

SERA

Seismology and Earthquake Engineering
Research Infrastructure Alliance for Europe

An EU project that integrates experimental infrastructures, data and know-how from 31 European institutions to facilitate progress in seismology and earthquake engineering research.

Mission

SERA's aim is to reduce the exposure to risk posed by anthropogenic and natural earthquakes based on innovative research and development projects.

To that aim, SERA...

- facilitates access to ten high-class experimental facilities.
- offers access to data and products in seismology and anthropogenic seismicity.
- promotes multi-disciplinary science to achieve an improved understanding of earthquake occurrence.
- facilitates collaboration and innovations in the fields of deep seismic sounding, experimental earthquake engineering, and site characterization.
- collaborates with researchers involved in previous seismology and earthquake engineering projects.



Outcome

The efforts of SERA will lead to a revised European seismic hazard reference model and support the establishment of a comprehensive framework for seismic risk modelling at European scale. Furthermore, SERA will contribute to new standards for future experimental observations in earthquake engineering; to the design of instruments and networks for observational seismology; and to develop reliable methodologies for real-time assessment of shaking and damage.

Background

Europe has a long history of destructive earthquakes. Recently, the impact of induced seismicity by underground technologies has gained importance. But we are far from completely understanding all processes involved in earthquakes and in consequence of the risks they pose to society. Minimizing earthquakes' damages and casualties is therefore a major aim of SERA.

Facts and figures

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| Call | H2020 INFRAIA-01-2016-2017 |
| Topic | Integrating Activities for Advanced Communities |
| Duration | May 2017- May 2020 |
| Project costs | 11'090'779 Euro |
| EU Contribution | 10'000'000 Euro |
| Person-months | 907 |
| Partners | 31 partners + 8 linked parties |
| Work packages | 28 |

Activities

The work packages of SERA aim to diminish Europe's vulnerability towards earthquakes. They can be divided into four main activities:



Access to research infrastructures

SERA offers access to ten high-class experimental facilities for earthquake engineering to talented researchers from academia and industry. The research facilities comprise reaction walls, shaking tables, facilities for integrated studies on geotechnical site effects and engineering seismology as well as an infrastructure for array seismology.



Joint research

How earthquakes start and evolve is one of the big unsolved problems in earth sciences. SERA contributes to answer this question with multi-disciplinary science and joint research projects. This shall lead to an improved understanding of earthquake occurrence.



Access to data and tools

To understand the nature of earthquakes, seismologists need data from historical earthquakes to seismicity caused by human activities such as drilling and fracking. Collecting these data is resource intensive. Therefore, SERA facilitates access to data and products of seismology, engineering seismology and anthropogenic seismicity.



Networking

SERA's networking activities are shaped to pool know-how, data, and tools to facilitate exchange between professionals and researchers from different fields. To that aim, SERA will organize several workshops for teachers, engineers and the interested public.

Partners



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730900.