

Seismic monitoring and vulnerability framework for civil protection

Training, capacity building, dissemination

Prof. Dr. Stefano Parolai
Project coordinator



Dissemination

The deliverable outlining the dissemination plan has been submitted, but it is open for discussion and modification.

Activities proposed/underway include:

- Project website.
- Project brochure (nearing completion).

• Brochures and short movies about the field activities.

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• Meetings with CP during field work.

ONGOING

• Seismic vulnerability assessment workshop (l'Aquila, Italy).

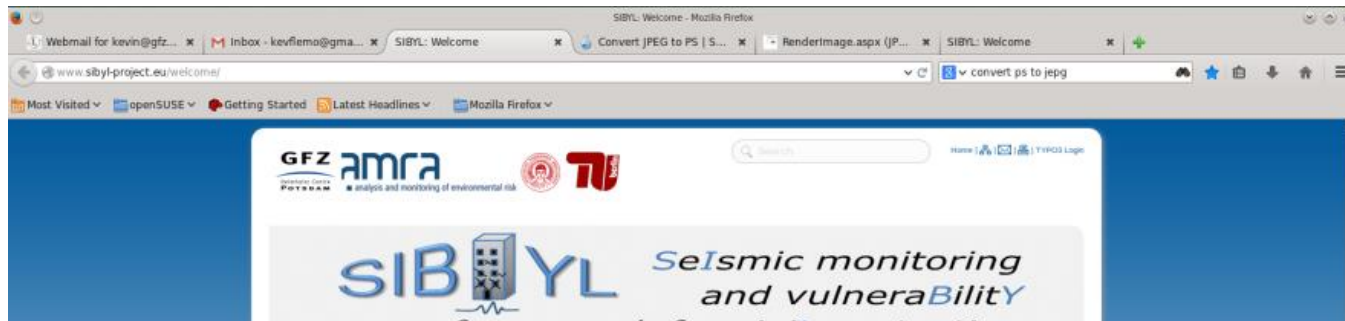
IN PROGRESS

- Final project meeting.
- Final project brochures etc.

Project website

The project website is active and is hosted by GFZ.

www.sibyl-project.eu



PLEASE – we require the contribution of all participants to make it as useful as possible (and to remind us to update it)



Brochure

The brochure is nearly completed.

SIBYL - Seismic monitoring and vulnerability framework for civil protection

Coordinator

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Why SIBYL?
Earthquakes often cause serious damage to civil infrastructure. The loss of human lives and the destruction of infrastructure can be minimized. One way to do this is to assess the exposure and vulnerability of the built environment both before and following an event. Such actions require a cost-effective framework that allows appropriate actions by Civil Protection (CP) authorities to be undertaken. SIBYL is therefore setting out to develop tools for short notice assessments in the pre-event stage, and for monitoring the built environment's dynamic vulnerability during a seismic sequence.

Collection & integration of data
An important part of SIBYL is to provide an integrated suite of ground measurement and structural model information. The issue of the built environment to seismic risk while keeping in mind the potential for expanding it to other geo-hazards. This will involve combining remote sensing and ground data capture and the generation of object-based information on buildings and areas. The latter will be done in a simple and flexible GIS environment based on a popular FOSS (Free Open Source Software) front-end, and a powerful FOSS database as the back-end.

In-situ assessment of structural vulnerability
The development of a rapid, low-cost and scientifically well-founded approach for assessing the seismic vulnerability of existing reinforced concrete (RC) buildings, both residential and public, will contribute greatly to the information available to CP authorities. The procedure will conform to existing design and construction rules of practice and will be suitable for undertaking a series of preventive checks of RC buildings in areas.

Task B
Ground measurement

Task C
Structural model

Task D
Monitoring S

Developed Hazard Map

Seismic risk and capacity building
A method for the assessment of time variant seismic risk of single structures over short time-scales (i.e., during the seismic crisis) will be implemented. The resulting model will allow the implementation in fully-automatic systems for the so-called building tagging, which is the procedure for regulating the occupancy depending on the variation of structural risk; e.g., prohibit access to anyone (i.e., red tag), allow access only to trained emergency operations personnel (i.e., yellow tag), or resume from business interruptions allowing normal occupancy (i.e., green tag).

Project publicity
If CP authorities don't know about the possibilities developed within this project, then all the efforts made will be wasted and the authorities will still possibly lack tools to enhance their capabilities. Hence, this is why the aim of this task is to advertise and disseminate the goals, context and products of the project. Such activities are essential to ensure the lasting legacy of such a project.

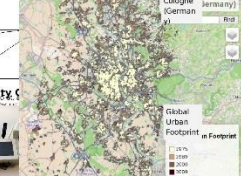
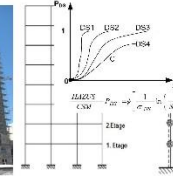


The SIBYL work flow:

SIBYL divides its activities between:

- Rapid data collection and integration;
- Rapid and low-cost in-situ building vulnerability assessment;
- Real-time monitoring during a seismic sequence.

Also critical to the project is the development of a capacity building program that allows authorities to exploit the project's products and the dissemination of the project's aim and results to the wider community.



GFZ-MOMA-Measurement-technique



An image (Cologne) recorded by the GFZ-MOMA system



Civil Protection Interaction

- Discussions were held with a representative of THW (Germany) during field work in Cologne and considerable interest was shown.
- For the workshop in L'Aquila, a preliminary agenda has been sent around to interested parties.

Engineer Fabrizi from L'Aquila has facilitated access to several schools, but is open to additional suggestions.



Software (tool) licencing

What software licence should be employed for the tools developed within SIBYL has not received much attention.

A free and open software source (FOSS) framework is being adapted by GFZ for the tools they are developing, in accordance with other previous projects (e.g., SENSUM).

The BSD 3-Clause Licence

What is the feeling of the consortium towards this issue?