



# OPTIMISED RADAR TO FIND EVERY UTILITY IN THE STREET



Street works are a familiar problem for most of us; the plant buried beneath our streets is complicated and the situation is getting worse. Maintaining and renewing our buried infrastructure causes traffic congestion and the traffic is increasing, with a 50% rise in vehicles being predicted over the period from 1996 to 2030 in the UK alone. The position is similar in the rest of the European Union.

Poor utility mapping increases risk of damaging buried infrastructure during street works. This can cause:

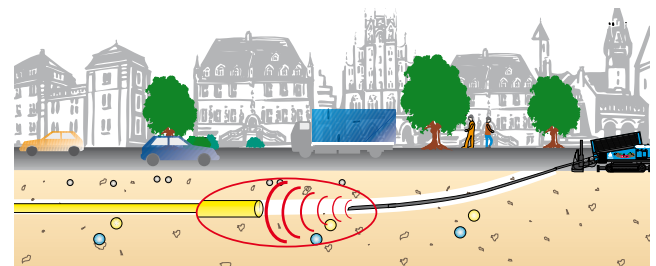
- safety problems
- Infrastructure destruction (e.g. damaged fibre optic cables can cause costs of several million €)
- Extended construction periods
- Inappropriate use of innovative technologies (e.g. No Dig Technologies) causing negative image and declining usage of those technologies

Pressure is now increasing to minimise the disruption to traffic flow caused by street works, and one of the keys will be a more accurate knowledge of what is buried where, so that excavation is only undertaken when absolutely necessary.



GPR Technology can help avoiding these problems by generating and refining of location information and in this regard, Ground Penetrating Radar is potentially extremely useful because of its capability to locate the increasing proportion of non-metallic plant that has been used in recent years.

To meet the challenge of a demanding operational environment, GPR is undergoing constant refinement and development by a number of manufactures world-wide.



**The European Commission** has recognised the potential of GPR technology to safeguard the environment and is supporting a project to improve the technology under the Sixth Framework Programme (Global Change and Ecosystems)

The project (known as **ORFEUS**) has two main goals:

- To improve the performance of GPR deployed on the surface to provide underground maps.
- To develop a new radar to provide a look-ahead capability for Horizontal Directional Drilling equipment.

**ORFEUS** is a European-wide project being undertaken by a consortium of nine organisations consisting of equipment developers, user organisations and academic institutions. The intention is to develop the new equipment as described overleaf, and then to subject it to a Europe-wide field trial programme on a range of carefully selected test sites to evaluate



luate the performance of the new equipment against a base line of present day state-of the art equipment.

The project is scheduled to last for three years and its total value is €5M, 50% of which is contributed by the European Commission and 50% by the Consortium.

An essential part of the project is to develop a strong user input into the development and evaluation phases of the work. We seek to develop links to create an Advisory Panel, comprising a balanced spectrum of members from diverse utilities and highways authorities who can both be briefed on progress within **ORFEUS**, and also who can give the project practical advice on any operational or user issues. At this stage we would expect between six and twenty members of this ad-hoc group

The Advisory Panel, made up from members drawn from across the EU, will work as a primarily self-funding group. Representatives of utilities, highway authorities and others

who manage, regulate, map or carry out streetworks throughout Europe are invited to take part in this activity. Individuals within these organisations will be invited to take part in the activities of the Panel and have an early view of the research and development.

Involvement in the project will:

- ensure early access to the technology
- allow you to understand its potential impact on your business plans
- aid in planning for asset management
- provide you with an opportunity to influence the research and the establishment of realistic test conditions for technology evaluation

To register interest in joining the Advisory Panel please contact the ORFEUS-Project manager:

**howard.scott@osys.co.uk**

## ORFEUS WEB BASED USER QUESTIONNAIRE

A key objective of ORFEUS is to develop a comprehensive set of User Requirements to underpin both the development of the new technology and the subsequent testing and evaluation of the resulting equipment. The evaluation (separate from the testing, and carried out by the User project-partners) will benchmark the new equipment against the existing state-of-the-art and the User Requirements.

It is essential that the User Requirements are robust, and represent the needs of as complete a cross section of potential users as possible. To assist in the gathering of information, we have developed a questionnaire to determine what users of these technologies would like to be able to detect. We have included such questions as:

- **What buried utilities are you interested in locating, and at what depth?**
- **What other below ground features are you interested in locating?**
- **What minimum level of accuracy will you require from any new locating technologies?**
- **What degree of resolution is acceptable - i.e. how far apart must two objects be before they are recognised as two targets rather than one?**
- **Under which surfaces do you want to locate buried utilities and other buried objects?**

Your involvement in completing this questionnaire will help us to develop a Specification that most closely meets the requirements of all users of new location technologies and services. Please assist us by visiting the web site to complete the questionnaire. If you wish to receive a copy of the results analysis, then simply complete the relevant section of the questionnaire.