



GPR antenna testing based on COST Action TU1208 guidelines

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Within the framework of the COST Action TU1208, guidelines for testing the performance of Ground Penetrating Radar (GPR) equipment were defined, with a main focus on checking the antenna functioning. Four tests were proposed, to evaluate the signal-to-noise ratio, signal stability, linearity in the time axis, and long-term stability. For each test, a threshold was suggested, to determine whether the behaviour of an antenna could be considered effective or not. Also, these tests can be conducted periodically and the obtained values can be used to monitor the performance of equipment over time, and in particular to see how the reliability and accuracy of antennas evolves with their use. If several antennas are tested at the same time, their performance can be compared.

The Faculty of technical sciences in Novi Sad (FTS), Serbia, owns two ground-coupled GPR antennas with central frequencies of 400 and 900 MHz. We carried out a first series of measurements to test both antennas according to the TU1208 guidelines. Then, for the 900 MHz antenna, we repeated the tests twice, after six and nine months. The values obtained for both antennas in the first series of tests were compared. Moreover, for the 900 MHz antenna, an analysis of performance evolution was done.