



# geophysical service provider

with worldwide experience

# We work internationally

GEOPARTNER Ltd. for many years performed geophysical, geotechnical, geological and hydrogeological investigations. Our staff consisting of over 40 highly qualified geo-engineers, by using their knowledge, experience, modern equipment, and software, performs tasks ranging from small measurements to large geophysical and geotechnical projects in Poland and abroad. Our team is authorized to plan, head up work and to provide full technical documentation. We are selecting appropriate methods and research to the issue and integrating them properly.

**300**

successfully  
accomplished projects

**40**

highly qualified  
geo-engineers

**20**

years  
of experience

**5000**

magnetotelluric  
probes in last 5 years

**25000**

gravimetric points  
analysed

**10000**

kilometres of railway  
routes suveyed

# **Our services**

**Seismic surveys**

**Gravity surveys**

**Magnetotelluric MT/AMT/CSAMT**

**Transient electromagnetic methods TDEM**

**Electrical Resistivity Tomography ERT**

**Induced polarization TDIP/SIP**

**Electromagnetic surveys**



# Seismic surveys

The seismic method is based on the measurement and analysis of the propagation of seismic waves caused by dynamite shock or vibration. By measuring the time required for the wave to come back to the surface and the velocity of travel, we can determine structure of the studied area.

## Wide range of a surface seismic investigations



2D/3D reflection seismic

Passive seismic acquisition

Vibroseis and Explosive sources



Shallow refraction tomography

Multichannel Analysis of surface Wave MASW

S-wave survey

Cross-hole tomography

Up-hole and Down-hole measurements

Deep vibroseis 2D/3D survey

Medium range Accelerated Weight Drop survey

Reprocessing and reinterpretation of archival data

## **our equipment**

Cable-less real-time, RT System 2 by Wireless Seismic Inc.

HEMI-60 (IVI) heavy seismic vibrators

UNIVIB INOVA light seismic vibrators

Birdwagen MARK IV (IVI) seismic vibrators

Geode Geometrics 96 channels

United Service Alliance P and S AWD model 100

Propelled Energy Generator PEG-40

AWD-300T Accelerated Weight Drop 300 kg by Geopartner

Pelton and Seismic Source Decoders and Encoders

## **recommended method application**

Oil and Gas Exploration

Geothermal

Mining Exploration

Reservoir Monitoring

Deep geological survey

Engineering Geophysics

Linear infrastructure construction







# Gravity surveys

Gravimetry is a totally noninvasive surface geophysical method which is researching vertical component of the gravity field of the Earth. On the basis of measurements of the acceleration of gravity at the Earth's surface, implemented using devices called gravimeters, density maps and models, which show the subsurface distribution of rock masses, can be created. Gravimetry can be used in regional geology, local detailed mapping as well as in engineering geology issues (microgravity).

## our equipment

Gravimeters CG-5 Autograv by Scintrex

Tachymeters, Robotic Total Stations  
and GNSS/GPS Survey Equipment by Leica

## recommended method application

Petroleum Geology

Deep geological survey

Engineering Geophysics

Mining Geophysics

Anthropogenic and natural void detection

Undocumented shafts detection.

# Magnetotellurics

The magnetotelluric (MT) method uses measurements of the natural electric (E) and magnetic (H) fields at the surface of the earth to determine the distribution of electrical conductivity within the earth. Field sources are equivalent current systems in the magnetosphere (below 1Hz) and lightning discharges in the Earth-ionosphere cavity. The penetration depth depends on the resistivity of rocks and frequency.

## recommended method application

Petroleum Exploration

Mining industry

Reservoir Monitoring

Geothermal Exploration

Groundwater Exploration

## our equipment

High Power Transmitter TXU-30, 22kW from Phoenix Geophysics

System2000.net multifunctional MT/AMT/IP/CSAMT/TDEM data acquisition system

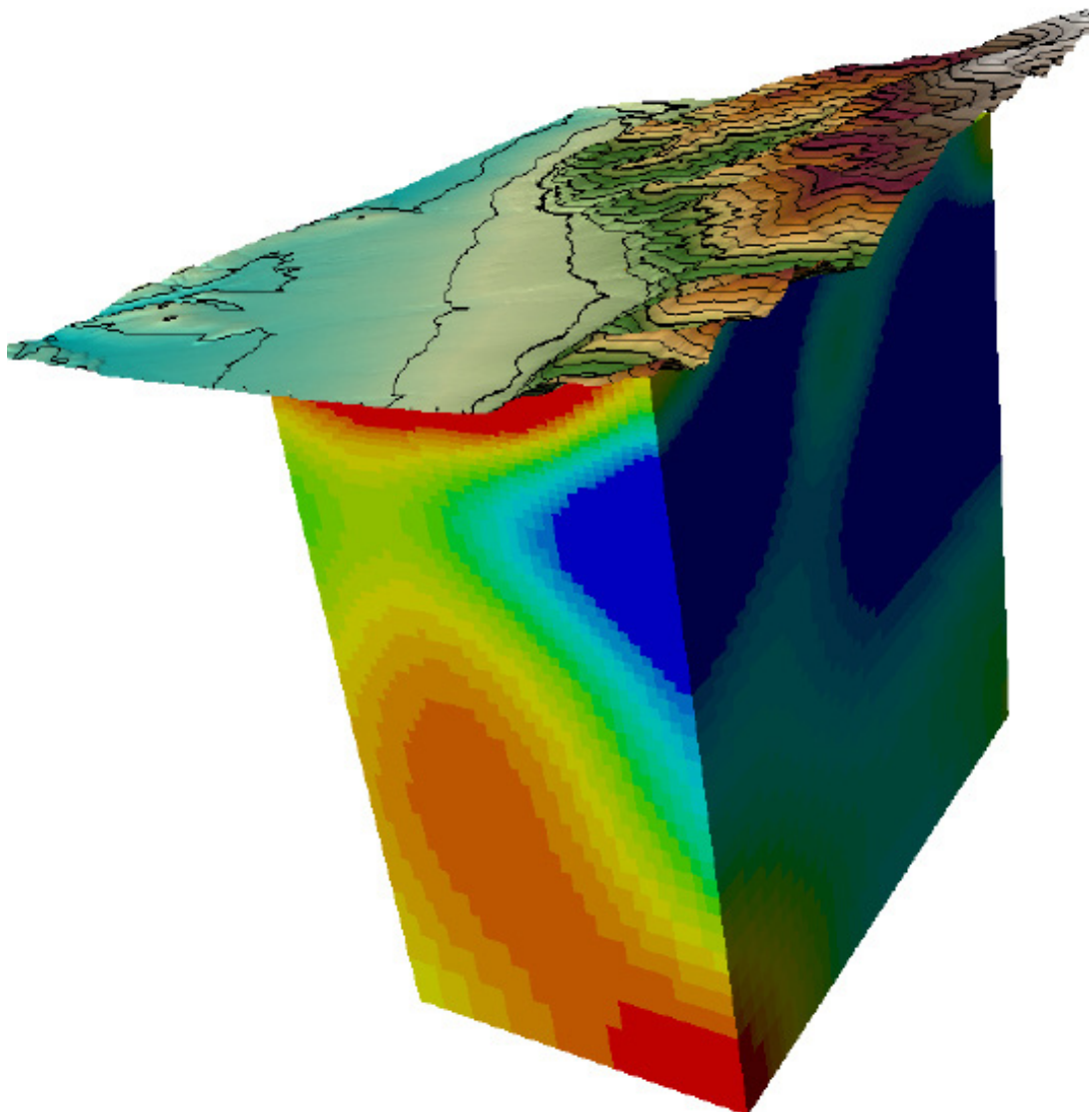
State-of-art Ultra Wide Band MT (UMT) system from Phoenix geophysics

Broadband magnetic coils

Multifunctional data acquisition system by Phoenix Geophysics Ltd

# Transient electromagnetic methods TDEM

One of electromagnetic (EM) methods, used to active diagnosis of the geo-electrical centre. Measurements are based on the induction of the electromagnetic field into the earth using an inductive loop or galvanic source (LoTEM) The induced alternating electric field is accompanied by alternated, recorded by the inductive loop receiver.





# Electrical Resistivity Tomography ERT

Electrical resistivity method uses the phenomenon of conduction of electric current through the resistive deposit, which is the measurement of soil resistivity changes, using a set of electrodes and measuring current in various configurations depending on the nature of the measurements. The method can be used in a classical variant of soundings (SGE), for which we obtain the distribution of the resistance as a function of depth for a single location or in a variant of electrical resistivity tomography (ERT). ERT method allows performing measurements and their interpretation directly in the 2D geometry on sections of any length.

## **recommended method application**

Engineering Geophysics

Mining exploration

Groundwater exploration

Ground pollution monitoring

Linear infrastructure construction

## **our equipment**

Automatic Resistivity System by GF Instruments

Multifunctional data acquisition system by Phoenix Geophysics Ltd

Multifunctional geophysical current source transmitter  
by Phoenix Geophysics Ltd

# Induced polarization TDIP/SIP

The method of induced polarization (IP) is used as an extension of the electrical resistivity method with additional measurement of electrical charge storage by geological deposit. IP method is used in the deep and intermediate range of geophysical exploration for mapping of ore or metallic materials deposits. This method also gaining popularity in the study of petroleum in determining the contours of the deposit.

## recommended method application

mineral exploration

mining industry

hydrogeophysical surveys

environmental investigations

geotechnical engineering project

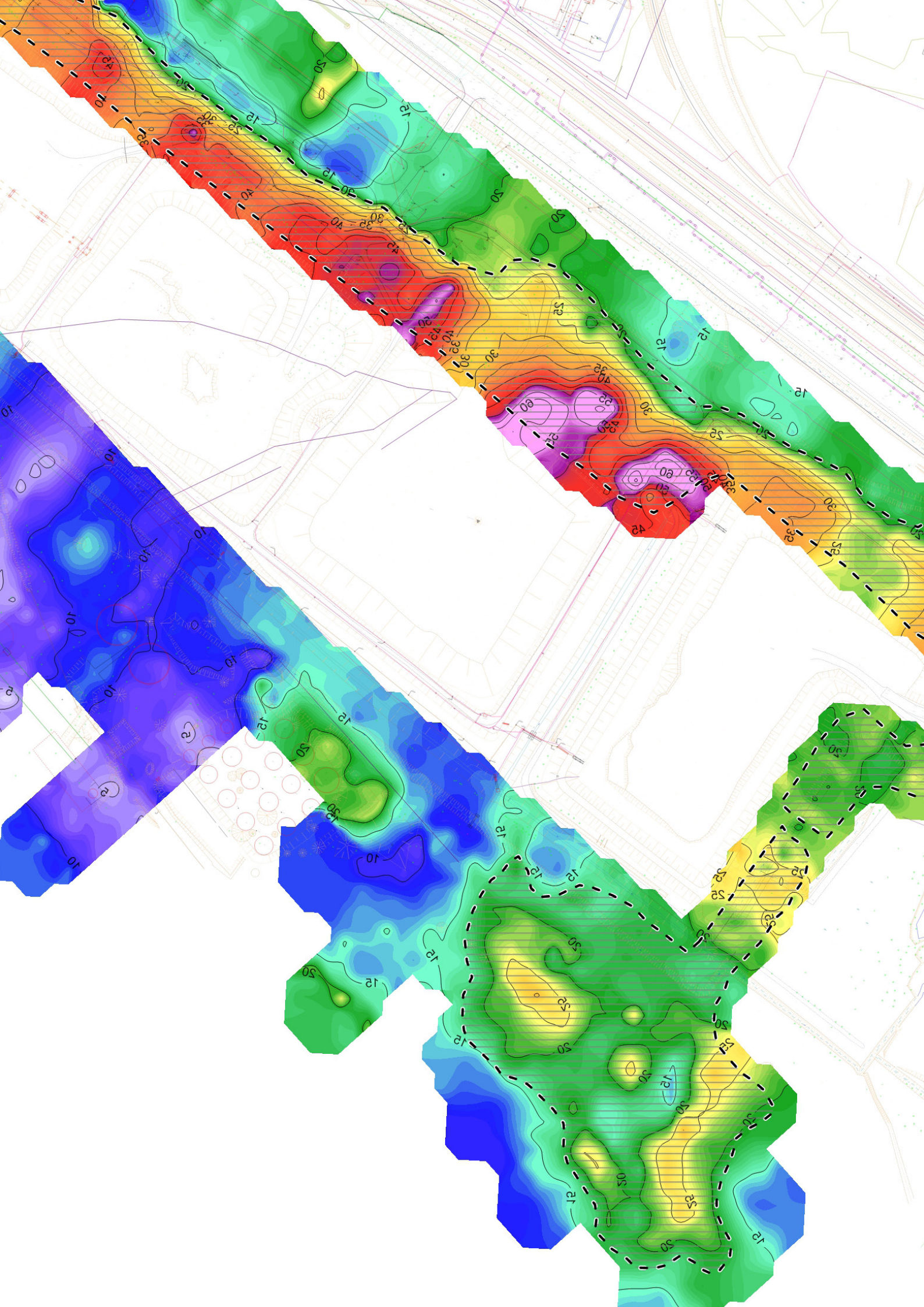
## our equipment

High Power Transmitter TXU-30, 22kW from Phoenix Geophysics

System2000.net multifunctional MT/AMT/IP/CSAMT/TDEM

data acquisition system ARES II by GF Instruments







# Electromagnetic surveys

## Electromagnetic (EM)

Research involves examination of deposit conductivity induced by the electromagnetic field. The measurement system is two coils: transmitting and receiving. The transmitter produces a primary electromagnetic field which generates a secondary electromagnetic field in the deposit. Receiver coil records secondary field size and the ratio between the primary and secondary field.

## VLF (Very Low Frequency)

The method examines the secondary fields produced by the conducting deposits, found in soil, which are subjected to the original EM signal. This is a passive method that uses radiation of strong military radio as the primary signals.

## recommended method application

Engineering Geophysics

Ground pollution monitoring

Mining exploration

Linear infrastructure construction

Groundwater exploration

Archaeology

## our equipment

MAG/VLF by GEM System

Conductivity meter CMD-4/6 by GF Instruments

Conductivity meter EM-3 MK2 Geonics

# Ground Penetrating Radar Surveys GPR

The georadar method, otherwise known as GPR (Ground Penetrating Radar), belongs to a class of electromagnetic geophysical methods that analyze the changes of an electromagnetic wave injected into the ground. The transmitting antenna emits a wave in the subsurface that is reflected at the boundary between two layers having different dielectric constants and then is recorded by the receiving antenna. The energy of the reflected pulse is proportional to the difference between the dielectric constants of the two media.

## **recommended method application**

Linear infrastructures construction

Engineering geophysics

Archaeology and Forensics

## **our equipment**

GPR Mala GS Ramac X3M (25 – 1600 MHz)

GPR IDS radar antennas

Borehole Radar Mala Geoscience 100 MHz





# Our last realizations

**LAOS\_  
COPPER**

DC & Induced Polarization

**KOSOVO\_  
CHROMITS**

Magnetic & Gravimetric Surveys



**UKRAINE\_  
OIL & GAS**

2D Seismic Surveys

**BULGARIA\_  
POLIMETALS**

3D Magnetotellurics

## **Jacek Słowiński**

CEO

jacek.slowinski@geopartner.pl  
+48 602 442 674

## **Marek Wojdyła**

DIRECTOR OF GEOPHYSIC DEPARTMENT

marek.wojdyła@geopartner.pl  
+48 723 001 631

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### **Geopartner Ltd.**

ul. Skośna 39B  
30-383 Kraków  
POLAND

### **Contact:**

+48 (12) 261 35 00  
+48 (12) 261 35 01  
biuro@geopartner.pl

# **[www.geopartner.pl](http://www.geopartner.pl)**

