

Novel national and international Ground Penetrating Radar Associations

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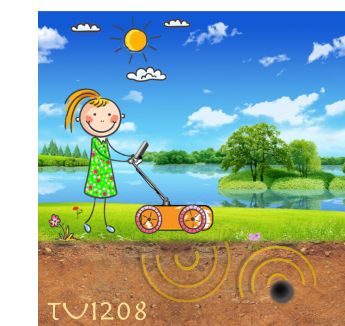
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SAPIENZA
UNIVERSITÀ DI ROMA



UNIVERSITÀ TELEMATICA
INTERNAZIONALE UNINETTUNO



Summary of the talk

1

TU1208 GPR Association



Overview: Reasons, objectives, key principles and participants



Research, training and dissemination activities; benefits for Members



Contacts

TU1208

2

Associazione Italiana del Georadar



What is it?
Why talking about it here?



Purposes & Actions

ASSOCIAZIONE
ITALIANA
DEL GEORADAR

01

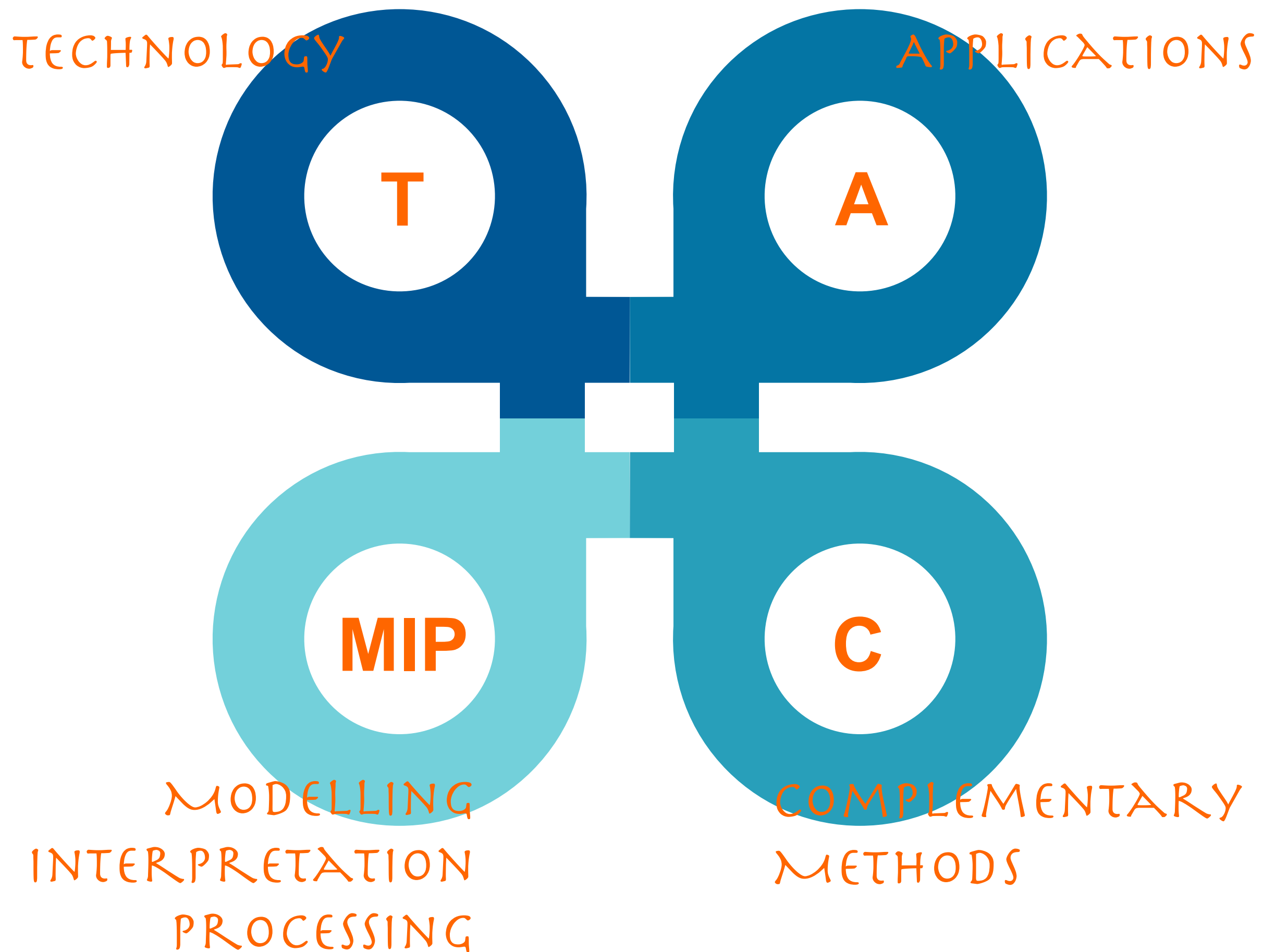
TU1208 GPR Association

Overview: Reasons

- Non-profit international association founded in September 2017 as a follow up of the COST (European Cooperation in Science and Technology) Action TU1208 “Civil engineering applications of Ground Penetrating Radar,” to further support cooperation between Universities, research centres, private companies and public agencies active in the GPR field.



Overview: Objectives



- The association inherited the same primary objective of the Action: exchange and increase scientific-technical knowledge and experience of GPR technique, whilst promoting a wider and effective use of this safe and non-destructive method.

Overview: Key principles

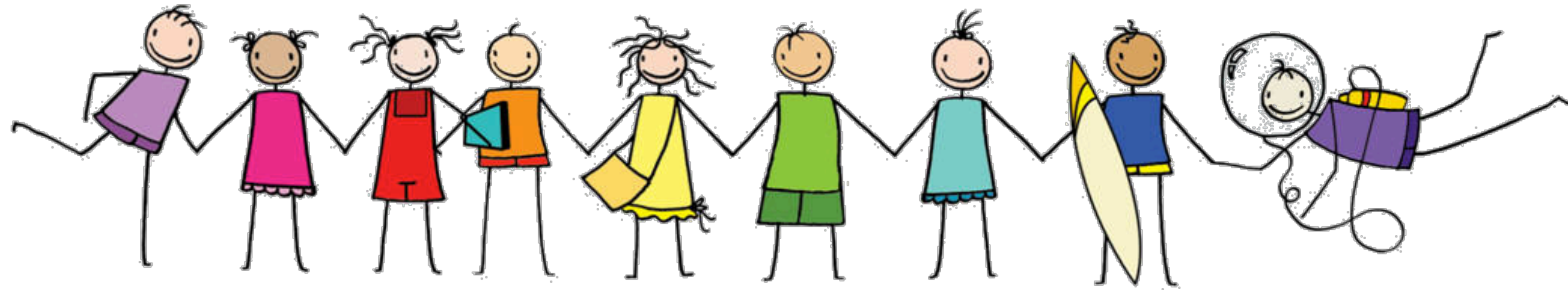


inclusiveness

OPEN SCIENCE

EMBRACING
DIVERSITY

*international
cooperation*



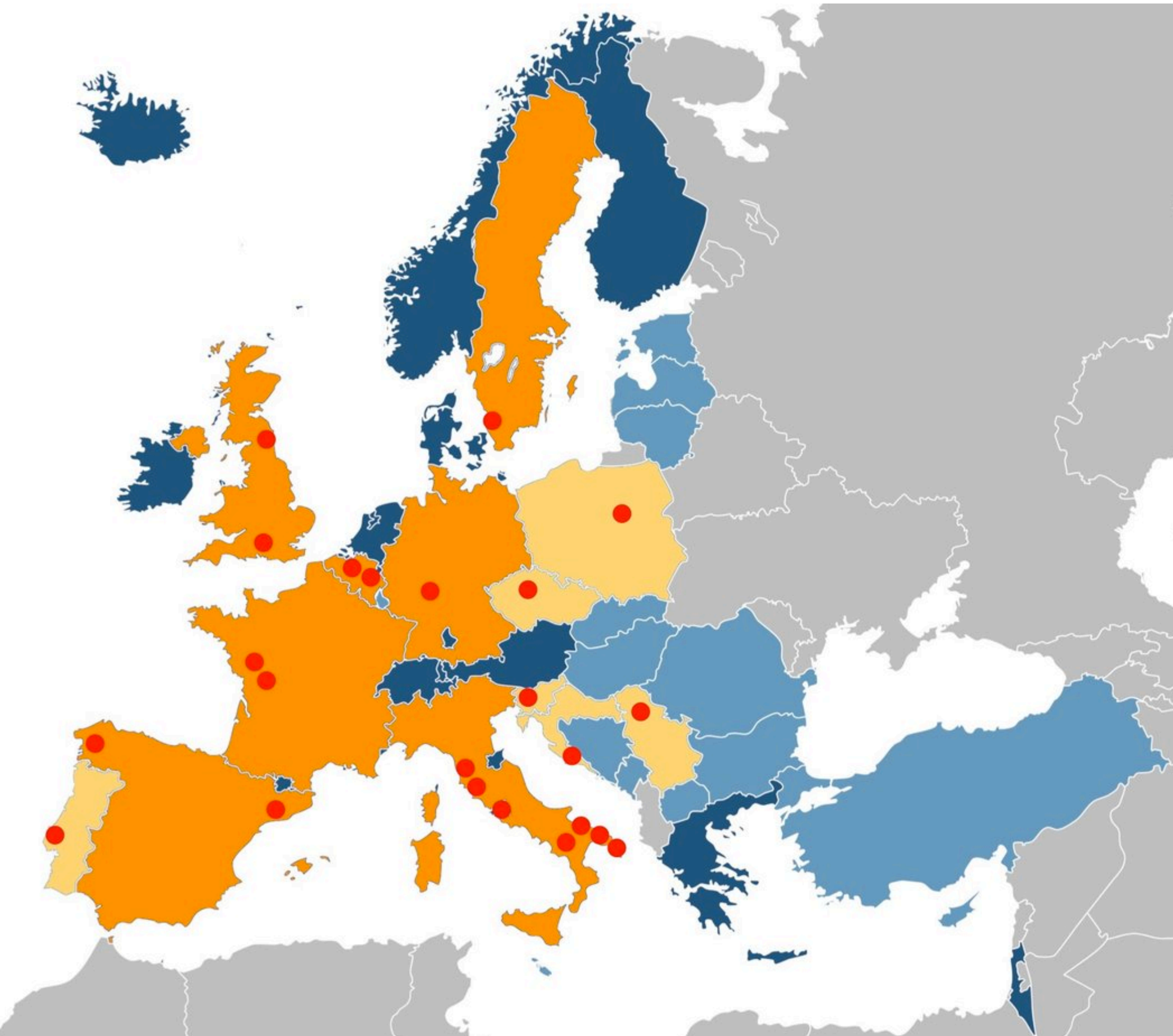
gender

*early
career
scientists*

BOTTOM UP

*stakeholders
& industry
involvement*

Overview: Participants



- 36 Members, 24 institutes, 13 countries



14 universities
5 research centres
1 public agency
1 high school
3 private companies

Activities

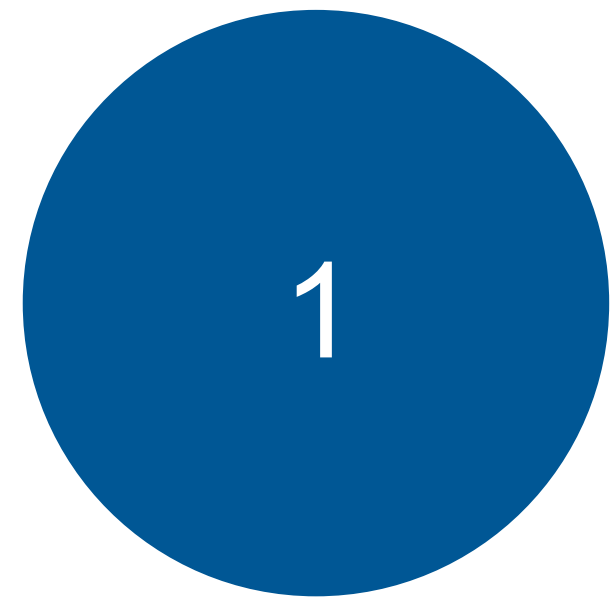


- The Association was founded in September 2017.
- We have a website dedicated to the Association, with information about its Members and initiatives. We also have a blog and active accounts on social media (Facebook, LinkedIn, Twitter and Instagram).
- The Association is registered as a Publishing House → we publish e-volumes with ISBN and DOI numbers in OA, on the Association website.
- We have founded *Ground Penetrating Radar*, the first peer-reviewed scientific journal dedicated to GPR.


Main events:

- 2018 and 2019 EGU GA Session “COST Actions in Geosciences”
- Training School on the use of GPR in civil engineering and cultural heritage management
Rome, Italy, 14-18 May 2018
- IWAGPR 2019 | Rome, Italy, 3-5 July 2019

Published volumes



COSt Action TU1208

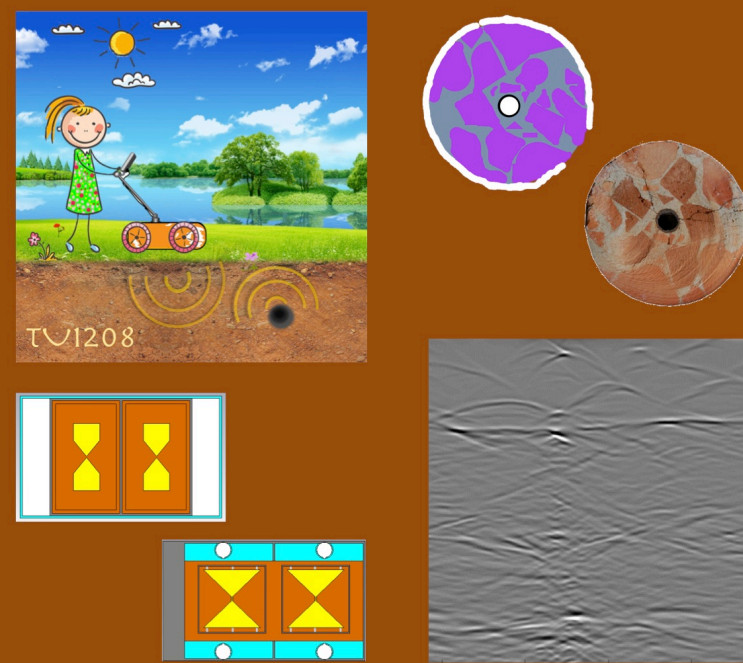


Civil engineering applications
of Ground Penetrating Radar

Catalogue
of GPR test sites

Lara Pajewski, Raffaele Persico, Xavier Derobert, Jean-Paul Balayssac, Satoshi Ebihara, Colette Grégoire, Volodymyr Ivashchuk, Thomas Kind, Lech Krysiński, Wallace Wai-Lok Lai, Sébastien Lambot, Sergio Negri, Salvatore Piro, Santo Prontera, Enzo Rizzo, Mercedes Solla, Josef Stryk.

COSt Action TU1208




Short-Term Scientific
Missions: Year 3

Editors:
L. Pajewski & M. Marciniak

January 2018
www.GPRadar.eu

COSt Action TU1208



Short-Term Scientific
Missions: Years 4 & 5

Editors:
L. Pajewski, I. Rodriguez-Abad & M. Marciniak

January 2018
www.GPRadar.eu

Ground Penetrating Radar



GROUND PENETRATING RADAR

Issue 1, Volume 1
January 2018
www.GPRadar.eu/journal

USE OF GROUND PENETRATING RADAR AND STANDARD GEOPHYSICAL METHODS TO EXPLORE THE SUBSURFACE

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ABSTRACT

This paper presents the results of a series of Ground Penetrating Radar (GPR) and passive seismic measurements performed in Malta in 2015, during a Short-Term Scientific Mission (STSM) funded by COST (European Cooperation in Science and Technology) Action TU1208 "Civil engineering applications of Ground Penetrating Radar." The main purposes of the measurements were: to test the performance of an innovative reconfigurable stepped-frequency GPR prototype, recently upgraded thanks to the results of the research activities carried out in Norway during a previous TU1208 STSM; to investigate the geological conditions of some sites of historical and environmental interest; and to assess the internal status of two monuments. To the best of our knowledge, the GPR measurements carried out during this STSM constitute the first GPR investigations ever performed in Malta.

GROUND PENETRATING RADAR INVESTIGATIONS IN SITES OF CULTURAL INTEREST IN MALTA

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ABSTRACT

This paper presents the results of a series of geophysical surveys carried out in Malta. In particular, we used a reconfigurable stepped-frequency Ground Penetrating Radar (GPR) prototype to inspect the Argotti Garden in Floriana, looking for ancient buried cisterns, and the floor of the Nymphaeum inside the garden, to assess its conditions prior to restoration works. We subsequently used a commercial pulsed GPR system to assess the walls of the co-cathedral of St. John, in Valletta, and the walls of a building of the University of Malta, in Msida. All measurements were performed during a Short-Term Scientific Mission (STSM) funded by the COST (European Cooperation in Science and Technology) Action TU1208 "Civil engineering applications of Ground Penetrating Radar." Of course the work performed during the STSM consisted also in the processing and interpretation of the gathered data.

ELECTRICAL RESISTIVITY TOMOGRAPHY INVESTIGATIONS IN MGARR (MALTA)

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ABSTRACT

This paper presents the results of electrical resistivity tomography (ERT) investigations carried out in Mgarr, Malta. All measurements were performed during a Short-Term Scientific Mission (STSM) funded by the COST (European Cooperation in Science and Technology) Action TU1208 "Civil engineering applications of Ground Penetrating Radar." The work performed during the STSM consisted also in the processing and interpretation of the gathered data.

NON-DESTRUCTIVE TESTS FOR RAILWAY EVALUATION: DETECTION OF FOULING AND JOINT INTERPRETATION OF GPR DATA AND TRACK GEOMETRIC PARAMETERS

MERCEDES SOLLA¹ & SIMONA FONTUL²

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ABSTRACT

This paper deals with railway assessment by using Ground Penetrating Radar, eventually combined with Falling Weight Deflectometer and Light Falling Weight Deflectometer. All measurements were performed during a Short-Term Scientific Mission (STSM) funded by the COST (European Cooperation in Science and Technology) Action TU1208 "Civil engineering applications of Ground Penetrating Radar." In particular, the tasks addressed were: 1. Detection of track defects at infrastructure level (voids and cracking); 2. Measurement of layer thickness; and, 3. Evaluation of the fouling level of ballast.

A PRACTICAL GUIDE ON USING SPOT-GPR, A FREWARE TOOL IMPLEMENTING A SAP-DOA TECHNIQUE

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SIMONE.MESCHINO@GMAIL.COM

² SAPIENZA UNIVERSITY OF ROME, DEPARTMENT OF INFORMATION ENGINEERING, ELECTRONICS AND TELECOMMUNICATIONS, ROME, ITALY
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ABSTRACT

This is a software paper, which main objective is to provide practical information on how to use SPOT-GPR release 1.0, a MATLAB®-based software for the analysis of ground penetrating radar (GPR) profiles. The software allows detecting targets and estimating their position in a two-dimensional scenario, it has a graphical user interface and implements an innovative sub-array processing method. SPOT-GPR was developed in the framework of the COST Action TU1208 "Civil Engineering Applications of Ground Penetrating Radar" and is available for free download on the website of the Action (www.GPRadar.eu).

THERMOGRAPHY: PRINCIPLES AND APPLICATIONS

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² UNIVERSITY OF SALAMANCA, DEPARTMENT OF CARTOGRAPHIC AND TERRAIN ENGINEERING, ÁVILA, SPAIN
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ABSTRACT

This tutorial presents the main principles of the thermography technique and the civil-engineering applications of this non-destructive testing method. Several examples are given and two case studies are presented, where thermography and Ground Penetrating Radar are jointly used to assess a radiant heating floor installed in a building, and to detect moisture in a masonry arch bridge.

The scope of the journal spans all of the latest and emerging research in the GPR field.

Journal topics:

- ✓ New instrumentation development;
- ✓ Applications of GPR in earth and planetary sciences, environmental and civil engineering, archaeology and cultural heritage, forensics and security, and any other areas;
- ✓ Advancement and use of processing, electromagnetic modelling, imaging, and inversion methods for GPR;
- ✓ GPR use in combination with complementary NDT techniques.

Open access, open science – Published quarterly – No article publication charges – doi; CrossRef

Benefits for Members



- ✓ Main benefit: **Networking opportunities**

Additionally:

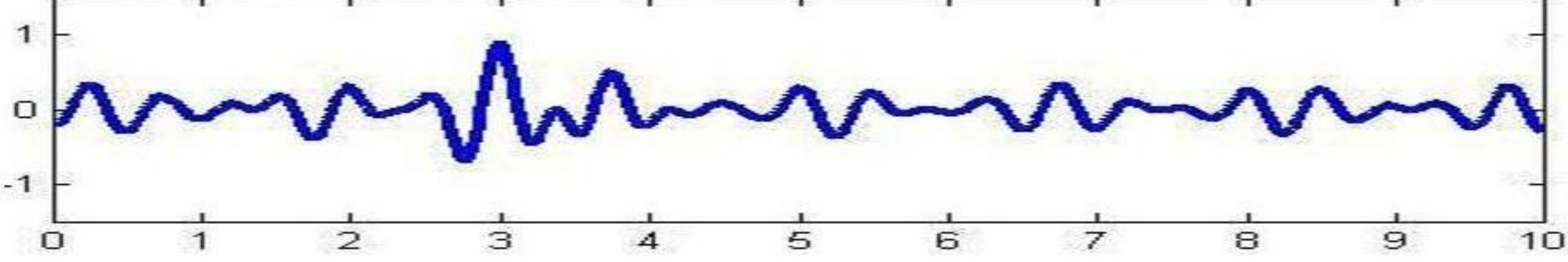
- ✓ Events can be attended free of charge or by paying a reduced registration fee
 - ✓ Open access publication of ISBN and doi volumes/reports is free of charge
- ✓ For companies: free publication of 1 advertisement per year on the GPR journal

02

Associazione Italiana del Georadar

Website: www.gpritalia.it

GPRitalia - Associazione Italiana del Georadar



HOME CHI SIAMO ▾ INTRODUZIONE AL GPR ▾ EVENTI ▾ VIDEO LETTURE ARCHIVIO ▾ CONTATTI

Benvenuti!
Questo e' il sito ufficiale dell'Associazione Italiana del Georadar. Se desiderate iscrivervi all'Associazione potete consultare il campo "COME ISCRIVERSI" dal menu a tendina "CHI SIAMO". Se desiderate saperne qualcosa in più sulle nostre attività e finalità potete contattarci scrivendo ad info@gpritalia.it. Saremo lieti di rispondervi.

ACCESSO UTENTI

Nome utente

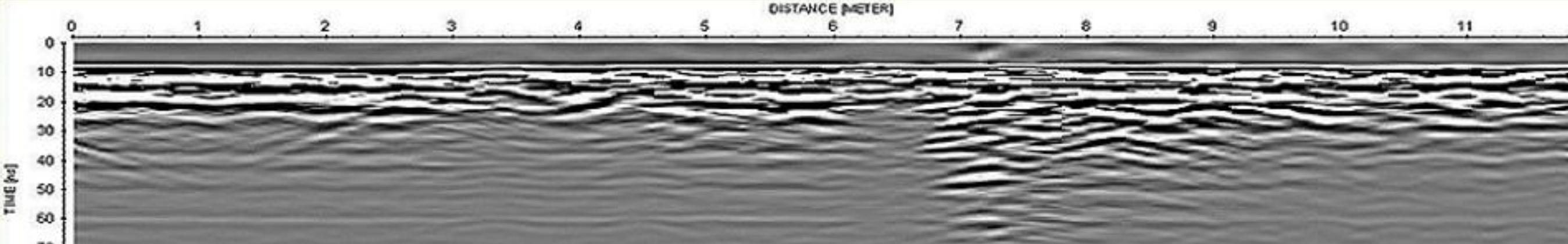
Password

Ricordami

Accedi

[Nome utente dimenticato?](#)
[Password dimenticata?](#)

Sito realizzato da Massimo Pasquali



Overview: Participants



- 34 Members from 2 countries



- 5 universities
- 3 research centres
- 1 foundation
- 7 private companies
- 8 private professionals

Benefits for Members

- ✓ **Events discounted or for free**
 - ✓ **Video-lessons on line**
- ✓ **Participation to the life of the Association with right of vote**

Examples of expenses

✓ **Website management and domain**

✓ **Events**

✓ **Accountant**

✓ **Taxes**

✓ **Bank expenses**

Examples of incomes

- ✓ **Registrations to events**
 - ✓ **Sponsorships**
- ✓ **Registrations to the Association**
 - 30 € for temporary workers or retired people**
 - 50 € for permanent workers**
 - 250 € + VAT for companies**

Events

- ✓ **National School in Potenza 16-17 May 2017**
- ✓ **National School in Florence 28-29 November 2017**
- ✓ **National School in Bari 10-11 February 2018**

**Training School on Ground Penetrating Radar for Civil Engineering and Cultural Heritage Management, Rome
14-18 May, 2018.**

Contacts

1

TU1208 GPR Association

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TU1208

2

Associazione Italiana del Georadar

Website
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Email
info@gpritalia.it



ASSOCIAZIONE
ITALIANA
DEL GEORADAR

GPR Systems & Trainers

GPR 1) GSSI UtilityScan LT

Aleksandar Ristic

GPR 2) Stepped-Frequency Prototype

Raffaele Persico

GPR 3) GSSI StructureScan

Michael Arvanitis

GPR 4) GSSI SIR 4000

Maurizio Porcu

Supervisors & Helpers

S1) Lara Pajewski

S2) Lai Bun Lok

H1) Santo Prontera

H2) Alessio Ventura

Trainees: Group 1

- 1) *Dragan*
- 2) Adam
- 3) Benedetto
- 4) Lorenzo
- 5) Jaime
- 6) Michalina
- 7) Katerina

Trainees: Group 2

- 1) *Anna*
- 2) Martina
- 3) Dan
- 4) Afief
- 5) Fabio
- 6) Andrea

Trainees: Group 3

- 1) *Loredana*
- 2) Davide
- 3) Olav
- 4) Andreas
- 5) Heorhii
- 6) Octavio

Trainees: Group 4

- 1) Erika
- 2) Anton
- 3) Mezgeen
- 4) Carla
- 5) Francesco
- 6) Iginio

Timetable – San Pietro in Vincoli

GPR 1

Group 1

Group 2

Group 3

Group 4

GPR 2

Group 2

Group 3

Group 4

Group 1

GPR 3

Group 3

Group 4

Group 1

Group 2

GPR 4

Group 4

Group 1

Group 2

Group 3

Round 1
15:00 – 15:45

Round 2
15:45 – 16:30

Round 3
16:30 – 17:15

Round 4
17:15 – 18:00

San Paolo



Please arrive by 9:00. You can arrive sooner if you want: after 8:00

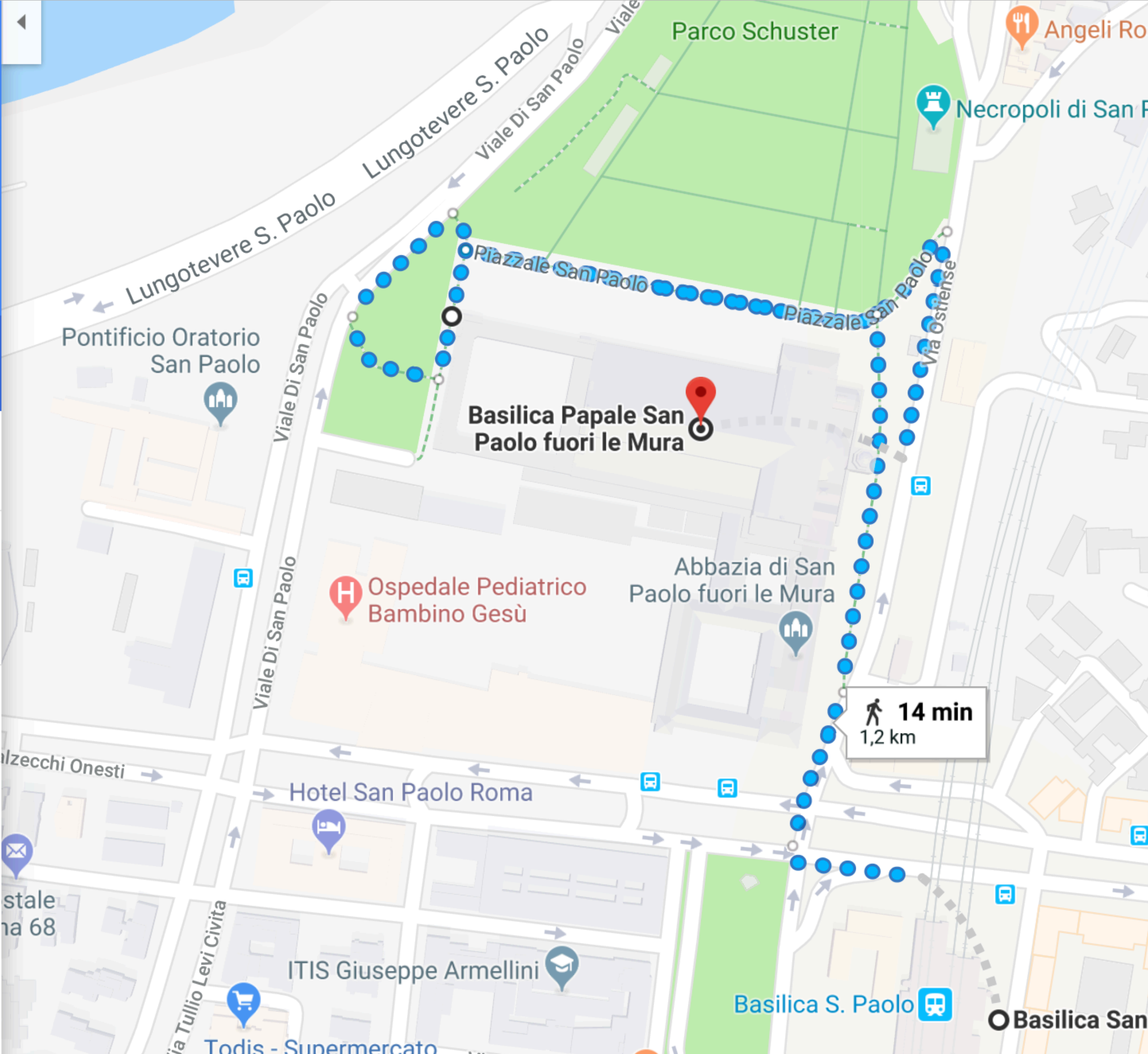
Roma RM

fuori le Mura

OPZIONI

telefono

14 min
1,2 km



Timetable – San Paolo (morning)

GPR 1

GPR 2

GPR 3

GPR 4

Round 1
09:00 – 10:00

Group 1

Group 2

Group 3

Group 4

Round 2
10:00 – 11:00

Group 2

Group 3

Group 4

Group 1

Round 3
11:30 – 12:30

Group 3

Group 4

Group 1

Group 2

Round 4
12:30 – 13:30

Group 4

Group 1

Group 2

Group 3

Timetable – San Paolo (afternoon)

GPR 1

Group 1

Group 2

Group 3

GPR 2

Group 2

Group 3

Group 1

GPR 3 & 4

Group 3

Group 1

Group 2

Round 1
14:30 – 15:30

Round 2
15:30 – 16:30

Round 3
16:30 – 17:30

+39 335 5479956