

**Mapping the  
Underworld**



**Mapping the Underworld and ORFEUS:**

*Joint two-day workshop, February 24<sup>th</sup> and 25<sup>th</sup> 2010  
Ordnance Survey Business Centre, Southampton, UK*

This multi-disciplinary event brings the most advanced thinking and developments in GPR together with the foremost worldwide thinking in mapping buried services.



# ORFEUS Final Project Workshop

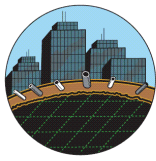
*New developments in surveying buried plant using advanced Ground Penetrating Radar (GPR)*

**Ordnance Survey Business Centre**

**Southampton, UK. Wed 24<sup>th</sup> February 2010**



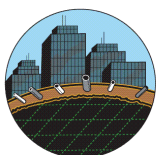
Time	Presentation
9:30 am	<b>Arrival. Tea/coffee/registration (Doors open at 9:00 for ORFEUS/MTU Display set up)</b>
10:00	<b>Howard Scott – ORFEUS Programme Coordinator</b> <i>Welcome and Introductions</i>
10:10	<b>Dave Pinchbeck of GERG, Brussels</b> <i>Reminder of the ORFEUS aims and objectives</i>
10:30	<b>ORFEUS team report: Surface Radar</b> <b>Guido Manacorda, IDS Pisa Italy and Massimiliano Pieraccini University of Florence</b> <i>Developing and testing the prototype enhanced radar(s) and antennas</i>
11:00	<b>Break for tea/coffee (Exhibition Area)</b>
11:20	<b>ORFEUS team report: Drill tip Radar</b> <b>Elmar Koch, Tracto Technik, Lennestadt, Germany</b> <i>Developing the trenchless look ahead radar for mounting on Horizontal Drilling Equipment (HDD)</i>
12 noon	<b>ORFEUS team report: Soils and Antennas</b> <b>Evert Slob, T U Delft, Netherlands; Pavel Pospisil, University of Brno, Czech Republic</b> <i>Electrical characteristics of soils and the survey environment report, and the impact on development of new GPR antenna systems</i>
12:30 pm	<b>Buffet Lunch and Networking</b>
1:30	<b>ORFEUS team report: Results and Trials</b> <b>Howard Scott, OSYS Technology UK and Sylvain Murgier of GDF Suez</b> <i>Interpreting the live ORFEUS field trials - what has been achieved in the practical trials, have we met our targets? <u>Does ORFEUS work?</u></i>
2:00	<b>Enrico Boi of TST Engineering and Derek Dixon of Dublin City - End User Views</b> <i>Two experienced GPR end-users present their critical views and observations of GPR surveys in general, recent experience, and as potential users of the ORFEUS project developments – considering achievements and disappointments identifying further user needs.</i>
3:00	<b>Break for tea/coffee (Exhibition Area)</b>
3:30	<b>ORFEUS team report: Were the Aims met?</b> <b>Mike Farrimond of UKWIR</b> <i>Reminder of the user requirements used to set the scope of ORFEUS, and how well these requirements were met.</i>
3:45	<b>ORFEUS team feedback: Chaired by Dave Pinchbeck of GERG</b> <i>User feedback and user panel session: An opportunity for open discussion and to answer questions, identify progress and opportunities that can build on ORFEUS as the project closes.</i>
4:00	<b>Operational systems demonstrations and videos/photos</b> <i>Live demos, equipment exhibition, trial data (hands on)</i>
4:00 5:00	<b>Optional visit to Ordnance Survey HQ (proposed)</b>
8:00 for 8:30	<b>Joint informal Dinner at local hotel with the ORFEUS and the MTU project teams</b>



## Mapping the Underworld / ORFEUS Joint Workshop

Thursday, February 25<sup>th</sup> 2010, Ordnance Survey Business Centre, Southampton

Time	Presentation
9.00	<b>Registration, tea and coffee.</b>
9.45	<b>Welcome and Introduction – Professor Chris Rogers</b>
10.00	<b>Keynote Speech – Jim Anspach</b> <i>Jim Anspach is a Civil Engineering Consultant and Chairman of the ASCE Construction Standards Council. Outlining technology, procedures and latest research in the USA.</i>
10.40	<b>MTU Lecture Session One – Philip Atkins, University of Birmingham</b> <i>Explanation of MTU's advances in sensor development and thinking, bringing the focus back to the problems we face in the UK.</i>
11.10	<b>Tea and Coffee Break</b>
11.30	<b>ORFEUS Lecture Session One – Guido Manacorda of IDS</b> <i>Following from the findings of the ORFEUS field trials and research program: what may ORFEUS mean for survey inspection quality and performance of commercial 'next generation' downward GPR?</i>
12.00	<b>Industry Viewpoint</b> <i>Presentation covering the challenges of working in the roads, and how the outputs of the MTU initiative can be integrated into practice.</i>
12.30	<b>Lunch</b> <i>Opportunity to comment on MTU concept vehicle and ORFEUS output.</i>
13.30	<b>MTU Lecture Session Two – Dr Steve Pennock, University of Bath</b> <i>How we plan to combine the sensors' outputs, introduce intelligence from utility records and ground condition records/measurements, and fuse the resulting data.</i>
14.00	<b>ORFEUS Lecture Session Two – Mienhof Rameniel of TraktoTechnik</b> <i>Following from trials of the ORFEUS drill head radar: what is the future potential for reducing risk in no-dig utility installation if new drill head GPR tools and sensors are deployed in 'look ahead and look sideways' Horizontal Directional Drilling tools?</i>
14.30	<b>MTU Breakout Session – Led by Russell Hayes</b> <i>Alternative procedures to improve streetworks are being researched in an associated doctoral study. Russell will outline his ideas and seek views via workshop discussion.</i>
15.20	<b>Tea and Coffee Break</b> <i>Voting on matters discussed in breakout session</i>
15.45	<b>Mike Darracott – Ordnance Survey</b> <i>The view of Ordnance Survey – creating knowledge from mapping data</i>
16.05	<b>Reporting on Voting and Plenary Discussion – MTU Team</b>
16.25	<b>Summary and Concluding Remarks – Professor Chris Rogers</b> <i>Where we plan to go from here and the links with international initiatives</i>
16.30	<b>Formal Close</b>



We are pleased to announce this two-day conference jointly organised by ORFEUS and Mapping the Underworld (MTU). Both days are closely related, presenting an opportunity to look at advanced detection, mapping and data integration issues.

The superb conference venue has kindly been made available by Ordnance Survey, the UK's national mapping agency.

## **ORFEUS**

ORFEUS is a Europe-wide project undertaken by a consortium of nine organisations comprising equipment developers, GPR consultants, user organisations and academic institutions. The three year project closes at Easter 2010, and has developed two new advanced radar systems, one to look ahead and sideways from the drill tip of a Horizontal Directional Drill, and the other to significantly advance the penetration and accuracy of downward looking radar. These full-scale prototype radars have now been tested in the laboratory and the field, and the prototype systems performance sets expectations as to what is possible in the future.

## **Mapping the Underworld**

Mapping the Underworld aims to develop the means to locate, map in 3D and record, using a single shared platform, the position of all buried utility service pipes and cables without excavation (our goal is 100% detection).

MTU is an EPSRC-funded multi-disciplinary project comprising researchers from the Universities of Birmingham, Bath, Leeds, Southampton, and Sheffield. The initiative started in 2005 via four complementary initial research projects, while the current multi-sensor device project began in January 2009. This will be the second annual workshop.

## **MTU and ORFEUS**

The organisers believe the potential of better integrated mapping and of better location tools points the way to a step change in how we install and fix buried services, either with 'dig' or with 'no-dig' techniques. This multi-disciplinary event brings the most advanced thinking in GPR together with the most advanced thinking in mapping buried services. Delegates may choose either day, however attending both days will present the opportunity to visit the poster sessions and displays and give delegates a clear view of where to set their sights in planning streetworks when new mapping and radar tools become commercially available.

## **Day One: ORFEUS Final Project Workshop**

**Wednesday, 24<sup>th</sup> February**

The project is embarking on its final phase and will address its two aims:

- 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

## **Day Two: ORFEUS and Mapping the Underworld Joint Workshop**

**Thursday, 25<sup>th</sup> February**

Day Two is a Mapping the Underworld workshop, looking at multi-utility issues surrounding accurate mapping of underground utilities using a variety of sensors, combined with intelligent incorporation of records and ground condition data, and the wider issues of data quality and accuracy in the context of streetworks practices.

## **Delegate registration**

Registration is managed by OSYS technology and the Mobile Computer Users Group (MCUG).

### **Prices (GBP)**

#### **Day 1: Wednesday 24<sup>th</sup> February**

ORFEUS Workshop. *£100 plus VAT*

#### **Day 2: Thursday 25<sup>th</sup> February**

Mapping the Underworld Workshop. *£100 plus VAT*

#### **Dinner: Wednesday 24<sup>th</sup> February**

Location TBC. Time 8:00 for 8;30. *£45 plus VAT*

### **Special Offers**

#### **Both Days and Dinner**

*£225 plus VAT*

Please note that there is no charge for attendance at the Mapping the Underworld Workshop for the official MTU project partners.

### **REGISTER**

We expect to have full on-line booking available from the 1<sup>st</sup> January. In the meantime there is an interim delegate registration form available at [www.orfeus-project.eu](http://www.orfeus-project.eu) and follow the links through user workshops.

### **Poster session**

Official members of the ORFEUS Consortium and MTU official project partners may bring posters or hand outs relating to their ORFEUS or MTU work free of charge. Space will be shared ad-hoc on a first come basis. Please advise the organisers in advance if you are bring a poster or display board. Please note that there is no room for equipment displays.



### **MCUG (Mobile Computer Users Group) and Forum 2010 Discount**

*Birmingham, May 13th and 14th 2010*

The Mobile Computer Users Group (MCUG) has members from utilities and other public authorities and service businesses. It runs seminars and conferences relating to the use of mobile and computerised data and systems in the field. MCUG is associated with the ORFEUS project and is acting as organiser of this event, handling the bookings. Attendance at this event also allows delegates to book the MCUG annual forum in May 2010 at a special discounted rate equivalent to the member's rate.

ORFEUS & MTU WORKSHOP REGISTRATION REQUEST. We prefer online booking and inquiries via the ORFEUS or MTU web site, **As an alternative you can FAX this page to +44 191 265 4685**

**NAME**

**COMPANY/UNIVERSITY & ADDRESS**

**TELEPHONE & EMAIL**

**YOUR REQUEST:**    **Whole Event Y/N**    **ORFEUS day Y/N**    **MTU Day Y/N**    **Dinner Y/N**