

Autonomous neural network-based system for detecting underground objects using electromagnetic sensors consists of a mobile platform on which the following modules are sequentially arranged and electrically connected: an electromagnetic sensor module, comprising an induction sensor and a ground-penetrating radar operating at 450 MHz, a signal preprocessing module, and a data analysis module containing a computing unit and non-volatile memory with the parameters of the neural network classifier. The data analysis module is electrically connected to the mobile platform's motion control unit and to the module for storing and visualizing results. The electrical connections are configured as follows: electromagnetic sensor module - signal preprocessing module - data analysis module, with branches from the data analysis module to the motion control unit and to the module for storing and visualizing results. A feedback loop is established between the data analysis module and the motion control unit.