE Tunnelbau A4

### Product advantages for ARGE Tunnelbau A4

- All project data and geometry elements on the total station
- A semi-automatic approximation method identified the optimum setting out position
- Mobile on a tripod or in stationary use as motorised laser on a bracket
- Comprehensive profile controls: the highest measured data security and quality

### Amberg Technologies products used

- TMS Setout Plus
- TMS ProScan Plus
- TMS Tunnelscan

### Amberg Technologies

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## Efficient Tunnel Guidance thanks to TMS Solution Germany's Largest Traffic Tunnel

The Jagdberg Tunnel – forming part of the six-lane A4 autobahn between Magdala and Jena/Göschwitz – is currently the largest traffic tunnel construction project in Germany. The overall project costs including ground, drainage and roof lots amount to approximately €295 million. The excavation geometry was determined with the aid of software from Amberg Technologies during construction of the twin-tube tunnels.

### Experience as the decisive factor in tunnelling

Work on the Jagdberg Tunnel initially began in March 2008, tunnelling itself began in September. »The Jagdberg Tunnel project enjoys top priority in the companies involved. Not only because of the enormous size of the project, but also because of the special challenges thrown down during the course of construction. We chose Amberg Technologies as our partner, because Amberg has many years of tunnelling experience. We greatly value our cooperation, because we can always expect quick and efficient problem solutions. Often even as we speak on the phone«, explains Roman Bieronski, responsible for construction.

### Expertise and professional solutions

If unforeseeable problems occur, Amberg Technologies reacts flexibly, whether software reprogramming by the specialists or providing other tools. Together we have already successfully completed the »Alte Mainzer Tunnel« project. TMS Setout was also used here«, Roman Bieronski describes the fruitful cooperation.

### You can rely on Swiss precision – in any situation

One of the highlights of the Jagdberg Tunnel project was the comfortable and highly precise point setting out, which was also used for the 136 metre deep ventilation shaft: The shaft axes were automatically surveyed with the aid of TMS Setout Plus, corrected and subsequently optimally set out.

»Setting out the tunnel geometry using Amberg Technologies' TMS Setout Plus and the associated tunnel driving control are especially efficient, because all project and geometry data are available on the total station. TMS exactly defines the excavation geometry and allows ring placement by the driving team«, Guido Rocchinotti, Amberg Technologies' sales manager for Germany, explains the software's decisive advantages.

The Jagdberg Tunnel was successfully cut through in August 2009. Final completion of the traffic tunnel is planned for 2012.



**TMS Setout allows 24-hour surveying for setting out tasks.**



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[www.amberg.ch/at](http://www.amberg.ch/at)

