

# Your CHALLENGES



Unknown geological hazard zones lie ahead of your tunnel face

The construction of underground spaces remains one of the most dangerous activities in civil works, as no accurate statement can be made about the safety of the prevailing geological conditions. The usual exploration of the subsurface is often not possible over the entire excavation distance and does not achieve sufficient accuracy, especially if it is deep.



# Our SOLUTION

TSP 603 wireless -  
the system that expands your vision





## 3D-Tunnel Seismic Prediction – TSP 603 wireless

The all-in-one solution combines the proven method with cutting edge technology

- Light weight “Ready-to-use” system
- Wireless connection to all components
- Highly accurate synchronization (< 20 μs)
- Autonomous Wi-Fi network
- Simple installation within 30 min.
- Easy to operate by site personnel
- Applicable in Drill & Blast and TBM
- Measurement time
  - < 60 min. @ single shot recording
  - < 15 min. @ multiple shot recording
- Best suitable for TBM integration
- Optional with impact hammer source
- Specially designed for periodic and continuous data acquisition



## Amberg TSP Ease – The easy-to-use software

The AI and Cloud supported software leverages the digital transformation of tunnelling

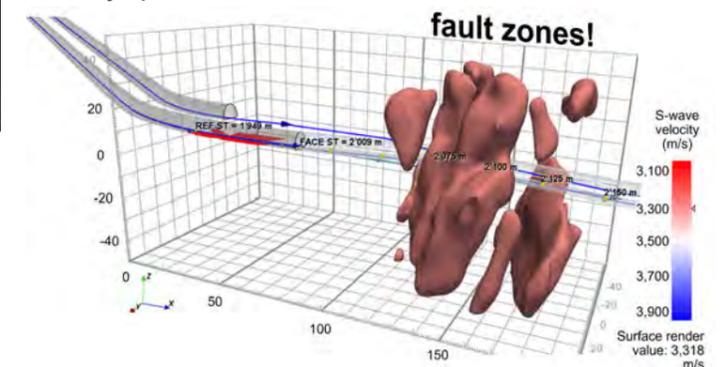
### Amberg TSP Ease Acquisition (on site)

- Acquire data by full wizard control
- Check raw data quality by AI power
- Edit easily geometry
- Upload data to Cloud



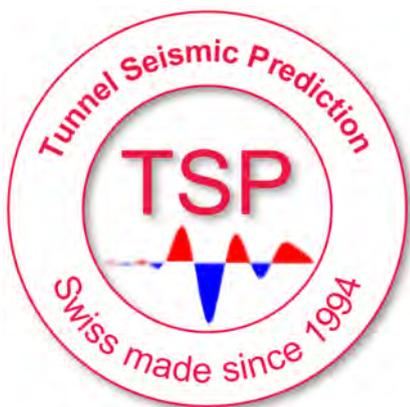
### Amberg TSP Ease Processing (on site / in office)

- Get the raw data from Cloud or file
- Process data easily and user-guided
- Have the results within 2-3 hours
- Compute geomechanical parameters: P-, S-wave velocities, Poisson, Young's, shear, bulk moduli
- Export rendered objects to a BIM capable obj-, pts- or csv-file format



## Your operational benefit

- Control the major cost driver in your tunnelling project.
- Know your geological risk on the next 150 m from face.
- Use rock properties for cost effective rock support design
- Plan countermeasures in good time.
- Reduce your probe drillings.
- No to little downtime to control your risks.
- Increase your work safety.



Watch the intro movie of  
**TSP 603 wireless**

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