

## **COST ACTION TU1208**

### **CIVIL ENGINEERING APPLICATIONS OF GROUND PENETRATING RADAR**

#### *First Action's General Meeting*

Rome, Italy, 22-24 July 2013

#### *Practical Information Guide*



#### **Dates**

22 July 2013 (9 – 19:00)

23 July 2013 (9 – 19:00)

24 July 2013 (9 – 13:30)

#### **Venue**

“Roma Tre” University

Engineering Department

via Vito Volterra 60-62, Rome, Italy



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## Introduction

Dear Participant,

It is our great pleasure to welcome you to the First Action’s General Meeting of the COST Action TU1208, “Civil Engineering Applications of Ground Penetrating Radar.”

This event will constitute a valuable opportunity to meet many participants of the COST Action TU1208, from several Countries, and a prestigious forum for a promising discussion and a wide exchange of knowledge and experience related to the use of GPR in civil engineering problems. Overall, the First Action’s General Meeting will include the Action’s Management Committee Meeting, the Steering Group Meeting, and the Meetings of the four Working Groups composing the general pattern of the scientific program of the Action.

During this event, we are going to address the state of the art, advancement, ongoing studies and open problems, in the fields of GPR technologies and methodologies, inspection strategies and practices, electromagnetic methods for the modelling of GPR scenarios, and numerical algorithms for the processing of GPR data. Although the COST Action TU1208 is mainly focused on the use of GPR in civil engineering tasks, we will share information and ideas with experts employing GPR in different fields of application, or exploiting other Non-Destructive Testing techniques in civil engineering. The event will also emphasize the importance of the relations between the discussed scientific-technological issues and the social and economical concerns. It is foreseen to exchange and discuss preliminary ideas about the definition and coordination of test scenarios, representing both typical and unusual situations that may occur in civil engineering tasks, for an effective comparison between different advanced GPR equipment, inspection procedures, electromagnetic methods and data-processing algorithms.

We will be honoured to have Prof. David J. Daniels with us, giving a talk on Monday on GPR design challenges. He will provide an overview of the system design issues for the various modulation techniques and suggest what improvements in subsystems - such as antennas, receivers and transmitters - are needed to increase overall GPR performance.

We will be honoured by the presence of Dr. Erica Utsi as well, presenting on Monday the EuroGPR activities. Therefore, we will have the possibility to discuss with her about ideas and proposals concerning joint initiatives between the EuroGPR Association and the COST Action TU1208.

We are also delighted to announce that Prof. Antonis Giannopoulos, Chair of the Working Group 3, is going to give a plenary talk on Tuesday about the well-known GPR simulation tool GPRMAX that he has developed in his career as a researcher. He will present an overview on the progress reached by the FDTD modelling over the last 20 years, also providing some instructions on possible developments to be pursued in the next future.

It will be also a great pleasure to have Dr. Immo Trinks, Chair of the Working Group 4, giving a plenary talk on Wednesday about large-scale archaeological prospection using GPR array systems. He will present very interesting results collected by his research team at the Roman town of Carnuntum, Austria.

The call for nine Short Term Scientific Missions (STSMs) funded by the COST Action TU1208 will be kindly presented by Prof. Marian Marciniak, Manager of the STSMs. Such missions will be important means to develop linkages and scientific collaborations between participating institutions involved in the Action.

We sincerely thank COST for funding the COST Action TU1208 and the First Action’s General Meeting; also, we deeply thank “Roma Tre” University for hosting this event and for providing facilities.

We wish you a successful meeting!

With my best regards,

Lara Pajewski, Chair of the COST Action TU1208

## About COST



Founded in 1971, COST – European Cooperation in Science and Technology – is the first and widest European framework for the transnational coordination of nationally funded research activities. It is based on an inter-governmental agreement between 35 European countries. COST enables break-through scientific developments leading to new concepts and products and thereby contributes to strengthen Europe’s research and innovation capacities. It is a unique means for European researchers to jointly develop their own ideas and new initiatives across all scientific disciplines through trans-European networking of nationally funded research activities.

COST key features are:

- building capacity by connecting high-quality scientific communities throughout Europe and worldwide;
- providing networking opportunities for early career investigators; and
- increasing the impact of research on policy makers, regulatory bodies and national decision makers as well as the private sector.

Through its inclusiveness, COST supports integration of research communities, leverages national research investments and addresses issues of global relevance.

As a precursor of advanced multidisciplinary research, COST plays a very important role in building a European Research Area (ERA). It anticipates and complements the activities of the EU Framework Programmes, constituting a “bridge” towards the scientific communities of emerging countries. It also increases the mobility of researchers across Europe and fosters the establishment of scientific excellence in the nine key domains:

- Biomedicine and Molecular Biosciences
- Food and Agriculture
- Forests, their Products and Services
- Materials, Physics and Nanosciences
- Chemistry and Molecular Sciences and Technologies
- Earth System Science and Environmental Management
- Information and Communication Technologies
- Transport and Urban Development
- Individuals, Societies, Cultures and Health

In addition, Trans-Domain Proposals allow for broad, multidisciplinary proposals to strike across the nine scientific domains.

COST invites researchers throughout Europe to submit proposals for COST Actions through a continuous Open Call. The two collection dates a year are announced in the Official Journal of the European Union and on the COST website. Following a thorough evaluation and selection process, the decision for funding a proposal is taken by the COST Committee of Senior Officials (CSO), within eight months from the collection date. Successful proposals are approved to become COST Actions.

COST is funded through the EU RTD - Research and Technological Development - Framework Programmes.

For more information, visit [www.cost.eu](http://www.cost.eu)!

## About COST Transport and Urban Development (TUD) Domain



The COST Transport and Urban Development (TUD) Domain fosters research coordination in the fields of transport and the built environment, which play a strategic role in the modern society and economy. The Domain is by definition cross-sectoral and multidisciplinary, encompassing a wide range of scientific expertise within the transport and land use planning, design, and management activities with a special emphasis on the strong interrelationships among the relevant policy fields as well on all aspects related to sustainable development.

The TUD Domain activities should be innovative and complementary to other European programmes in the relevant fields. The aim is to cover both basic and applied research activities including technical and technological developments and their changeovers that are relevant to policy and decision making processes. A significant concern is devoted to activities exploring new research needs and developments.

The Chair of the TUD Domain is Prof. Cristina Pronello (Politecnico di Torino, Italy). The Science Officer of the TUD Domain is Dr. Thierry Goger (COST Office, Belgium).

Current COST Actions within the TUD Domain are:

- TD1106 Urban Agriculture Europe (UAE)
- TU0803 Cities Regrowing Smaller – Fostering Knowledge on Regeneration Strategies in Shrinking Cities across Europe
- TU0901 Integrating and Harmonizing Sound Insulation Aspects in Sustainable Urban Housing Constructions
- TU0902 Integrated Assessment Technologies to Support the Sustainable Development of Urban Areas
- TU0903 Methods and Tools for Supporting the Use, Calibration and Validation of Traffic Simulation Models
- TU0904 IFER - Integrated Fire Engineering and Response
- TU0905 STRUCTURAL GLASS – Novel Design Methods and Next Generation Products
- TU1001 P3T3 – Public Private Partnerships in Transport: Trends and Theory
- TU1002 Accessibility Instruments For Planning Practice In Europe
- TU1003 MEGAPROJECT: The Effective Design and Delivery of Megaprojects in the European Union
- TU1004 Modelling public transport passenger flows in the era of intelligent transport systems
- TU1101 Towards safer bicycling through optimization of bicycle helmets and usage
- TU1102 Towards Autonomic Road Transport Support Systems
- TU1103 Operation and safety of tramways in interaction with public space
- TU1104 Smart Low Carbon Regions
- TU1105 NVH analysis techniques for design and optimization of hybrid and electric vehicles
- TU1201 Urban Allotment Gardens in European Cities - Future, Challenges and Lessons Learned
- TU1202 Impact of climate change on engineered slopes for infrastructure
- TU1203 Crime Prevention through Urban Design and Planning
- TU1204 People Friendly Cities in a Data Rich World
- TU1205 Building Integration of Solar Thermal Systems (BISTS)
- TU1206 A European network to improve understanding and use of the ground beneath our cities (SUB-URBAN)
- TU1207 Next Generation Design Guidelines for Composites in Construction
- TU1208 Civil Engineering Applications of Ground Penetrating Radar
- TU1209 Transport Equity Analysis: assessment and integration of equity criteria in transportation planning (TEA)

For more information, visit <http://www.cost.eu/tud/>

## About COST Action TU1208

### “Civil Engineering Applications of Ground Penetrating Radar”



The COST Action TU1208 focuses on the exchange of scientific-technical knowledge and experience of Ground Penetrating Radar (GPR) techniques in civil engineering. The project is developed within the frame of a unique approach based on the integrated contribution of University researchers, software developers, geophysics experts, Non-Destructive Testing equipment designers and producers, end users from private companies and public agencies.

In this interdisciplinary Action, launched in April 2013 and lasting four years, advantages and limitations of GPR will be highlighted, leading to the identification of gaps in knowledge and technology. Protocols and guidelines for EU Standards will be developed, for an

effective application of GPR in civil engineering. A novel GPR will be designed and realized: a multi-static system, with dedicated software and calibration procedures, able to construct real-time three-dimensional high resolution images of investigated areas. Advanced electromagnetic-scattering and data-processing techniques will be developed. The understanding of relationships between geophysical parameters and civil engineering needs will be improved. Freeware software will be released, for inspection and monitoring of structures and infrastructures, buried-object localization, shape reconstruction and estimation of useful parameters. A high level training program will be organized. Mobility of early career researchers will be encouraged. The project has already received the interest of key end users and excellent EU Institutions.

Four Working Groups (WGs) carry out the research activities:

- WG1 focuses on the design of innovative GPR equipment, on the building of prototypes, as well as on the testing and optimization of new systems;
- WG2 focuses on the GPR surveying of pavement, bridges, tunnels and buildings, as well as on the sensing of underground utilities and voids;
- WG3 deals with the development of electromagnetic forward and inverse scattering methods and of advanced data processing algorithms; and
- WG4 explores the use of GPR in fields different from civil engineering and the integration of GPR with other non-destructive testing techniques.

The Chair of the COST Action TU1208 is Dr. Lara Pajewski (“Roma Tre” University, Italy) and the Vice-Chair is Prof. Andreas Loizos (National Technical University of Athens, Greece). The Domain Committee Rapporteur is Dr. Goran Mladenovic (University of Belgrade, Serbia), the Science Officer is Dr. Thierry Goger (COST Office, Belgium) and the Administrative Officer is Ms. Svetlana Voinova (COST Office, Belgium). The Chair of WG1 is Dr. Guido Manacorda (IDS Ingegneria dei Sistemi, Italy), the Chair of WG2 is Dr. Christina Plati (National Technical University of Athens, Greece), the Chair of WG3 is Dr. Antonis Giannopoulos (University of Edinburgh, United Kingdom) and the Chair of WG4 is Dr. Immo Trinks (Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology, Austria). The Editorial Coordinator is Prof. Andrea Benedetto (“Roma Tre” University, Italy), the Training School Manager is Prof. Giuseppe Schettini (“Roma Tre” University, Italy) and the Short-Term Scientific Missions Manager is Prof. Marian Marciniak (National Institute of Telecommunications, Poland).

The COST Action TU1208 is still open to the participation of new parties!

For more information, visit [http://www.cost.eu/domains\\_actions/tud/Actions/TU1208](http://www.cost.eu/domains_actions/tud/Actions/TU1208) and the Action’s website <http://www.GPRadar.eu>!

## About “Roma Tre” University and the Department of Engineering



“Roma Tre” University (Rome, Italy) is now in its 21th year of academic activity. There are about 970 teachers and the research area is formed of 12 Departments: Architecture, Business Science, Earth Science, Economics, Education Science, Engineering, Foreign Languages, Literature and Cultures, Humanities, Law, Mathematics, Physics and Natural Science, Philosophy, Communication and Visual Arts, and Political Science.

The “Roma Tre” project has gradually but constantly brought into focus its particular profile: a dynamic and efficient seat of learning that, step by step, has become an acknowledged point of reference both in the Italian and the international university system. Its 40,000 students are the fruit of a winning strategy founded on offering a wide-range of courses and on innovation that focuses on the quality of the teaching and the introduction of the young into the working world.

One of the milestones for Roma Tre, as well as a guideline for its development, was its incorporation in the surrounding area, characterised by the reclamation of old buildings and school premises, transformed into modern facilities for study and research. In a short time modern and efficient study centres were created, important scientific laboratories were improved, while investment in PhDs and researchers has been steadily increased. All the faculties have been equipped with a computer laboratory and most of the University is a wireless zone. Piazza Telematica, a computer centre with 200 multimedia work stations, has been set up; linked to all the laboratories, it is an essential tool for facing the new challenges of research and distance learning. In addition to these teaching facilities our students have at their disposal efficient libraries and sports facilities. The Internship and Job Placement Office is entirely dedicated to orientation, thus increasing the opportunities for last-year students and graduates to gain first hand experience through periods of on-the-job training in firms and institutions.

The Department of Engineering of “Roma Tre” University offers the following 1st cycle degree courses (Bachelor's Degree):

- Civil Engineering
- Computer Engineering
- Electronic Engineering
- Mechanical Engineering

and the following 2nd cycle degree courses (Master's Degree):

- Aeronautical Engineering
- Bioengineering
- Civil Engineering for the Protection from Natural Hazards
- Communication and Information Technology Engineering
- Electronic Engineering in Industry and Innovation
- Management and Automation Engineering
- Mechanical Engineering
- Road Design and Transportation Systems Engineering
- Computer Engineering

“Roma Tre” also offers a wide choice of post-degree courses (PhDs and specialization courses), enhanced through the valid collaboration of both public and private enterprises.

Scientific research, together with education, is one of the essential functions of “Roma Tre” University as well as the basis of teaching itself. It is the engine of critical knowledge, creativity, innovation, competitiveness, and the quality of education. The Departments' autonomy in planning and management issues guarantees they are efficiently run. The University has a growing interest in technology transfer and in the setting up of new companies - particularly spin-offs - for increasing and consolidating its relations with the production system.

For more information, visit <http://www.uniroma3.it>

## Programme of the First Action’s General Meeting

### COST Action TU1208

#### Monday, 22 July 2013 (Day 1)

##### 8:15 – Registration

##### 9:00 – Opening Session (*Aula Magna*)

Chaired by **Thierry Goger** (COST Science Officer, Belgium)

9:00	<b>Mario Panizza</b> (Rector of “Roma Tre” University), <b>Paolo Atzeni</b> (Director of “Roma Tre” Engineering Department) & <b>Paolo Mele</b> (Dean of “Roma Tre” Engineering Faculty)	Welcome
9:10	<b>Thierry Goger</b> (COST Science Officer, Belgium)	On COST and TUD
9:25	<b>Lara Pajewski</b> (Chair of the COST Action TU1208, Italy)	On COST Action TU1208
9:40	<b>Fabio Tosti</b> (“Roma Tre” PhD Student, Italy)	Instructions for the Meeting

##### 9:50 – Plenary Session 1 (*Aula Magna*)

Chaired by **Lara Pajewski** (Chair of the COST Action TU1208, Italy)

9:50	<b>David J Daniels</b> (Expert, United Kingdom)	On GPR design challenges
10:30	<i>Discussion</i>	
10:45	<b>Erica Utsi</b> (Chairperson of EuroGPR, United Kingdom)	On EuroGPR activities
11:15	<i>Ideas and proposals about joint activities between EuroGPR and COST Action TU1208</i>	

##### *Coffee Break (11:30 – 12:00)*



**12:00 – Management Committee Meeting, open-door part: presentation of MC Members and Participants of the COST Action TU1208 (Aula Magna)**

Chaired by **Andreas Loizos** (Vice-Chair of the COST Action TU1208, Greece)

12:00	MC Members presentation and activities of their research units: 3’30” per Institute - <i>For further details see Appendix A (26 short talks)</i>
13:30	WG Members presentation and activities of their research units: 3’30” per Institute (no talk if the same research unit has already been presented by a MC Member) - <i>For further details see Appendix B (8 short talks)</i>

**Lunch Break (14:00-15:00)**

**15:00 – Management Committee Meeting, closed-door part (Aula Magna)**

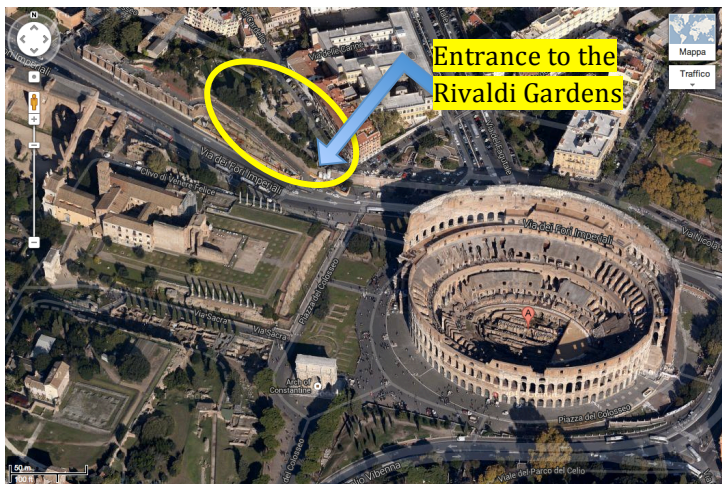
In addition to the MC Members, even the WG Members can attend this meeting as observers. The detailed agenda will be circulated among the participants during the meeting.

**Coffee Break planned during the MC Meeting (16:30 – 17:00)**

**At the end of the MC Meeting: Steering Group (SG) Meeting (Aula Magna)**

The SG is composed by the Action’s Chair and Vice-Chair, the WG Chairs and Vice-Chairs, the Editorial Coordinator, the Managers of the STSMs and of the Training School, and the “Women in TU1208” Chair. All the Participants of the COST Action TU1208 are welcome to this meeting as observers.

**Common Buffet Dinner in Rivaldi Gardens at Colosseum (19:30)**



Via del Colosseo, 41 - Roma (50 m walk from “Colosseo” underground station). Details about how to reach the Rivaldi Gardens will be given during the meeting. A common transfer by underground will be organized.



## Tuesday, 23 July 2013 (Day 2)

### 9:00 – Meeting of Working Group 1: NOVEL GPR INSTRUMENTATION (*Aula Magna*)

Chaired by **Andrea Benedetto** (Editorial Coordinator of the COST Action TU1208, Italy)

9:00	Lara Pajewski (Chair of the COST Action TU1208, Italy)	Status of WG1
9:10	Guido Manacorda (Chair of WG1, Italy) 15 min + Discussion 15 min	State of the Art and Open Issues Project 1.1 “Design, realization and optimization of innovative GPR equipment for the monitoring of critical transport infrastructures and buildings, and for the sensing of underground utilities and voids.”
9:40	Luca Gamma (Vice-Chair of WG1, Switzerland) 15 min + Discussion 15 min	State of the Art and Open Issues Project 1.2 “Development and definition of advanced testing, calibration and stability procedures and protocols, for GPR equipment.”
10:10	Raffaele Persico (CNR, Italy) 15 min + Discussion 5 min	On reconfigurable GPR systems
10:30	Panel Discussion about the future activities of Working Group 1; preliminary ideas about test scenarios for GPR equipment.	

### **Cocktail (11:00 – 11:30)**

### 11:30 – Plenary Session 2 (*Aula Magna*)

Chaired by **Marian Marciniak** (STSMs Manager of the COST Action TU1208, Poland)

11:30	<b>Antonis Giannopoulos</b> (Chair of WG3, United Kingdom)	On GPRMAX
12:15	<i>Discussion</i>	
12:30	<b>Marian Marciniak</b> (STSMs Manager of the COST Action TU1208, Poland)	On STSMs
12:45	<b>Morena Rizzo</b> (EU R&D - Industrial Liaison Office, Italy)	On Marie Curie ITN and NATO Programmes
13:00	<i>Discussion</i>	



**Lunch Break (13:30-14:30)**

**14:30 – Meeting of Working Group 2: GPR SURVEYING OF PAVEMENTS, BRIDGES, TUNNELS AND BUILDINGS; UNDERGROUND UTILITY AND VOID SENSING (Aula Magna)**

Chaired by **Christina Plati** (Chair of WG2, Greece) & **Xavier Derobert** (Vice-Chair of WG2, France)

14:30	Andreas Loizos (Vice-Chair of the COST Action TU1208, Greece)	Status of WG2
14:40	Josef Stryk (Project Leader of P2.1, Czech Republic) 20 min + Discussion 20 min	State of the Art and Open Issues Project 2.1 “Innovative inspection procedures for effective GPR surveying of critical transport infrastructures (pavements, bridges and tunnels).”
15:20	Christina Plati (Chair of WG2, Greece) & Xavier Derobert (Vice-Chair of WG2, France) 20 min + Discussion 20 min	State of the Art and Open Issues Project 2.3 “Innovative inspection procedures for effective GPR sensing and mapping of underground utilities and voids, with a focus to urban areas.”

**16:00-16:30 Coffee Break**

16:30	Lech Kryszynski (Project Leader of P2.4, Poland) 20 min + Discussion 20 min	State of the Art and Open Issues Project 2.4 “Innovative procedures for effective GPR inspection of construction materials and structures.”
17:10	Fabio Tosti (Project Leader of P2.5, Italy) 20 min + Discussion 20 min	State of the Art and Open Issues Project 2.5 “Determination, by using GPR, of the volumetric water content in structures, sub-structures, foundations and soil.”
17:50	Panel Discussion on the Project 2.2 “Innovative inspection procedures for effective GPR surveying of buildings” and on future activities of Working Group 2; preliminary ideas about test scenarios for inspection procedures.	

**14:30 – Meeting of Working Group 3: ELECTROMAGNETIC METHODS FOR NEAR-FIELD SCATTERING PROBLEMS BY BURIED STRUCTURES; DATA PROCESSING TECHNIQUES**  
*(Room N13 – please note that only the WG3 Meeting is held in this room)*

Chaired by **Antonis Giannopoulos** (Chair of WG3, United Kingdom)

14:30	Lara Pajewski (Chair of the COST Action TU1208, Italy)	Status of WG3
14:40	Cristina Ponti (Project Leader of P2.1, Italy) 15 min + Discussion 15 min	State of the Art and Open Issues Project 3.1 “Development of new methods for the solution of forward electromagnetic scattering problems by buried structures.”
15:10	Andrea Randazzo & Raffaele Solimene (Project Leaders of P3.2, Italy) 15 min + Discussion 15 min	State of the Art and Open Issues Project 3.2 “Development of new methods for the solution of inverse electromagnetic scattering problems by buried structures.”
15:40	Sebastián Lambot (Project Leader of P3.3, Belgium) 15 min + Discussion 15 min	State of the Art and Open Issues Project 3.3 “Development of intrinsic models for describing near-field antenna effects, including antenna-medium coupling, for improved radar data processing using full-wave inversion.”

**16:10-16:30 Coffee Break**

16:30	Ilaria Catapano (CNR, Italy) 15 min + Discussion 15 min	State of the Art and Open Issues Project 3.4 “Shape-reconstruction and quantitative estimation of electromagnetic and physical properties from GPR data.”
17:00	Francesco Benedetto & Nikos Economou (Project Leaders of P3.5, Italy & Greece) 15 min + Discussion 15 min	State of the Art and Open Issues Project 3.5 “Development of advanced GPR data processing techniques.”
17:30	Panel Discussion about the future activities of Working Group 3; preliminary ideas about test scenarios for electromagnetic methods and for data processing algorithms.	

***Common Dinner in Pizzeria “Taverna Cestia” (20:00)***

Via Piramide Cestia, 65 - 00153 Roma (100 m walk from “Piramide” underground station), Tel. +39 06 5743754. More details about how to reach the Pizzeria will be given during the meeting. A common transfer by underground will be organized.



## Wednesday, 24 July 2013 (Day 3)

### 9:00 – Plenary Session 3 (*Aula Magna*)

Chaired by **Guido Manacorda** (Chair of WG1, Italy)

9:00	<b>Immo Trinks</b> (Chair of WG4, Austria)	Archaeological prospection using a GPR array system at the Roman town of Carnuntum, Austria
9:30	<i>Discussion</i>	

### 9:45 – Meeting of Working Group 4: DIFFERENT APPLICATIONS OF GPR AND OTHER NON-DESTRUCTIVE TESTING TECHNOLOGIES IN CIVIL ENGINEERING (*Aula Magna*)

Chaired by **Immo Trinks** (Chair of WG4, Austria)

9:45	Andreas Loizos (Vice-Chair of the COST Action TU1208, Greece)	Status of WG4
9:55	Wolfgang Neubauer & Francesco Soldovieri (Project Leaders of P4.1, Austria & Italy) 12 min + Discussion 8 min	State of the Art and Open Issues Project 4.1 “Applications of GPR and other non-destructive testing methods in archaeological prospecting and cultural heritage diagnostics.”
10:15	Lorenzo Crocco (CNR, Italy) & Vincenzo Ferrara (Project Leader of P4.2, Italy) 12 min + Discussion 8 min	State of the Art and Open Issues Project 4.2 “Advanced application of GPR to the localization and vital signs detection of buried and trapped people.”
10:35	Mercedes Solla (Universidade de Vigo, Spain) 12 min + Discussion 8 min	State of the Art and Open Issues Project 4.3 “Applications of GPR in association with other non-destructive testing methods in surveying of transport infrastructures.”

**10:55-11:25 Coffee Break**

11:25	Klisthenis Dimitriadis (Project Leader of P4.4, Greece) 12 min + Discussion 8 min	State of the Art and Open Issues Project 4.4 “Applications of GPR in association with other non-destructive testing methods in building assessment and in geological/geotechnical tasks.”
11:45	Panel Discussion on the Project 4.5 “Development of other advanced electric and electromagnetic methods for the characterization of construction materials and structures” and about future activities of Working Group 4.	

### 12:15 – Closing Session (*Aula Magna*)

Chaired by **Giuseppe Schettini** (TS Manager of the COST Action TU1208, Italy)

12:15	Guido Manacorda (Chair of WG1, Italy)	Review of WG1 Meeting
12:25	Christina Plati (Chair of WG2, Greece)	Review of WG2 Meeting
12:35	Antonis Giannopoulos (Chair of WG3, United Kingdom)	Review of WG3 Meeting
12:45	Immo Trinks (Chair of WG4, Austria)	Review of WG4 Meeting
12:55	Marian Marciniak (STSMs Manager, Poland)	Call for STSMs
13:05	Andrea Benedetto (Editorial Coordinator, Italy)	Dissemination activities
13:15	Lara Pajewski (Chair of the Action) & Andreas Loizos (Vice-Chair of the Action)	Miscellaneous, Closure and Good-Bye

### 13:30 - End of the First General Meeting of the COST Action TU1208

## APPENDIX A of the Programme

MC Members presentation and activities of their research units: 4 min per Institute

Monday, 22 July 2013

### I. AUSTRIA

1. Ludwig Boltzmann Institute for Archaeological Prospection, Vienna - *Immo Trinks*

### II. BELGIUM

2. Gent University, Gent - *Marc Van Meirvenne*
3. Université catholique de Louvain, Louvain-la-Neuve - *Sébastien Lambot*

### III. CROATIA

4. University of Split, Split - *Dragan Poljak*
5. University of Zagreb, Zagreb – *Lovorka Llibric*

### IV. CZECH REPUBLIC

6. Transport Research Centre, Brno - *Josef Stryk*

### V. FINLAND

7. Aalto University, Aalto – *Terhi Pellinen*

### VI. FRANCE

8. Institute Français Sciences Technologies Transports Aménagement Réseaux (IFFSTAR), Bougenais Cedex - *Xavier Derobert*
9. University of Nice Sophia Antipolis – *Christian Pichot*

### VII. GERMANY

10. Federal Institute for Material Research and Testing (BAM), Berlin - *Christiane Trela*

### VIII. GREECE

11. National Technical University of Athens (NTUA), Athens - *Andreas Loizos & Christina Plati*

### IX. ITALY

12. "Roma Tre" University, Rome – *Andrea Benedetto*
13. ELEDIA Research Center, University of Trento, Trento – *Andrea Massa*

### X. The Former Yugoslav Republic of MACEDONIA

14. Ss. Cyril and Methodius University, Skopje – *Borislav Popovski*

### XI. NORWAY

15. SINTEF, Trondheim - *Inge Hoff*

### XII. POLAND

16. National Institute of Telecommunications, Warsaw – *Marian Marciniak*
17. Road and Bridge Research Institute – *Lech Krysiński*

### XIII. PORTUGAL

18. University of Minho, Guimaraes – *Jorge Pais*
19. Polytechnic Institute of Leiria, Leiria – *Luisa Goncalves*

### XIV. SPAIN

20. University of Vigo – *Mercedes Solla*
21. Universitade Politecnica de Barcelona – *Gracia Vega-Pérez*

### XV. SWITZERLAND

22. Hochschule Rapperswil, Rapperswil – *Johannes Hugenschmidt*
23. Scuola Universitaria Professionale della Svizzera Italiana – *Luca Gamma*

### XVI. TURKEY

24. Ankara University, Ankara – *Selma Kadioglu*

### XVII. UNITED KINGDOM

25. University of Edinburgh, Edinburgh – *Antonis Giannopoulos*
26. University of Greenwich, Greenwich – *Amir Morteza Alani*

## APPENDIX B of the Programme

WG Members presentation and activities of their research units: 4 min per Institute

Monday, 22 July 2013

### I. GREECE

1. Geoservice - *Klisthenis Dimitriadis*
2. Aristotle University of Thessaloniki – *Nectaria Diamanti*

### II. ITALY

3. “La Sapienza” University, Roma – *Fabrizio Frezza*
4. National Research Council (CNR) – IREA Institute, Naples – *Francesco Soldovieri*
5. National Research Council (CNR) – IBAM Institute, Naples – *Raffaele Persico*
6. Seconda Università degli Studi di Napoli, Naples – *Raffaele Solimene*
7. University of Genoa, Genoa – *Matteo Pastorino*

### III. LATVIA

8. Transport and Telecommunication Institute, Riga – *Daniil Opolchenov*

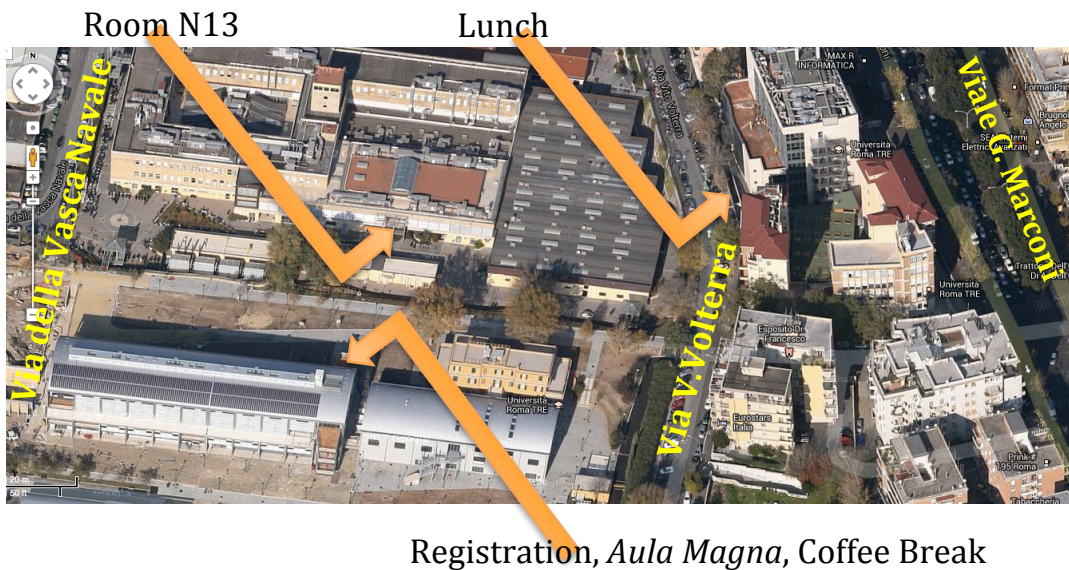


## Meeting Venue

The First Action’s General Meeting will be held at the Engineering Department of “Roma Tre” University, Via Vito Volterra 62, Rome, Italy. The buildings of the Department are located in the bend of the Tiber River, between Lungotevere Dante and Viale Marconi.



The following picture shows where the Registration, the Sessions (*Aula Magna* and Room N13), the Lunch and the Coffee Break, will take place:



Please note that only the Meeting of the WG3 will take place in Room N13 (on Tuesday, in the afternoon). All the other Sessions will take place in *Aula Magna*.

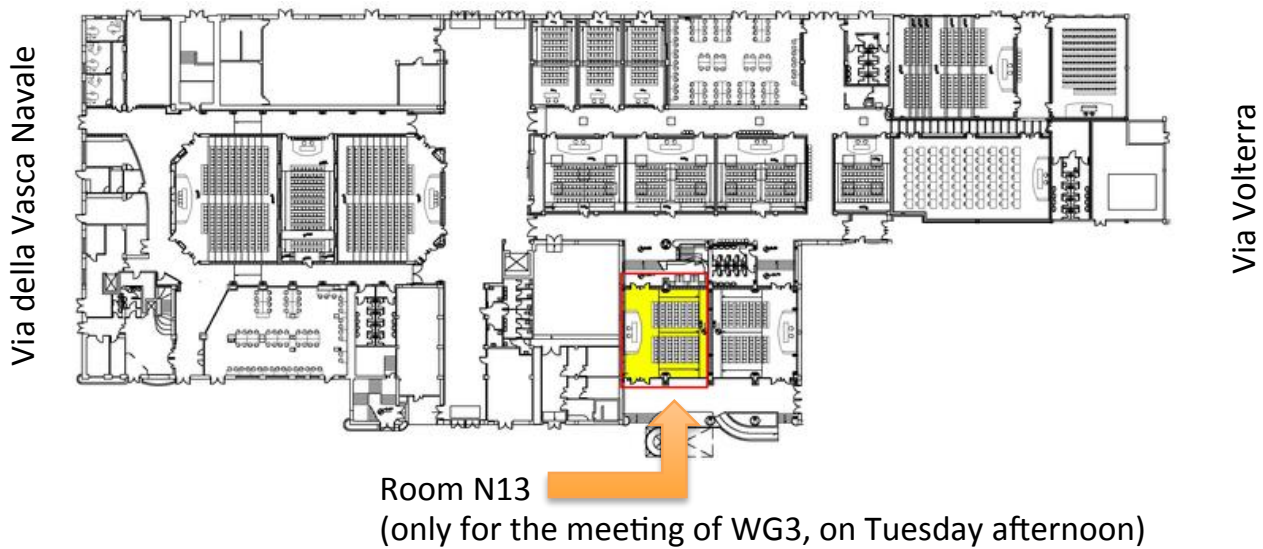


The following picture shows the entrance to the main building of the Engineering Department, where Registration, most of the Sessions (those located in *Aula Magna*), and the Coffee Breaks, will take place:



Registration, *Aula Magna*, Coffee Break

The following map represents the building where Room N13 is located:



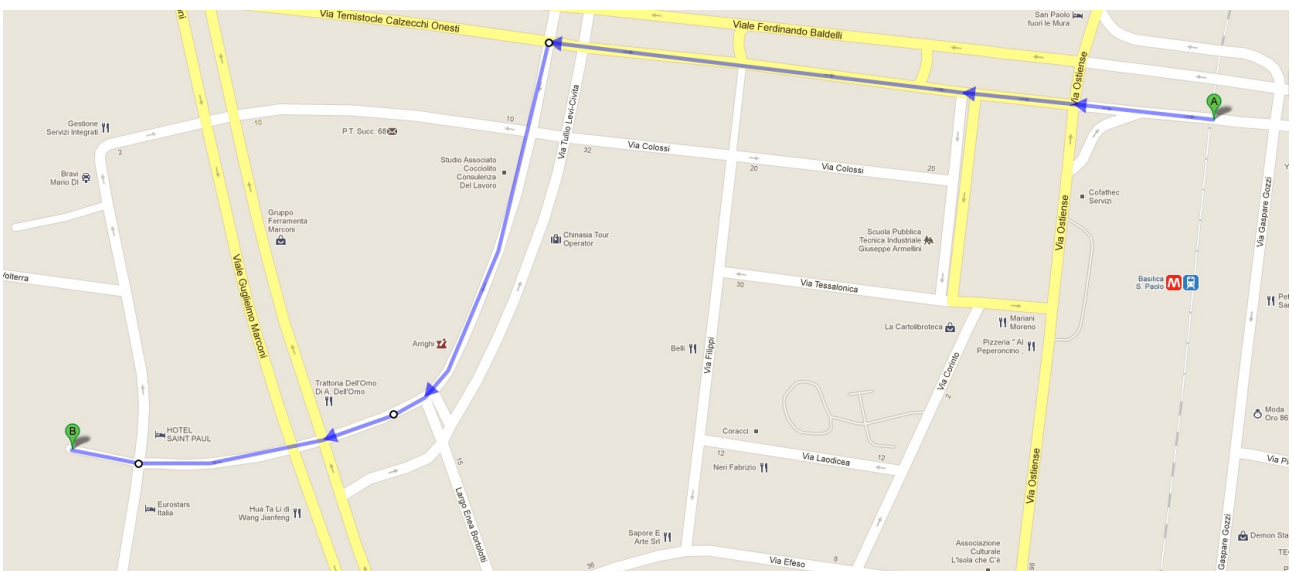
Room N13  
(only for the meeting of WG3, on Tuesday afternoon)

## How to Reach the Event

In this Section, we provide some useful information concerning **how to get to the Engineering Department of “Roma Tre” University by...**

### ...Underground

From **Line B** stop “Basilica di San Paolo” walk for about 800 meters as indicated by the route on the map below: in particular, walk for 400 meters on Viale Ferdinando Baldelli then turn left on Via Tullio-Levi Civita, go straight and cross Viale Marconi. Keep going straight on Via Corrado Segre, where you will find one of the entrances to the buildings of the Engineering University District.



As for the bus connections out of the "Basilica di San Paolo" underground station, reach Viale Ferdinando Baldelli and in the range of 150 meters from the underground station you will find the stop on your left. Take the number **23** bus and stay on it until the end of the line, in Largo San Murialdo. Then go on Via della Vasca Navale 79/81 and you will find an entrance to the buildings of the Engineering University District (click [here](#) to see the course on the ATAC website, clicking on "Baldelli" you will be able to see the bus stop that you have to reach and zoom, if needed). At the following page you can download the maps of the ATAC public transport in Rome: <http://www.atac.roma.it/page.asp?p=18>

### ...Bus

There are many ATAC lines connecting to the Conference. With lines **23** and **670** it is possible to reach **Largo San Leonardo Murialdo**. Then walk on Via della Vasca Navale until you reach n. 79/81 and you will find an entrance to the buildings of the Engineering University District. Line **770** makes a circle of the Faculties of “Roma Tre” University, it also covers Via della Vasca Navale where you can find the entrance to the buildings of the Engineering University District. Lines **128**, **170**, **761**, **766** and **791** pass through Viale Marconi; get out of the bus next to Via Segre and go straight on it until you find the entrance of the building of “Roma Tre” Engineering District (150 meters far from the bus stop). On the ATAC website it is possible to check the courses of the lines: in particular, at the link <http://www.atac.roma.it/page.asp?p=18> it is possible to download the maps of the ATAC public transport in Rome; moreover, if you write in the 'trova

linea’ field the number of the bus of your interest (e.g., 23, or 670, ...) and click on the red button ‘trova’, you will see the course of that bus.

### ...Car

Take exit 28 on the G.R.A. (Grande Raccordo Anulare), directed on via Ostiense. If you need more details, please contact us at [events@GPRadar.eu](mailto:events@GPRadar.eu).

### ...Train

You can reach the Engineering District of “Roma Tre” University from **Stazione Termini**, **Stazione Ostiense** and **Stazione Tiburtina** railway stations. Please note that it is possible to take the connection to the line B underground in all these railways stations, heading to Laurentina. Stop at "Basilica di San Paolo" underground station and then follow the indication provided in the previous section on how to reach the Event via underground.

### ...Plane

From **Leonardo Da Vinci Airport (Fiumicino Aeroporto)**, go ahead by walking to the close railway station of the airport. Take the regional line FL1, heading Fara Sabina or Orte, to Stazione Ostiense (you will reach Stazione Ostiense in 32 min, as scheduled by the official timetable). Then follow the indications given in the Section about how to reach the Event by train. From Monday to Friday, there is a train every 15 min; on Saturday and Sunday trains are scheduled every 30 minutes. For further information, click here to find the official train timetable: <http://www.trenitalia.com>. In the following picture, you can see the course of the train:



From **Ciampino Airport**, take the ATRAL Airport Bus to Stazione Termini (you will reach Stazione Termini in 40 min). You can check the timetable [here](#) and you can buy the ticket onsite or online [here](#). The ATRAL Airport Bus is a public transport bus. There are also private companies providing the bus service from Ciampino Airport to Stazione Termini: in particular, you can take the SIT Bus Shuttle (see <http://www.sitbusshuttle.com>), or the Terravision Bus (see <http://www.terravision.eu>), or else the Schiaffini Bus (see <http://www.schiaffini.it>). From Stazione Termini, follow the indications given in the Section about how to reach the Event by train.

## Wi-Fi Internet Connection

“Roma Tre” University is pleased to provide a free wi-fi internet connection to all the participants attending the meeting.



There are two possible wireless networks that you can use:

**Rm3Wi-Fi**

or else

**Rm3Wi-FiWPA**, with access key **Uniroma3WiFi**

The following data can be used to access internet web pages:

User-id: **costtu1208**

Password: **ac1fk43**

**NOTES**
