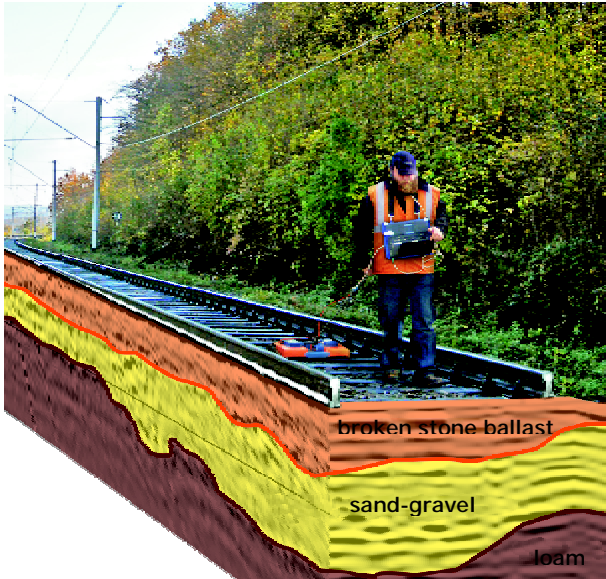


## ENGINEERING GEOPHYSICAL SURVEYS FOR RAILROADS



GEOTECH company has significant experience in providing geological and geophysical survey on Russian railroads. By this moment we have examined more than 3000 km of Russian railroads and while the examination we used a complex of geophysical methods that provide reliability and credibility of the results.

Using the latest scientific and technical achievements a highly professional team of developers constantly improves already manufactured equipment and designs new machines. Through the years of the work our specialists developed and manufactured a wide range of high solid geophysical equipment that operates without a hitch in negative climatic conditions and may successfully compete with foreign devices of similar class.

### APPLICATIONS:

- Engineering geological surveys for railroads and overbridges construction
- Examination of ballast section
  - ◆ Determination of thickness and composition of structural layers
  - ◆ Location of abnormal zones
- Study of engineering geological conditions of the zones liable to deformation:
  - ◆ Mapping of bedrock foundation roof
  - ◆ Determining occurrence level of subsoil waters and upgrade water existence
  - ◆ Locating zones of specific subsoil spread (peat, silt, salt subsoil etc.)
  - ◆ Permafrost top tracing
  - ◆ Detection of heavy icy rocks
  - ◆ Examination of taliks, supercooled water brines with permafrost
  - ◆ Examination of permafrost dynamics (seasonal freezing zones)
- Study of dangerous engineering geological processes:
  - ◆ landslides
  - ◆ floating earth
  - ◆ karstic phenomena
- Examination of ballast section
  - ◆ Determination of thickness and composition of structural layers
  - ◆ Location of abnormal zones
- Checking embankment structure compliance with project documentation
- Mapping of underground utility lines

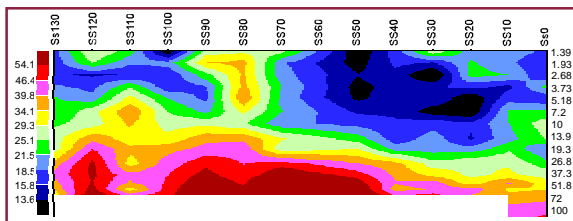


Multichannel GPR complex was designed especially for high-speed survey of ballast section and natural ground formation in order to determine deformation zones.

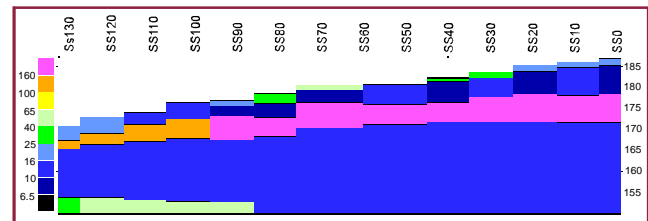
## INTEGRATED ENGINEERING GEOPHYSICAL SURVEYS OF THE DEFORMED SEGMENT OF A RAILWAY



Section of apparent resistances



Geo-electrical section - result of vertical electric sounding interpretation



Geological geophysical section  
of the deformed area of railways

