PARTNER SEARCH FORM

DATE:07.01.2011

PROJECT INFORMATION

TITLE: DEVELOPMENT OF ELECTROMAGNETIC METHODS AND DATA FUSION FOR DETEMINATION OF POLLUTED AREA, CONCENTRATION OF POLLUTANTS IN SOIL AND OF PENETRATION DEPTH

ACRONYM: SYSARR

SUMMARY: The electromagnetic methods use an electromagnetic wave, appropriate generated, at low frequency in the case of induction procedures and at high frequency for Ground Penetrating Radar (GPR). Due to modification in dielectric permittivity, electrical conductivity and eventually of magnetic permeability, the electromagnetic field will be influenced by the different layers of soil, thus appearing the possibility to detect pollutants concentration and their penetration depth in soil. Due to relative high operation frequency of GPR (hundreds of MHz to GHz), it penetrates relatively slightly a humid soil like the soil of Black Sea seashore – the beach zone and the adjacent ones and the information are obtained from small depths but with great spatial resolution. By data fusion of the two methods, is possible to detect the concentration of pollutants in soil and their distribution in depth as far as tens of meters, this being the purpose of this project.

KEYWORDS*: electromagnetic induction method, Ground Penetrating Radar, data fusion, pollutants concentration

CALL: BS-ERA.NET 2010

NAME(S) of the PARTNER(S) INVOLVED: National Institute of Research and Development for Technical Physics, Iasi, Romania - NIRDTP, Head of Nondestructive Testing Department, Prof.Dr.Raimond Grimberg; **Technical University Gh.Asachi, Iasi, Romania -UTI;-Polytechnics University, Bucharest, Romania –**Center for Electrical Engineering assisted by computer – CIEAC –UPB- Prof.Dr.Ioan Daniel; **Ovidius University, Constanta, Romania –UOC-** Prof.Dr.Eden Mamut.

SCIENTIFIC AND TECHNOLOGICAL EXPERTISE OFFERED*:
NIRDTP has expertise in the domain of electromagnetic investigation of soil, detection of buried objects, detection of archaeological sites, detection of cracks and voids in soil dams. CIEAC UPB has expertise in inversion and fusion of data delivered by investigation equipment using electromagnetic fields. UTI has expertise in the analysis of soil, emphasizing of soil pollutants, mapping, design and realization of auxiliary devices for measurements and investigations. UOC has expertise in chemical analysis of the soil constituents, in field measurements and statistical analysis of data.

PARTNER SOUGHT

SCIENTIFIC AND TECHNOLOGICAL EXPERTISE REQUESTED:
Research Institutes, R&D companies with experience in ground, water and pollutants sampling, local public authorities to provide data with respect to infrastructures and geology of the designated investigated area

EXPECTE D CONTRIBUTION TO THE PROJECT:
Partners are mainly expected to provide all available documentation concerning scientific, technological, environmental and economic research activities (publications made by their institutions as well as made by joint research projects) activities in which they attend in the field of electromagnetic and chemical methods for detection and determination of pollutants in soil.

ORGANISATION TYPE*:

☒ Higher Education	☒ Research Institute	
☒ R&D Company	☒ SME	☐ Other

HOW MANY PARTNERS ARE REQUIRED?
3 partners (1 Turkey)

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*** mandatory fields**