**Requirement of Engineering Geophysics**

[**Engineering Geophysics**](http://www.parsan.biz/engineering-geophysics.php) , [**Environmental Geophysical Services**](http://www.parsan.biz/environmental-geophysics.php)

[**Environmental Geophysical Services**](http://www.parsan.biz/environmental-geophysics.php) are valuable feedback systems to accurately predict data extracted of subsurface about its structural makeup. This marvelous factor in the field of engineering is very profound.

This safe method of procuring data through non-destructive measures is safe to the environment and economical. The data is collected by means of airborne geophysics along the earth's surface and also from tunnels and boreholes. Also with the help of 2D and 3D layer modeling of the subsoil, results are prepared to propagate GIS or BIM systems.

Geophysical exploration requires these methods in [**engineering geophysics**](http://www.parsan.biz/engineering-geophysics.php) for subsoil exploration:

* Study of seismology
* Potential method
* Radiation
* Offshore processes
* Excavation and Borehole

Geophysical application engineering is used in many applications of subsoil analysis discovery likely as:

* Subsoil study of the layer model to investigate area homogeneity and layer modeling.
* Survey and monitoring of areas that have regular landslide aversion and geological hazards.
* Geological and seismic exploration of the karst areas and tunnel channels.
* Subsoil exploration by borehole tomography, e.g. in the foundation engineering of large structures
* Cavity exploration using 3D techniques and radar systems.
* Geosynchronous SAR concept for earthquake monitoring.
* Road layer detection using GPR technique.
* Undersurface supply line exploration of electricity pipes, gas pipelines.
* [**Environmental geophysics**](http://www.parsan.biz/environmental-geophysics.php) exploration of dead or contaminated dump sites.
* Underwater depth exploration of lake or ocean floors using hydroacoustics.

Exploration techniques not only use geophysical inclusion but also include geodetic surveying to arrive at reliable results. Geophysics investigation by companies like Parsan make use of integrated solutions to get reliable answers to queries related to geophysical engineering.

At Parsan, harnessing better nondestructive techniques of geophysical analysis for the common minimum interest of the environment is emphasized so that acceptable exploration techniques for each individual client can be procured.

**Methods of geophysical engineering in brief:**

**Seismology:** 2D & 3D seismics and refraction seismics (P and S waves) are used to access earthquakes. Different methods like refraction tomography, seismic tomography in boreholes, VSP, tunnel and hydroacustics are used in their area of importance.

**Potential method:** Using electrical and electromagnetic processes and self-potential measurements including ERT technique, IP, CCR etc. to test soil resistivity and strength.

**Electromagnetic processes:** These methods calculate electromagnetic testing of the ground which include FEM, TDEM, magnetotellurics, georadar detection, metal detectors and GPR.

**Offshore method:** Methods to test earth layer at sea use techniques like bathymetry, sonar or submarine navigation, marine seismology and marine electromagnetics.

Destructive methods can include borehole geophysical investigations. These are done to measure soil properties. In this case, borehole pits are examined. These are standard Borehole probes, optical and acoustic scanner, 3D cavity scanner and radar, Wireless and anchor borehole probes.