



*Project co-financed by the European  
Union European Regional Development*

# SIMIT

## 2<sup>nd</sup> Partners meeting

### Valletta, Malta

### 15 – 16 January 2014

## Partner PP5 – University of Malta

P.O Italia-Malta 2007-2013 progetto SIMIT :  
Costituzione di un sistema integrato di protezione civile transfrontaliero italo-maltese  
Codice B1-2.19/11

# University of Malta- departments involved

- Seismic Monitoring and Research Unit (SMRU), Physics Department
- Construction & Management Unit, Department of Civil and Structural Engineering, Faculty for the Built Environment
- Institute for Sustainable Development (GIS Lab)

# Project Internal Staff

- **Physics Dept:** Dr.Pauline Galea, Dr.Sebastiano d'Amico, Dr. Louis Zammit-Mangion
- **Dept. Civil and Structural Engineering:** Prof Alex Torpiano, Ruben Borg, Dr.Marc Bonello, Dr.Paul Gauci
- **Institute for Sustainable Development:** Dr.Maria Attard
- **Project Support Office:** Boglarka Toth

# External Staff/Experts and consultants

- [SMRU, Physics Department](#)

**Dr. Matthew Agius** employed as Research Officer II, as from 20 May 2013, for a period of 2 years. Main responsibilities: seismic monitoring and networking; real-time alert systems

**Ms Daniela Farrugia** employed as p/t Research Officer II, as from 6 December 2013. Main responsibilities: compilation of seismicity catalogue; geophysical investigations and analysis

- [Construction & Management Unit, Department of Civil and Structural Engineering](#)

**Ms Petra Sapiano** employed as research Officer I from January, 2014. Main responsibilities: vulnerability of buildings and the built environment; software evaluation

- [Institute for Sustainable Development](#)

(Research Officer to be recruited. Responsible for GIS integration of results)

# WP2 – Activity 2.1

## *Evaluation of Vulnerability and Risk*

### Aims:

1. Evaluation of Seismic Hazard
2. Measurement of geological/geophysical properties
3. Improving the real-time earthquake monitoring system
4. Evaluation of building vulnerability
5. Evaluation of exposure

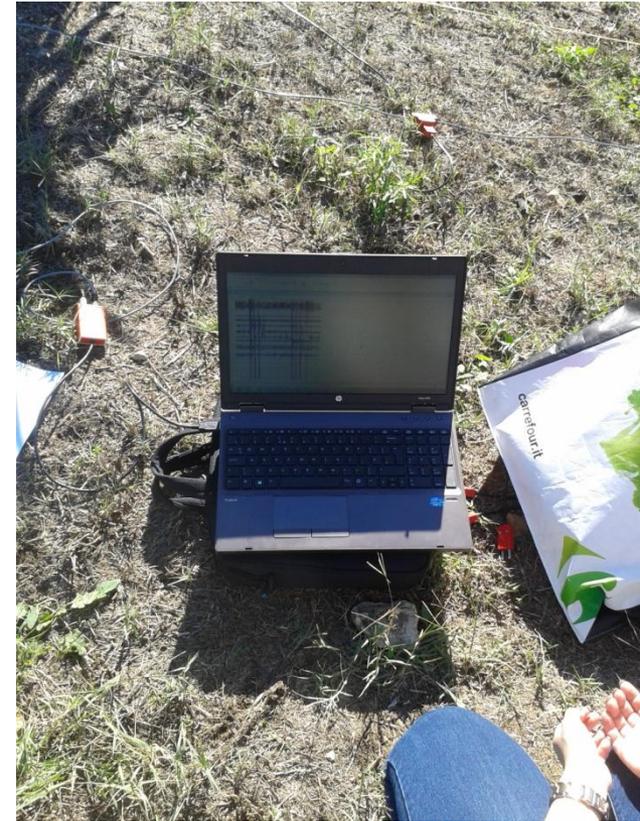
# Equipment

- 65,000 euro has so far been spent/committed on major and ancillary equipment

# 2 portable seismographs for ambient noise measurements (TROMINO Engy )



# 16-geophone array, sledgehammer and field computer



# Broadband permanent seismic stations – tender finalised



# In the coming weeks:

- Purchase of new numerical modelling software for building dynamics
- Large screens for earthquake monitoring facility

# Infrastructure - Installation of second seismic station on Gozo, upgrading of Wied Dalam site, preparation of third site on Malta



-  WDD Seismic Station
-  Proposed Site in Gozo

# Infrastructure

- Migration of all IT operations for seismic monitoring, analysis and alert systems to virtual machines at IT Services Department, University of Malta
- Provisions for secure data back-up and archiving at IT Services

# Missions

- Meetings in Catania, Agrigento
- Geophysical fieldwork campaigns Malta and Sicily
- SeisComp3 Training course in Potsdam, Germany, November 2013 (Matthew Agius)

# WP 2 –Activity 2.1

## Outputs expected by March 2014

### 1. Seismic Monitoring:

- IT infrastructure prepared; SeisComP3 installed and operating
- Virtual Central Mediterranean Network –obtaining real-time data from about 30 stations in Sicily, Southern Italy, Tunisia, Malta, Greece for faster and more accurate hypocentre locations.
- Earthquake Alert system operative
- Site for new Gozo station identified. Site testing to begin on delivery of equipment. Station to be installed, and site refurbished.

# WP 2 –Activity 2.1

## Outputs expected by March 2014

### 2. Seismic Hazard:

- Seismic catalogue is being extended to Central Mediterranean by analysis of older digital data. A unified seismic catalogue and seismotectonic map for Sicily/Sicily Channel will be compiled
- Scientific Report on probabilistic seismic hazard assessment for the region, and earthquake ground motion scenarios in terms of pga, pgv and spectral acceleration

# WP 2 –Activity 2.1

## Outputs expected by March 2014

### 3. Geophysical studies

- Use of geophysical equipment bought is already being used for site characterisation as part of a Ph.D. project. Results will be incorporated in the technical report.
- Report on coastal geomorphology and associated risks of rockfalls and cliff collapse being studied through geophysical techniques, including ambient noise analysis.

## WP 2 –Activity 2.1

### Outputs expected by March 2014

- Dynamic characteristics of buildings using ambient vibration analysis are being studied in collaboration with Civil engineering colleagues.

# WP 2 –Activity 2.1

## Outputs expected by March 2014

### 4. Building vulnerability

- Numerical modelling software to be purchased
- Development of Tools for the Assessment of Vulnerability - Building Scale, Urban area scale
- (Ruben please continue)