

# Seismological Vibration Monitoring

## Measurement, Preservation of Evidence, Assessment

Fields of application: geothermal energy production, mining, natural gas and oil production, monitoring of underground gas reservoirs

### Immission control

- Protection of humans, buildings and facilities against vibrations
- Evidence for restrictions following the Federal Immission Control Act (BImSchG)

### Preservation of evidence

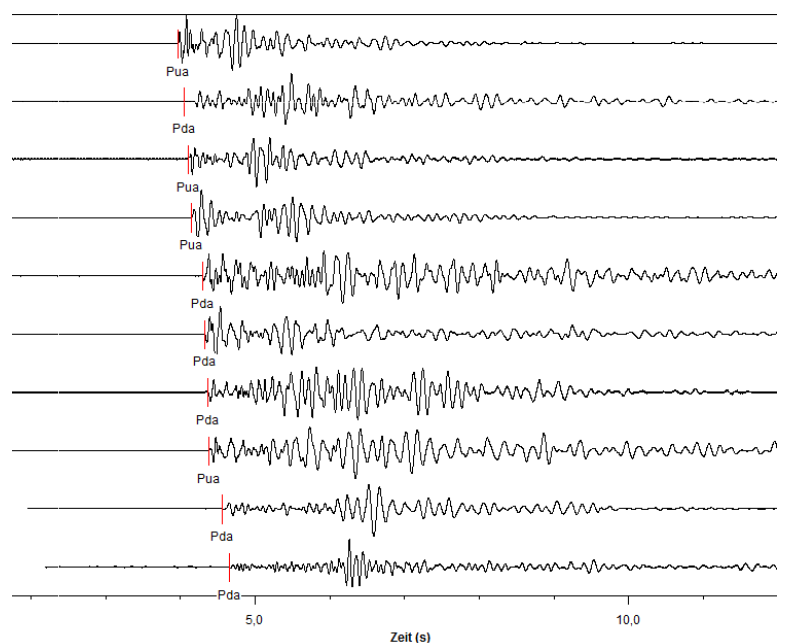
- Continuous monitoring of all vibrations
- Fully automated measurement and data transmission
- Database storage and longtime data backup at DMT
- Automated reporting
- Substantial early warning and alarm functionality

### Assessment

- Assessment of vibrations following international vibration codes
- Seismological analysis (localization, source mechanism, isoseismal maps)
- Investigation of event causes



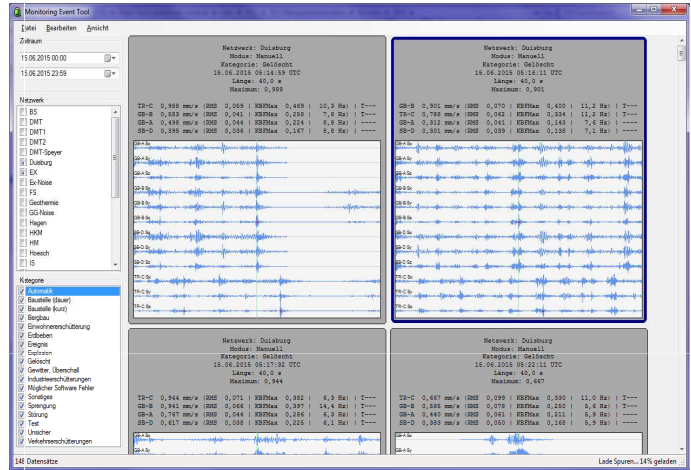
SUMMIT M<sup>Vipa</sup> with 3-component sensor.



Registration of a mining induced seismic event.



Control cabinet with DMT SUMMIT M<sup>Hydra</sup> digitizer.



DMT event control centre.

Current Projects	
Costumer	Project
RAG Deutsche Steinkohle AG (D)	Monitoring of mining induced seismicity in active and abandoned mining regions. In total over 100 seismic stations, database operated early warning and alarm functionality, data storage.
Wirtschaftsverband Erdöl- und Erdgasgewinnung e. V. (D)	Monitoring of induced seismicity in the area of the natural gas fields in Northern Germany. In total about 40 seismic stations with continuous data acquisition and transfer, database operated early warning and alarm functionality, data storage, online information system ( <a href="https://weg.dmt.de/">https://weg.dmt.de/</a> ).
RAG Deutsche Steinkohle AG (D)	Monitoring of seismicity induced by flooding of abandoned mines, database operated early warning and alarm functionality, data storage.
Geothermische Kraftwerksgesellschaft Traunreut mbH (D)	Monitoring of induced seismicity in the area of the geothermal power plant in Traunreut.
GeoX GmbH (D)	Monitoring of induced seismicity in the area of the geothermal power plant in Insheim und Landau.
Deutsch-Chinesisches Forschungsprojekt (C)	Monitoring of seismicity associated with mass movements at the Three Gorges Dam, China.
Tiroler Wasserwerke (A)	Monitoring of induced seismicity originating from tunnel construction works.

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