
DELIVERABLE

D2.2 Report on communication activities M0 to M24

Work package	WP2 Communication, dissemination and outreach
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Summary

The main internal and external communication measures of SERA, outlined in the communication concept, were implemented and established since the beginning of the project. This deliverable lists all internal and external communication activities of M0 to M24 of SERA. Considering the constant number of subscribers to the internal newsletter, the increasing number of subscribers to the external newsletter and the SERA Twitter account, as well as the steady number of website visitors per month, the effectiveness and relevance of these communications means can be considered proven valuable and effective, and will therefore be continued.

1 Internal communication

The internal communication covers all relevant project developments including organizational matters and enables exchange through different communication channels. The internal communication aims to provide an optimal work environment, where information is easy to retrieve and general knowledge is equally accessible for all participants.

1.1 Internal newsletter

The internal newsletter aims to keep participants up to date regarding important administrative issues, meetings, deliverables and it shall strengthen the community by giving informal insights to the project. Until today, six internal newsletters were sent to the project participants. Three newsletters are distributed per year. The next internal newsletter is planned for June 2019. For further information about the internal newsletters, refer to D2.5 “Internal Newsletter”.

- See appendix for sent internal newsletters between M0 and M24.

Internal Newsletter Issue	Number of Subscribers
First internal newsletter (Nov 2017)	138
Season’s Greetings (Dec 2017)	138
2 nd internal newsletter (Mar 2018)	137
Internal Newsletter #3 (Jun 2018)	140
SERA internal Newsletter #4 (Nov 2018)	136
SERA Internal Newsletter #5 (Mar 2019)	136

Table 1 Number of subscribers of internal newsletter

2 External communication

The external communication comprises all communication activities addressing professionals in the field of seismic hazard and risk such as engineers, seismologists, the industry, public managers, and non-professionals in the field like media, citizen scientists, homeowners, students, teachers, and other interested persons. The following communication activities are implemented to address SERA stakeholders.

2.1 Website

The SERA website (www.sera-eu.org) acts as the main external communication tool. It addresses all external target groups and provides information on a general and comprehensible level. The website also offers detailed information about work packages, conference dates, and helpful links. An average of 3730 visitors are recorded on the website per month.

2.2 External newsheet

The external newsheet serves as information channel between the project participants and the external public. It provides deeper insights to the project, compared to the news on the website. Until today, three external newsheet were distributed. The next newsheet is planned for May 2019. We publish a minimum of two newsheets per year. For further information about the external newsheets, refer to D 2.12 “Biannual newsheet”.

- see appendix for sent external newsheet M0 – M24

External Newsheet Issue	Number of Subscribers
SERA Newsheet #1 (Jan 2018)	151
EU project SERA after its first birthday on track! (May 2018)	172
External Newsheet #3 (Nov 2018)	190

Table 2 Number of subscribers of external newsheet

2.3 Factsheet series

To account substantially to a better understanding of seismic hazard and risk in Europe, several questions have to be answered. With the factsheet series, SERA addresses key questions by explaining crucial terms and concepts as well as by presenting first results to an interested public. The first factsheet series was published in April 2018 (see D 2.7). The second factsheet series was published in April 2019 (see D2.8).

2.4 Social media

SERA operates a twitter channel to enhance the visibility of the project and to inform the interested public about SERA’s workshops, conferences, results and outputs. Until today, 185 persons follow @sera_research. In return, @sera_research follows related projects, project participants and relevant stakeholders.

2.5 Stakeholder dialogue

SERA organizes different workshops for professionals, citizen scientists and the interested public. The communication team helps to promote the workshops on the SERA platforms (website and Twitter). Until today, several workshops have been conducted (selection, for full list please refer to Dissemination Reporting):

- 15 February 2018: specialists' workshop on citizen seismology in London, England.
- 21 March 2018: workshop on seismic hazard in Ispra, Italy
- 28 February to 1 March 2018: IT expert's workshop on technical integration and development of EFEHR services in Pavia, Italy.
- 8 – 9 February 2018 and 8 – 9 March 2018: EIDA expansion workshop in Skopje, North Macedonia, and Madrid, Spain.
- 1 March 2018: European Exposure Workshop in Pavia, Italy.
- 10 April 2018: workshop on deep seismic sounding in Vienna, Austria.
- July 2018: Teachers' workshop in Guimarães, Portugal.
- 27 – 29 September 2018: European Vulnerability Workshop in Porto, Portugal.

3 Appendices

1. Sent internal newsletters M0 – M24
2. Sent external newsheet M0 – M24

Contact

Project lead	ETH Zürich
Project coordinator	Prof. Dr. Domenico Giardini
Project manager	Dr. Kauzar Saleh
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Project website	www.sera-eu.org

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Although SERA in Italian means "evening", we are at the very beginning of the project. First activities have gained momentum and others like the project website or a teachers' workshop have already been successfully completed, as you will read in this internal newsletter. Published three times a year, the newsletter will point to important organizational matters, offer progress reports, provide insights to work packages, and introduce SERA members and their activities in the "readers letter" or by giving several answers to one question. To be able to compile an informative, interesting and useful newsletter we need your input, so do not hesitate to send your news to the communications team ([Stephanie Schnydrig](#) and [Michèle Marti](#)) or the project manager ([Kauzar Saleh](#)).

Organizational matters

Webinar

We would like to invite all SERA participants to attend a webinar in which we will present the internal workspace, introduce the SERA templates, the project website and other communication tools. The webinars of one and a half hours will take place on 28 and 29 November from 10.30 to noon. They offer a unique opportunity to get familiar with the most important tools used within SERA, so whenever possible, try to allocate the time. Please register here for one of the webinars: sandbox.getindico.io/event/202.

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Intranet

The [SERA internal workspace](#) is hosted by ETH Zurich. It offers a common repository for exchanging project documents and for keeping track of events and tasks related to SERA. All project participants have access to the workspace and can read, download, and upload documents, add events, and create and contribute to discussion threads. It is mandatory for every project participant to store deliverables for the EC and internal reports on the workspace. Also, the project office kindly requests all WPs to produce a meeting summary (see [templates](#)) after each meeting and to store it in the folder allocated to each WP. The workspace guidelines are summarized in [this document](#).

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Templates

In order to guarantee a consistent appearance of the project, we developed templates for documents and presentations. We offer the following word templates (.dotx) and two presentation templates (.ppt):

- Deliverable (template for EU deliverables)
- Internal report (template for internal reports requested by the SERA project office)
- Internal communication (template for internal notes addressed to the SERA participants)
- Agenda (for any SERA-related meetings)
- List of participants (for all SERA-related meetings – note this is compulsory for project auditing)
- Meeting summary (concise summary of meeting outcomes)
- Meeting minutes (extended summary of meeting outcomes)
- Basic document (plain document with logo and footer)
- PowerPoint presentation in normal and wide screen format (for all SERA-related presentations)

Be aware that the use of the templates is mandatory for milestones, deliverables and presentations. You are invited to use the additional templates to report or document your SERA-related activities. Please use the templates as provided. You can download the templates and the template manual from the internal workspace ([DOCUMENTS/C. TEMPLATES AND LOGOS](#)). At the same place you can access the style guide specifying SERA's colour climate and other corporate design features.



Website, Twitter and external newsheet

Have a look at the brand new [SERA website](#). Besides informing the public about the projects aims and activities, it helps the project partners to keep up to date by providing information about current progresses and events. In addition, we introduced a Twitter profile [@sera_research](#) to distribute latest news. Become part of the SERA community by following, retweeting or tagging SERA. In deep, SERA milestones and important progresses will be highlighted in the external newsheet, distributed twice a year to interested stakeholders. And remember: good and up-to-date communication is only possible with your input!

In the spotlight

Teachers' workshop in Bucharest

For three days at the beginning of November, more than 200 teachers mainly from Romania but also from Moldavia and Ukraine gathered for the first SERA teachers' workshop in Bucharest. The aim was to learn methods to bring pupils in touch with complex scientific concepts by increasing their understanding of earthquake hazards and risk.

The workshop started with an introduction into seismology and engineering. Afterwards, the teachers had the opportunity to choose between four parallel interactive sessions: "Basics in seismology", "Introducing and demonstrating earthquake engineering to schools", "Mars@School and Insight mission" as well as "Citizen seismology in education". They could also visit the Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH) - one of the most important public R&D organizations in Romania and National Institute for Earth Physics.

In the following two days, the SERA workshops were part of the National Conference of the Community for Science Education (CNCS2017), organized in the framework of the European initiative SCIENTIX by a group of partner institutions and supporting projects. Its purpose was to bring together international and local experts from education and science, representatives of research institutes, schools and universities, education and research policy decision-makers, industry and civil society. To that aim, the conference offered

round tables, a panel of experts and more than 20 hands-on workshops including the four SERA workshops.

The SERA workshops were organized by members of WP3. Their goal is to connect SERA partners that are already leading seismo@school initiatives, supporting them and sharing best practices as well as to organize workshops such as the one in Bucharest.



[Click here for more pictures](#)



Transnational access projects on track

An important part of SERA is to offer transnational access to ten high-class European experimental facilities for earthquake engineering, integrated studies on geotechnical site effects and engineering seismology as well as array seismology. Access is provided to the most talented research teams, which are selected by the TA-SEP (Transnational selection and evaluation panel) based on project proposals. The first call for proposals was launched in June 2017. The TA-SEP chose 17 research projects this October, which you can find [here](#). The second call for proposals starts on 5 January and will last until 4 March 2018. More information will follow on the [SERA website](#) and on [sera-ta.eucentre.it](#).



Reader's letter

From Rémy Bossu (EMSC), member of JRA6 besides other WPs and SERA boards.

"In JRA6 we just have a research paper accepted that explores whether felt reports, massively collected at EMSC, can provide a complete and rapid picture of earthquake's effects, especially for damaging shaking levels. What we found is that one cannot expect to rapidly collect felt reports originating from damaged areas. Collection of felt reports from strong, damaging shaking is delayed by 10 to 20 min compared to lower intensity levels. We have called this 'the doughnut effect' where damaged areas are characterized by a lack of information. The same pattern is observed when considering the launches of our LastQuake app which provides rapid earthquake information: there is no launch from the damaged areas, people having obviously other priorities. Such a pattern (lack of information) is not proof of damage, but can be helpful in identifying zones potentially affected by severe damage. Thus, one goal of JRA6 is to automatically identify such a pattern in real time on individual earthquakes."

This column is a section open to all SERA participants. It gives you the opportunity to share your latest research, best practice experiences, open questions or comments and news from your research field. Whatever comes to your mind, contact the [SERA communication office](#). We are looking forward to receiving your input!

SERA in progress



>20 meetings
work package meetings, management board meetings



5 deliverables
handed to the EC



200 participants
at teachers workshop in Bucharest



17 proposals
selected by TA-SEP for transnational access projects within first call



6 months
passed since the project started



16 followers
on Twitter. Follow us on @sera_research.

One question - several answers

What do you aim to achieve within SERA?

"My ambition is to build links between diverse communities. Geographically between groups in partner institutions working on similar problems; interdisciplinarily between communities working on different but related topics - in my case educational and citizen seismology". - [Paul Denton](#), **WP3 leader from NERC**.

"My motivation includes three things: promote science and enhance collaboration with SERA colleagues, provide a high quality contribution to the solution for seismic risk reduction obtained by testing of models on the high class seismic shake table facility in IZIIS, and propose a concrete application of the research results from the experimental tests in practice." - [Lidija Krstevska](#), **WP14 member from IZIIS**.

"The European risk assessment model must take into account site amplification. To that aim, we want to develop a method for estimating soil amplification coefficients based on widely available data across Europe, such as geology, morphology and topography. After running calibration and test cases, the method should be applicable for whole Europe." - **Myriam Belvaux, GA and WP26 member from BRGM**.

Calendar

Last week of April 2018, **Bucharest**

SERA annual meeting
(Further details will soon be available
on the SERA website)

The next internal newsletter will be released in February 2018.
If you would like to share news with your SERA colleagues, please send your inputs to the SERA communication team (stephanie.schnydrig@sed.ethz.ch or michele.marti@sed.ethz.ch).

Liability claim

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Our annual scientific meeting taking place in Bucharest is coming closer. Besides representatives of all work packages offering insights into their WP progress, the Management Board and the Scientific Advisory Board will attend the meeting. Find in this newsletter important information about the programme, site events and accommodation. We are looking forward to meeting you there!

Besides this practical information get a glimpse into the [citizen science workshop](#) in London, an upcoming [event on earthquake early warning](#) and much more. Enjoy reading!

Annual scientific meeting in Bucharest

Agenda

Venue

Hotel InterContinental Bucharest, Fortuna room, floor 21st

Tuesday, 24 April 2018

14:00 - 18:30: work packages meetings, WP2, WP7, WP23/24

Wednesday, 25 April 2018

09:00 - 17:30: main meeting with presentations from JRA, TA and NA.

19:00 : social dinner

Thursday, 26 April 2018

09:00 - 15:30: main meeting with presentations from NA, VA, SAB and MB

15:30 - 18:00: visit to the National Institute for Earth Physics (INFP)

Friday, 27 April 2018

08:30 - 13:00: individual work packages meetings, WP6, WP27, WP25

A draft of the detailed programme can be found [here](#).

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Registration

The registration is open until **15 March 2018**. We ask everyone who is attending the main meeting and/or one of the work package meetings to register [here](#).

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Accommodation

On the registration page we offer the following prices for your stay in the hotel [InterContinental Bucharest](#):

- Single occupancy at 120 €/room/night with breakfast (plus VAT 9%, city tax 1%)
- Double occupancy at 135 €/room/night with breakfast (plus VAT 9%, city tax 1%)

Please indicate in the [online registration](#) whether, for how long and which option you would like to book.

The hotel InterContinental is situated in the city centre of Bucharest. From the airport Bucharest-Băneasa it takes you around 30 minutes, from the airport Bukarest-Otopeni it takes around 1 hour by bus to the hotel.

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Visit to INFP



During our visit to the National Institute for Earth Physics (INFP), the leading seismological institution in Romania, you will have the chance to get to know the "home" of the local SERA team. They will guide you through their main building (picture) and research infrastructures.

INFP exhibits a well-developed and complex monitoring infrastructure including seismic, infrasound, and GPS. They also have an earthquake early warning system in operation. During the visit, one can perform offline tests from the command room to see how the system works: when an earthquake is detected at the surface, the seismic data is sent in real time to the INFP. There, the first four seconds of data are analyzed and an alert is issued. These insights are of direct use for WP4 and WP28 but might also be of interest for others.

Information about further research activities and projects at INFP is available on their website (www.infp.ro).

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SERA goodie

We would like to distribute a small souvenir in Bucharest to every SERA participant. But before distributing the thousandth pen or hundredth cup you do not really like, we ask you to vote for your preferred souvenir - just click below on your wished one!

- [Pen](#)
- [Bag](#)
- [Cup](#)
- [Bottle](#)
- [Something else](#)
- [Nothing](#)

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If you have any questions regarding the programme or the work package

meetings, do not hesitate to contact our project manager Kauzar Saleh (sera_office@erdw.ethz.ch). For the logistics/accommodation, please contact Romano Meier (romano.meier@erdw.ethz.ch).

Organizational matters

Communication contact

As we pointed out during the [webinar last November](#), it would be helpful if every work package has a designated person responsible for communication activities. We will contact this person to collect information on publications, conference communications, outreach activities and newsletter contributions throughout the project.

We therefore ask every **work package leader** to send Stephanie (stephanie.schnydrig@sed.ethz.ch) the name of this person in your work package - in case you have not done it yet. You are also invited to add the word "communication" to the role of this person directly in the intranet, in the [participants section](#).

Project flyer



We are happy to announce our brand-new SERA project flyer. It is a 6-sided folded flyer with practical information about the project. Do not hesitate to link it on your website and to disseminate it to interested people, you can download it [here](#).

If you need printed flyers, you can contact the communication office (Stephanie or Michèle).

In the spotlight

Workshop on educational and citizen seismology in London

Around 40 researchers engaged in seismology gathered under the coordination of NA1/WP3 in mid-February in London. The purpose of the workshop was to discuss, how schools and citizens could contribute to an earthquake early warning system. The idea is to incorporate data of low-cost school seismometers as well as felt reports to an early warning system. Such an initiative should be established by governments or initiated by citizens and educational seismology groups.

The next NA1/WP3 workshop will be held in July in Portugal.



Reader's letter

Join the "earthquake early warning" voices in Malta!

The 36th General Assembly of the European Seismological Commission will take place in **Valetta (Malta)** from **2 to 7 September 2018**. SERA participants **Aldo Zollo, John Clinton, Stefano Parolai** and **Matteo Picozzi** will be convenor of session [S18 - towards a faster and more accurate assessment of the impact of an earthquake](#) - which is related to the topics investigated by SERA. The aim of the session is to provide a **state-of-the-art overview** in the field of **earthquake early warning** and **rapid response systems**. In particular, they intend to create a forum to share experiences, techniques, perspectives, to identify areas for improvements, and to move towards an international agreement on standards, instrumentation, and methods for new real-time seismic risk mitigation systems.

For questions regarding the SERA related session, do not hesitate to contact Matteo Picozzi (matteo.picozzi@unina.it). For general information about the event, visit the [organizer's website](#). It would be a pleasure to meeting many of you there!

SERA in progress



~30 participants
at European
exposure workshop



60 followers
on Twitter.



~ 40 participants
at citizen science
workshop in
London

One question - several answers

What was your scientific highlight in 2017?

"The realization of a **multi-axial subassemblage testing setup for large-scale structural testing** and an innovative test rig for **thermomechanical hybrid simulation** represent our 2017 highlights. They are installed at our [Laboratory of Structures \(IBK\)](#). With these test setups we made a step forward towards more realistic coupled numerical-experimental simulations." - **Giuseppe Abbiati, WP27 member from ETH.**

"In 2016, I visited the region in **Central Italy** affected by a series of **catastrophic earthquakes**. Afterwards, in 2017, I held invited lectures in Macedonia and Hong Kong related to the catastrophic sequence of earthquakes that caused incalculable damages to historic monuments and churches. Currently, I am **writing a book** on these earthquakes and their effects upon the infrastructure and buildings." - **Mihail Garevski, WP14 leader from IZIIS.**

"The [paper by Lecer et al.](#) has a great potential to benefit to the **future of marine acquisition surveys regarding costs**. They assessed the potential of sparse seabed acquisitions in conjunction with high-order multiple imaging techniques. The results demonstrate that it may be possible to extend some commonly accepted spatial limits in terms of seabed sensor sparseness without compromising the resolution of 3D/4D imaging. This imaging technique provides more flexibility in the design of the receiver layout in addition to the economic benefits. Sensors can be placed further away from seabed noise generators in quieter zones on the seabed thereby improving the detectability of weak 4D signals without compromising the target illumination." - **Monika Ivandic, WP5 member from University of Uppsala.**

"**Reusable rocket** boosters created by **SpaceX**. In 2017 a reusable rocket booster safely landed back to earth after its use." - **Dionysis Biskinis, WP12 member from UPAT.**

"The fascinating existence of long ignored **slow slip earthquakes** is questioning our view and models. Studying these phenomena requires to understand what are the characteristics time and size scales of the underlying process. We explored this issue by studying sizes and characteristic time scales at which 'slow' slip occurs on a subduction zone. We have been able to detect in GPS data a series of slow slip events that are indicating of the actual size diversity of this phenomena ([Rousset et al., 2017](#)). Through a joint analysis of seismological and geodetic observation, we studied the fine structure of slip history during a large (Mw7.5) SSE lasting about 6 months. **We discovered that it is actually a cascade of short slip transients with apparent durations as small as one day.** The slip episodes represents less than 25% of the duration, and are separated by periods of almost complete coupling of the interface ([Frank et al., 2017](#)). Refining and modelling this observation is an exciting challenge for the future." - **Michel Campillo, WP4 member from University of Grenoble.**

Calendar

21 March 2018, Ispra (Italy).

25 - 26 April 2018, Bucharest (Romania).

Workshop on seismic hazard
[Registration](#) and [programme](#)

10 April 2018, Vienna (Austria).
Workshop on deep seismic sounding

SERA annual meeting

2 - 7 September 2018, Valetta (Malta).

General Assembly of European
Seismological Commission

The next internal newsletter will be released in July 2018.

If you would like to share news with your SERA colleagues, please send your inputs to the SERA communication team (stephanie.schnydrig@sed.ethz.ch or michele.marti@sed.ethz.ch).

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In April, about a third of us met in the nice Romanian capital Bucharest for the first annual meeting. All presentations and some pictures of these two days can be found on [Sharepoint](#). A special thank goes to our hosts, the INFP team, who also organized an interesting tour to their institution.

With the project running for more than one year, the first financial reporting is approaching. What you need to do is explained in this newsletter. Furthermore, we compiled some guidelines specifying the EU regulations for publications, which every project partner has to consider. Please read them carefully.

After that, enjoy reading about SERA's latest highlights!

Organizational matters

Internal financial check

The SERA office is conducting an internal financial check in preparation for the first official reporting this year (M1-M18). In this way, we intend to identify potential issues before M18, and get the partners familiarised with the financial reporting materials.

The internal check covers the first year of project implementation (M1-M12), and **it has to be completed by all partners and linked third parties by 12 June 2018**. For that purpose, reporting guidelines have been distributed ([20180401 SERA Guidelines for EC reporting_v0](#)), and a specific Excel file was sent to each financial contact last April. Once reviewed, each partner will receive feedback on the submitted information.

If you have any questions or require additional time, please contact the project manager Kauzar Saleh (kauzar.saleh@erdw.ethz.ch).

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Publishing open access: all you need to know

Under Horizon 2020, each beneficiary must ensure open access to all peer-reviewed scientific publications relating to its results. Therefore, open access is also an obligation for all SERA partners.

What does open access mean?

Open access means providing online access to peer-reviewed scientific publications that are free of charge for a reader. Open access does not mean that projects must publish all their research results as soon as they are

obtained, it only sets certain requirements when the consortium wants to publish them.

3 steps to accomplish the regulations

1. Store your publication in a repository

Beneficiaries must deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications (applies to all types of publications and/or data sets) (e.g. [Europe PubMed Central](#); [arXiv](#); [OAPEN library](#); [Zenodo](#) etc.). A repository for scientific publications is an online archive. Institutional, subject-based and centralised repositories are all acceptable choices. Repositories that claim rights over deposited publications and preclude access are not. This must be done as soon as possible and at the latest upon publication.

2. Provide open access

Beneficiaries can freely choose between the most appropriate route towards open access for them:

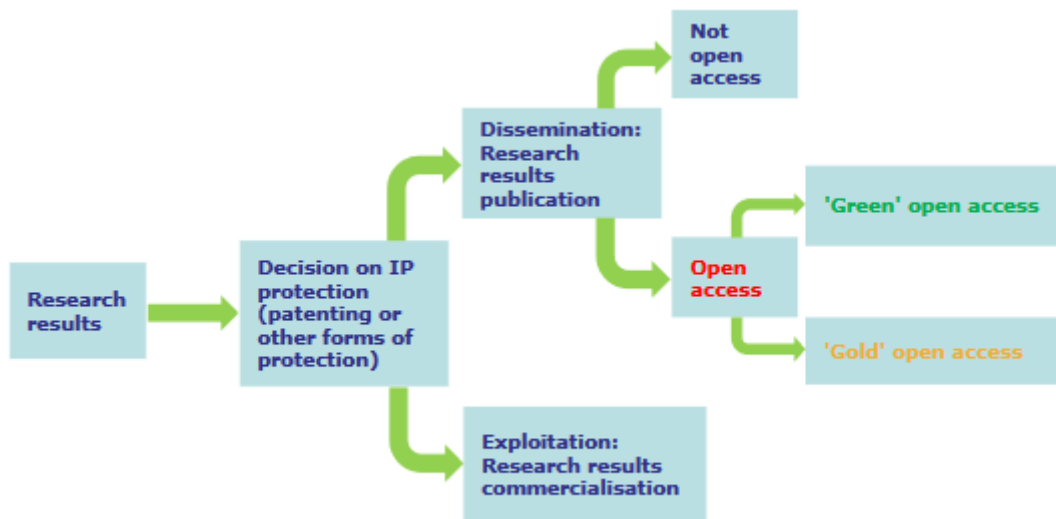
- Self-archiving (also referred to as 'green' open access) means that a published article or the final peer-reviewed manuscript is archived (deposited) in an online repository before, alongside or after its publication. Repository software usually allows authors to delay access to the article ('embargo period'). If this route is chosen beneficiaries must ensure open access to the publication within a maximum of six months (twelve months for publications in the social sciences and humanities).
- Open access publishing (also referred to as 'gold' open access) means that an article is immediately provided in open access mode (on the publisher/journal website). Publishers sometimes charge so called Article Processing Charges (or APCs) to make articles open. Such costs are eligible for reimbursement during the duration of the project as part of the overall project budget.
Furthermore, the EU funded pilot project [OpenAIRE](#) (Open Access Infrastructure for Research in Europe) provides support for open access costs incurred after the end of the grant [for FP7 projects](#).
In the case of gold open access publishing, open access must be granted at the latest on the date of publication and you also have to deposit a copy in a repository.
- SERA participates in the [Open Research Data pilot](#). Therefore, depositing the research data, which validate the results of the publication, will also be required once the Data Management Plan is elaborated and approved.

3. Do not forget

Beneficiaries must also provide open access, through the repository, to the bibliographic metadata that identify the deposited publication. These must be in a standard format and must include the following:

- 1) terms ["European Union (EU)" & "Horizon 2020"]["Euratom" & Euratom research & training programme 2014-2018"]
- 2) name of the action, acronym and grant number
- 3) publication date, the length of the embargo period (if applicable) and a persistent identifier.

Detailed information is provided on this website: ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-dissemination_en.htm



Open access to scientific publications and research data.

In the spotlight

Studying the seismic behaviour of reinforced concrete frames

An international project team composed of scientists from Cyprus University of Technology, Ecole Centrale de Nantes and DENCO Structural Engineering carried out experiments at the STRULAB reaction wall at the University of Patras – one of the ten research facilities SERA is facilitating access to. The scope of the project called ARISTA (Seismic Assessment of ReInforced Concrete frames with SmooTh bArs) was to study the seismic behaviour of a 1:1.5 scaled three-storey two-bay reinforced concrete frame with smooth bar reinforcement. According to the project members, the results will provide invaluable information for design guidelines and code rules.

The first tests consisted of a cyclic loading-unloading-loading history. The top story have undergone a displacement of ± 50 mm during a cyclic loading-unloading-loading history and a final unloading cycle to zero force. The maximum damage occurred at the first story in the form of shear cracks. The relation between the story shear force and interstory drifts are shown [here](#). The columns in the first story cracked at a shear force of approximately 100kN. Due to yielding of the reinforcement, a small residual drift after the final unloading remained.

The ARISTA-project leaders already plan a second test series. Subsequently, the results will help to calibrate numerical mathematical models for the flexural and shear capacity of substandard RC frames with smooth bar reinforcement.

For project and contact details, please click [here](#).



Factsheets: basics in earthquake engineering



To account substantially to a better understanding of seismic hazard and risk in Europe, several questions have to be answered. With our factsheet series, we address key questions SERA is challenged with and present preliminary results.

Throughout the project, we plan to publish three such factsheet series. The first one is available now - [online](#) as well as in [PDF form](#). The questions answered therein are:

- Why is it important to know the seismic hazard of a certain region?
- What is seismic risk?
- What happens to buildings in case of an earthquake?
- How does the testing of a building on a shake table works?

Helping hands are needed for the next two series. Therefore, please send ideas and support offers to [Stathis Bousias](#).

SERA in progress



>50 participants
at SERA scientific
annual meeting in
Bucharest.



2 publications
published
within SERA.



33 proposals
approved by TA-SEP
for transnational
access projects.



> 100 followers
on Twitter
@sera_research.

One question - several answers

What is in your opinion the main challenge to be solved in your field?

"The main challenge to be solved in earthquake seismology , in my opinion, is to understand the origin of "asperities" along larger faults. Mapping the location of asperities and understanding the rupture preparation processes of mega-thrust earthquakes in plate interfaces along the various subductions zones, is a key to assess the earthquake hazard realistically and hence mitigate the associated risks". - **Kuvvet Atakan, involved in WP5, WP6, WP27 leader from University of Bergen.**

"My focus in SERA is anthropogenic seismic hazard. In this field, I believe the Mmax estimate for local anthropogenic shocks in space, time, and size domains remains the key open question. It challenges the deterministic versus stochastic dogma seismological communities are discussing already for a while. Any success to calibrate time-dependent induced seismicity models and their dependency on time-varying operational parameters will open routes to further capture dependency of tectonic and anthropogenic seismicity episodes and associated dependency on the driving stress-strain changes. Impacts on anthropogenic hazard and on the fundamental understanding on the mechanics of earthquakes and faulting are the expected rewards". - **Jean-Robert Grasso, involved in MB and WP1 from CNRS.**

Calendar

**10 July 2018, Guimarães
(Portugal)**

Teacher's workshop

**2 - 7 September 2018, Valetta
(Malta)**

[36th General Assembly of the
European Seismological Commission](#),
with a [session by SERA participants](#)

**27 - 28 September 2018, Porto
(Portugal)**

SERA Vulnerability Workshop
[Programme](#)

**September 2018, Krakow
(Poland)**

Joint meeting of JRA1 and JRA2

**12 - 13 November 2018, Athens
(Greece)**

ORFEUS Annual Observatory Meeting
and Workshop

If you would like to share news with your SERA colleagues, please send your inputs to the SERA communication team (stephanie.schnydrig@sed.ethz.ch or michele.marti@sed.ethz.ch).

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November 2018 marks 18 months since SERA started. We have now reached half-time and can, on one hand, look back at a great variety of past events and interesting research results; on the other hand, we still have many upcoming events and developments to look forward to.

This newsletter will provide you with updates on what has happened so far, like the very successful teachers' workshop in Portugal with more than 900 participants, or the JRA1/JRA2 workshop in Krakow.

Upcoming deadlines are communicated for the first periodic report to the EC, some first information is now available about the Second Annual Meeting, and there is a small reminder that every interesting newsletter starts with you and your input!

Organizational matters

First periodic report to the EC

In order to consolidate the SERA pre-financing received by the partners and release the second payment, the EC requires that we submit the official report of activities for the period May 2017 - October 2018. This is a joint task to be conducted between the SERA Office, the WP leaders and the partner administration contacts, who have now received all the required templates (see e-mail Subject: [SERA M1-M18 EC reporting materials] for detailed instructions). Please take a moment to read through the e-mail, download the templates, and ensure that you collect all the inputs from your WP members and organisations to submit your documents **by November 16th 2018**. This is a fixed deadline as the whole consortium reports jointly, so please make sure you allocate sufficient time, and also that you send us questions you may have in advance.

.....

Second Annual Meeting

Following the first annual meeting in Bucharest, we are planning to hold our next scientific annual meeting in **the week of May 6th 2019**. The location is yet to be decided; we therefore invite partners interested in hosting the meeting to contact the [Project Manager](#) and/or [Coordinator](#). This will be an important event to discuss progress after two years of project implementation, and also to prepare the external review meeting with the EC that will take place right after the annual meeting.

.....

Reminder about publications within the SERA framework

We would like to remind everyone that in all publications associated to SERA, a sentence has to be included at the end mentioning the project and explaining the affiliation. We propose the following sentence to be included under "Acknowledgements":

This study has been partially funded by the H2020 project SERA (Seismology and Earthquake Engineering Research Infrastructure Alliance for Europe).

As already explained in the last internal newsletter, under Horizon 2020, each beneficiary must ensure open access to all peer-reviewed scientific publications relating to its results. Therefore, open access is also an obligation for all SERA partners.

.....

Input for SERA website, twitter, and newsletters

We love to update the SERA community as well as the general public with news about your latest research results, workshops, conferences, and other activities. In order to provide up-to-date communication, we need your input!

Whether you would like us to tweet ([@sera_research](#)) about an upcoming conference you are organizing, write a short report for the [SERA website](#) or include some pictures of your last WP field trip in the newsletter: Send an e-mail to [Janine Aeberhard](#) or [Michèle Marti](#). One of the SERA goals is to facilitate collaboration and innovations, and being able to provide interesting stories, facts and news starts with you!

.....

Updated Data Regulations According to GDPR

We hope you enjoy receiving and reading the SERA internal newsletter! To comply with the updated data regulations in the EU (GDPR), we need to remind you that we are using MailChimp to compile our newsletter. With your subscription, you agreed to the privacy policy and terms of MailChimp.

To ensure that also the recipients of the external newsheet are aware of the data policy, a consent statement will be added to the next newsletter. To comply with the new regulations, we have activated a double-opt-in process where interested readers receive a second message following their initial sign-up asking for their permission and their agreement to MailChimp's privacy policy

In the spotlight

Teachers' workshop in Portugal

In the framework of SERA, the Instituto Dom Luiz (Portugal) organized in collaboration with Instituto Superior Técnico (Portugal) and the external partners of the WP1 "Seismology @ School" an event that took place from 9 to 11 July 2018. It focused on demonstrating how seismology and seismic engineering can provide tools and examples for educational activities.

The Portugal delegate team, i.e. Susana Custódio, Luís Matias and Guilherme Weishar, organized six SERA workshops as part of the annual meeting at Casa das Ciências (translates to "House of Science"). This conference brings

together Portuguese and Brazilian teachers from STEM fields (science, technology, engineering and math). The majority of the teachers are from high schools (students aged from 14 to 18), but there is some attendance from teachers of students of other age groups. This year, over 900 teachers attended the 3-day event. It is the largest gathering of teachers in Portugal, and this was its 5th edition.

The main goal of this conference is to allow teachers to gain new ideas, concepts, projects, and activities to enrich their lectures. The conference is therefore split in the main Portuguese STEM classes: Physics and Chemistry, Math, Biology and Geology, Introduction to Sciences, Information Technology. The keynote presentations and workshops are for the most part provided by professional researchers. In our case, the SERA workshops were part of the Biology and Geology category, because this is where seismology is taught in the Portuguese curriculum.



Reader's letter

From Monika Sobiesiak for JRA1/JRA2 "JRA1/JRA2 workshop in Kraków and visit of Rudna Mine"

"From 24th to 26th of September, 2018, a JRA1 / JRA2 joint workshop was held in Kraków at the Department of Seismology at the Institute of Geophysics, Polish Academy of Sciences. The workshop was aiming at updating all participants on the on-going work by emphasizing exchange and the use of new software developments, which can be applied to the data sets and testbeds defined within SERA. For this purpose, a rotational working schedule was employed, enabling each participant to have a trial and error testing of the different software of interest.

One major goal of the workshop was to consolidate the various seismogenic environments from tectonic, anthropogenic, and laboratory seismicity. We wanted to offer a practical approach to learn what causes induced seismicity. In order to see and feel this "in-situ", we visited Europe's largest underground copper mine in Poland near the villages of Polkowice and Rudna, north-west of Wrocław. Rudna Mine is one of the three copper mines in the Legnica-Głogow-Copper-District (LGCD) and is characterized by a high rate of seismic activity not only in micro-seismic magnitude ranges but also in intermediate sized seismic events. This hazardous situation gave way for the deployment and construction of the surface network LUMINEUS with 10 accelerometers and 17 short period stations, operated by the Department of Seismology at the IG-PAS in Kraków.

For two hours, the group could visit places in 1000 m depth, where the main excavation levels of the mine are located. It was possible to see how new excavations were prepared, and how the recovered ore bearing rock is transported to the surface. Back at the surface again, we visited the seismological observatory which is in charge of the in-mine seismic monitoring system. In case of earthquakes or collapses, the team has to determine the location as quickly as possible because successful rescue measures depend on this. We learned that the operation of a mine underlies a detailed and strict activity plan. Therefore, we are very thankful that the management and team of Rudna Mine made this interesting visit possible."



**From Rémy Bossu for VA1
"Participation in Powell Center Working Group workshop"**

"For the VA1, we like to mention our participation in the one week workshop organized by the USGS/NEIC "Future Opportunities in Regional and Global Earthquake Monitoring and Science, Powell Center Working Group, Fort Collins" that aims at defining the future activities for earthquake monitoring.

One of the conclusions is to further develop rapid sharing of parametric data and moment tensors (two activities already performed by the EMSC). In addition, USGS wants to test the integration in their shakemap of the felt reports the EMSC collects into their Shakemap. The authoritative location scheme currently in place at EMSC was well received as a way to avoid earthquake location discrepancies between different monitoring agencies. A second workshop is planned at the end of 2019."

**From Helen Crowley for JRA4
"Completion of SERA JRA4 European Vulnerability Workshop"**

"We just completed a successful SERA JRA4 European Vulnerability Workshop in Porto from 27th to 28th September. We had a number of invited speakers from across Europe that came to discuss issues including validation/calibration of vulnerability functions, efficient methodologies for the analysis of structures for fragility assessment, estimation of losses from non-structural elements, and estimation of fatalities due to structural collapse. The SERA partners presented the SERA JRA4 framework for European vulnerability assessment, with specific focus on reinforced concrete, steel and masonry structures, and received a lot of useful input and feedback from the attendees. One of the main takeaways from the workshop was that the partners of JRA4 should allow sufficient time for validation and calibration of the vulnerability functions

before presenting the first results of the European risk model, which will take place at the final JRA4 workshop in Istanbul in September 2019."

This column is a section open to all SERA participants. It gives you the opportunity to share your latest research, best practice experiences, open questions or comments and news from your research field. Whatever comes to your mind, contact the [SERA communication office](#). We are looking forward to receiving your input!

SERA in numbers



9 workshops
teachers' workshops,
joint workshops, etc.



26 deliverables
handed to the EC



Over 900 participants
at teachers workshop
in Portugal



33 proposals
selected by
TA-SEP for trans-
national access
projects within
the 1st and 2nd call



18 of 36 months
passed since the
project started in
May 2017.



160 followers
on Twitter.
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[@sera_research](#) or
[#sera_research](#) - we
will retweet your
posts.

Calendar

Deadline for completing EC reporting materials

November 16th 2018 (see article above)

ORFEUS Annual Meeting

12 - 14 November 2018
Athens, Greece

[Read more](#)

Future design of seismic networks and instrumentation workshop (WP4)

21 November 2018
GFZ, Potsdam, Germany

European Seismic Hazard Model workshop (WP25)

4 December 2018
Milan, Italy

NA5 / JRA4 Workshop

6 - 7 December 2018
Thessaloniki, Greece
[Register here](#) until 10 November 2018 or by sending an e-mail to [Evi Riga](#)

Marsquake for schools workshop (WP3)

16 January 2019
CNRS, Nice, France

Second Annual Science Meeting

Week of May 6th, 2019
Location TBD

The next internal newsletter will be released in February 2019.

If you would like to share news with your SERA colleagues, please send your inputs to the SERA communication team (janine.aeberhard@sed.ethz.ch or michele.marti@sed.ethz.ch).

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The beginning of this year also marks the beginning of the second project half of SERA and many exciting things are about to come. This newsletter provides information about the upcoming 2nd Annual Science Meeting in Edinburgh, UK, and gives some more details on the External Review Meeting by the EC. Additionally, project members present their latest work such as new shake-table dynamic tests and planned workshops.

Organizational matters

2nd Annual Science Meeting in Edinburgh, 15 to 16 May 2019

As you already know, the 2nd SERA Annual Science Meeting will take place in Edinburgh, UK, from 15 to 16 May 2019. The meeting will end around 15h30 on Thursday. If you haven't registered yet, you can do so [here](#) as fast as possible since the registration will soon be closed.

We advise you to arrange your travels early enough as rooms in Edinburgh can get rather pricey and, depending on where you are coming from, travels might take you longer than expected.

Please make sure that at least one member of each WP participates. If you have any questions, contact your WP leader or Project Manager [Kauzar Saleh](#).



Templates for 2nd Annual Science Meeting presentations

In order to keep the presentations uniform, we have provided templates for you to use. You can find them on the Intranet under Home > Documents > C. Templates and logos > Templates. If you have any questions, feel free to ask [Janine](#) for help.



External Review Meeting by the EC

The SERA Technical Report M1 to M18 has been submitted and is now being evaluated by the EC. On 7 May 2019, SERA will have an external review

meeting organised by the EC in Brussels, to assess project status at M24. It is therefore very important for all WPs to make sure that they comply with M24 deliverables. Please check whether this is the case early enough and reach out to Project Manager [Kauzar Saleh](#) in case of any problems.

In the spotlight

Shake-table dynamic tests on a steel silo filled with wheat: SEismic Response of Actual steel SILOS (SERA-SILOS)

As part of the Transnational Access framework, shake-table dynamic tests are carried out on a full scale steel silo (supplied by AGI Frame) filled with wheat since 25 February 2019 at the Eucentre Foundation ShakeLab.

The tests will be performed on the mono-axial shake-table (7m x 5.6m) in order to evaluate the silo behaviour subjected to seismic actions both in fixed and base isolated configuration.

More information on the experiment can be found [here](#) (in Italian).



SERA WP7 Workshop in L'Aquila, Italy

Within the framework of the Network Activity NA5 "[Networking databases of site and station characterization](#)" of the SERA-EU project (see [SERA-NA5 description](#) for further details), a workshop is organised. It is devoted to the

proposition of guidelines and recommendations for common best practice procedures of site-effects characterization at the seismic strong motion stations, in terms of indicators and quality metrics. Moreover, it will discuss the roadmap for strong motion site characterization in Europe in the next 10 years. All topics are related to the SERA and EPOS activities on connecting infrastructures and communities in the field of site characterization.

Additionally, a training course on Ambient Vibration Techniques for Site Characterization offered the week before (4 to 9 March 2019) and an open workshop on recent advanced techniques for site characterization (9 to 10 March 2019) are taking place. These events will be held in the same location as the SERA workshop (further details available [here](#)).

.....

SERA+ in preparation

The SERA team is now full hands in the preparation of the next proposal, SERA+, due 20 March 2019 under the INFRAIA-01-2018-2019 H2020 call. If successful, SERA+ will give continuity to SERA for another 3 years from mid 2020 on.

SERA+ connects important stakeholders in the field of seismic hazard assessment and engineering.

Reader's letter

From Helen Crowley, involved in JRA4

"One of the Joint Research Activities of the Horizon 2020-funded project SERA is entitled a 'Risk modelling framework for Europe'. As part of these research activities, a seismic risk model for Europe is being developed and will be presented for the first time at the [European Seismic Risk Model Workshop](#). The main aim of the workshop will be to obtain feedback on the model, such that it can be updated and released in April 2020. It will take place from 12 to 13 September 2019 in Istanbul, Turkey.

A first version of the European exposure model developed in SERA JRA4 was used in GEM's global seismic risk model that was released at the end of last year. It can be accessed [here](#).

Additionally, a paper was submitted to the [ICONHIC conference](#) that will take place this summer."

This column is a section open to all SERA participants. It gives you the opportunity to share your latest research, best practice experiences, open questions or comments and news from your research field. Whatever comes to your mind, contact the [SERA communication office](#). We are looking forward to receiving your input!

SERA in progress



**2nd Annual
Science Meeting**
Edinburgh, UK
15 to 16 May 2019



29 deliverables
handed to the EC



Over 20 publications
published within SERA



11 proposals
selected by
TA-SEP for trans-
national access
projects within
the 3rd call



22 of 36 months
passed since the
project started in
May 2017.



176 followers
on Twitter.
Tag us with
@sera_research or
#sera_research - we
will retweet your
posts.

Calendar

11 - 12 March 2019, L'Aquila (Italy)

SERA WP7 workshop
[More information](#)

07 - 12 April 2019, Vienna (Austria)

EGU2019
[More information](#)

15 - 16 May 2019, Edinburgh (UK)

2nd SERA Annual Science Meeting
Register [here](#) as soon as possible

6 - 7 June 2019, Belgrade (Serbia)

SERA Workshop 'EIDA and the
Balkans'
Register [here](#) as soon as possible

12 - 13 September 2019, Istanbul (Turkey)

SERA European Seismic Risk Model
Workshop
If interested, register [here](#) and
contact [Helen Crowley](#).

The next internal newsletter will be released in June 2019.

If you would like to share news with your SERA colleagues, please send your inputs to the SERA communication team (janine.aeberhard@sed.ethz.ch or michele.marti@sed.ethz.ch).

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Newsheet #1

SERA stands for "Seismology and Earthquake Engineering Research Infrastructure Alliance for Europe" and aims to reduce the risk posed by natural and anthropogenic earthquakes. To that aim, this EU project will significantly improve the access to data, services and research infrastructures for scientists and other professionals. Since its start in May 2017, SERA has already made some achievements including a workshop on seismology for teachers, first access to test facilities, or the successful launch of its project website. Learn more about these activities in our first SERA newsheet. Further updates, highlights and upcoming events will be reported bi-annually.

We hope, you enjoy reading this newsheet!



Twitter



Website



Email

Highlights

SERA kick-off meeting

The SERA kick-off meeting took place from 31 May to 1 June 2017 at ETH Zurich. The aim of the meeting was that project participants get an insight to all work packages and understand the big picture of SERA. During the social dinner on lake Zurich the participants had the chance to get to know each other on a personal level - an important aspect to make future cooperation successful.



Website and twitter account

Would you like to learn more about SERA? Then have a look at our [website](#). Besides general information on the project such as work packages, tasks and involved partners, the website provides insights on current progresses and events. In addition, we introduced a twitter profile [@sera_research](#) to distribute latest news. Become part of the SERA community by following us.

Site visit to Grimsel rock laboratory

During the meeting of SERA work package WP23/JRA1 on 18 and 19 January, ten people from Germany, Switzerland, France, Italy and Poland gathered in the snowy Swiss mountains. On the first day, they visited the [Grimsel rock laboratory](#), which is located 1730 metres above sea-level in the granitic formations of the Aar Massif 450 metres deep in the rock. The JRA1 group eyed especially on the "in-situ stimulation and circulation (ISC)" experiment since its dataset could be used as one of the validation cases for the JRA1 work package.



[Read more](#)

Interview

Transnational access projects on track



An important mission of SERA is to facilitate access to [ten high-class experimental facilities](#) in Europe. Out of 37 proposals, the TA-SEP (Transnational selection and evaluation panel) selected last October [17 promising research projects](#) within the first call and granted them access to the facilities. Igor Lanese talked with us about the selection procedure.

Which were the three main criteria for the selection?

Scientific value and innovation of the proposals were the most important

selection criteria, together with the importance for European competitiveness. Besides, technical and economical compatibility with the selected research infrastructure's available resources were critical aspects for the decision.

Where are the selected research teams from?

Overall, the involved researchers come from 18 different nations. The most represented are Italy, Switzerland and Portugal ([see detailed graphics](#)).

When will the experiments start?

The first access to NORSAR data centre has already been provided. For all other research infrastructures, the preliminary phase which includes the specimen and test setup design, material supply, specimen construction, instrumentation layout design, etc. is currently implemented. This phase generally requires few months, therefore, the first tests should start between March and June 2018.

What is the overarching goal of the experiments?

The accepted projects cover a wide range of key aspects related to structural safety. The research will encompass geotechnical aspects with soil-structure interaction and liquefaction, existing structures with limited seismic design provisions as well as innovative structural systems, with focus both at component (e.g. steel connections, coupling beams) and whole structure level, to enhanced seismic isolation and retrofit solutions. Further, the experiments aim at implementing innovative testing techniques such as geographically-distributed hybrid simulation for seismic and fire testing.

What contributions do you expect for the seismology and earthquake engineering community?

Given the heterogeneity of the selected projects and the research infrastructures peculiarities, we expect a wide range of contributions to the earthquake engineering and engineering seismology scientific community: The research will improve the knowledge and the safety of new, existing and retrofitted structures, through the investigation of specific structural aspects (e.g. components of shear resistance of coupling beams, soil-structure interaction) as well as the global response to different kind of actions (seismic, fire). The role of non-structural elements gained more and more importance in the last years, and it will be duly considered in the research. Furthermore, EE and ES communities will profit from the revision and improvements of Eurocodes, design guidelines and novel design methods based on the experimental campaigns results. Novel testing techniques will be implemented and validated, giving access to the scientific community to new powerful and cost-effective tools for structural assessment. Finally, all TA users will significantly benefit from the collaboration with highly-specialized first-class research infrastructures, bringing new skills and knowledge to their own institutions and to the whole scientific community through conferences, workshops, and so on.

The second call for proposals runs from 5 January to 4 March 2018. More information on the [SERA website](#) and [sera-ta.eucentre.it](#).

A glimpse into...

...the teachers' workshop in Bucharest

For three days in the beginning of November, more than 200 teachers mainly from Romania but also from Moldavia and Ukraine gathered for the first SERA teachers' workshop in Bucharest. The teachers learned how they can bring pupils in touch with complex scientific concepts. The core of the workshop comprised of four interactive, hands-on sessions: "Basics in seismology", "Introducing and demonstrating earthquake engineering to schools", "Mars@School and Insight mission" and "Citizen seismology in education".



The teachers workshop was a collaboration between SCIENTIX and members of work package 3. The aim of this work package is to connect SERA partners that are already leading seismo@school initiatives and supporting them in sharing best practices. Seismo@school programmes using observational seismology as an educational tool in schools and non-formal educational settings like museums are effective methods to increase people's understanding of earthquake hazards and risk.

[Click here for more impressions](#)

...a wish list of hazard products

SERA deliverable D25.1 summarises the main anthropogenic and natural hazard outputs that are required by European structural engineers and risk modellers. The engineering community requirements are mainly defined by the needs of the ongoing revisions to Eurocode 8, whereas the risk modelling needs have been identified by participants of the SERA work-package JRA4 (Risk Modelling Framework for Europe).

...standard classification schemes for Europe



SERA deliverable D26.1 describes the common classification scheme (i.e. taxonomy) that will be used within the European risk framework being developed within SERA for buildings and other elements at risk - with a focus

on the main components of industrial facilities, i.e. pipelines and storage tanks. By using a single classification scheme, it is possible to ensure that fragility/vulnerability models for specific elements at risk are compatible with the exposure models that may be developed by different parts of the engineering community. The building taxonomy is based on an international standard, i.e. the GEM Building Taxonomy, whereas a new taxonomy for pipelines and storage tanks has been developed based on the experience gained in previous European projects [SYNER-G](#), [STREST](#) and [INDUSE-2-SAFETY](#).

Outlook and events

April 25-26, 2018 Bucharest, Romania
SERA annual meeting
In collaboration with INFP, Bucharest.

Jan 5 - March 4, 2018
Transnational access call for proposals
Information are on www.sera-eu.org and sera-ta.eucentre.it.

May 21-22, 2018 Tokyo, Japan
[5th International Conference on Steel and Concrete Structures](#)

April 08-12, 2018, Vienna (Austria)
[EPOS @ the EGU 2018 General Assembly](#)

June 21-22, 2018, Paris (France)
[International Conference on Civil & Structural Engineering](#)

The next external newsheet will be released in June 2018.

We always welcome feedback and suggestions - send them to the SERA communication team (stephanie.schnydrig@sed.ethz.ch or michele.marti@sed.ethz.ch).

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Newsheet #2

SERA already celebrated its first birthday last month! On this occasion, the consortium met in Bucharest for its scientific annual meeting. The partners reviewed the current status of the project, presented achievements, and discussed upcoming issues. Get a sneak peak into this event and many more project highlights in this newsletter - enjoy reading!



Twitter



Website



Email

Highlights

Scientific annual meeting in Bucharest

From 25 to 26 April 2018, the SERA community met for its first scientific annual meeting in Bucharest. Around 70 project participants took part and presented the status-quo, results and upcoming work for their tasks and work packages. Following the contributions of all SERA participants, the SERA Scientific Advisory Board described its impressions of the tasks accomplished in the first twelve months of the project. Based on those, its members will elaborate a set of recommendations for the attention of the general assembly. In addition, the SERA management board held its third meeting to discuss amongst others, details of the data management plan or measures to ensure a successful outcome of transnational access experiments. Framing the main meeting, numerous work packages took the opportunity to get together in smaller groups and to deepen discussions on specific topics.

Of course, there was also time allocated for informal exchange: Be it at the social dinner in the old town of Bucharest, or during the tour to INFP, which the local SERA team offered.



Find this article also on our website

First results published

The first publications in the framework of SERA are published. The study called "[A Python Library for Teaching Computation to Seismology Students](#)" (Aiken et al., 2018) is one of the most downloaded studies with more than 1'000 downloads until today.

Another study (in press) "[Impact of magnitude selection on aleatory variability associated with Ground-Motion Prediction Equations: Part I- Local, energy, and moment magnitude calibration and stress drop variability in central Italy](#)" will be published in the Bulletin of the Seismological Society of America.

There will be a third and last call for proposals. Dates and deadlines will follow soon on the [SERA website](#) and on sera-ta.eucentre.it.

Interview

Towards a reference earthquake hazard model for Europe



The 2013 European Seismic Hazard Model (ESHM13) was built upon harmonized datasets and state of the art procedures without country border limitations. A goal of the joint research activities within the WP25 is to update and extent this model until 2020 to the so-called ESHM20. WP25 leader Laurentiu Danciu from ETH Zurich is giving an insight in this SERA subproject.

Why does one want to harmonize the seismic hazard models in Europe?

For various reasons. But one that comes always first, is the need to overcome the cross-border limitations of the earthquake related datasets (i.e. earthquake catalogues, active faulting, ground motion models). Earthquakes do not follow borders. Needless to say, that an earthquake occurring at the border between two countries, will have its effects crossing the political borders. Furthermore, the harmonization means also to bring together the scientific and engineering community as well as the local or national experts to homogenize the state-of-practice in seismic hazard and risk assessment.

How will ESHM20 look like?

The ESHM20 will follow the same principles as ESHM13, with state-of-the art procedures homogeneously applied for the entire pan-European region. These updates of ESHM13 will include up-to-date instrumental earthquake catalogues, refinements of local magnitude definition and calibration scales, reassessment of historical seismicity, and calibration of ground shaking models with new earthquake recordings. Priority will be given to inherent uncertainties of data, models, and their propagation in the seismic hazard assessment. The ESHM20 will reflect not only the up-to-date datasets but also the state of the art with respect to analyses methods. To this aim, we will collaborate with other joint research activities within SERA.

What is key when harmonizing models across borders?

Coordinated activities between scientific and engineering communities as well as with stakeholders are essential for the success and acceptance of the updated ESHM. Recently, a meeting was facilitated by the Joint Research Centre (JRC) in Ispra, Italy. The meeting brought together more than 30 experts from whole Europe, representing the SERA working group, [CEN/TC 250/SC 8](#) as main stakeholders of the seismic hazard model, various experts from JRC as well as the representatives of the member states. It is crucial that all involved parties commit to enhance collaboration and achieve further harmonization.

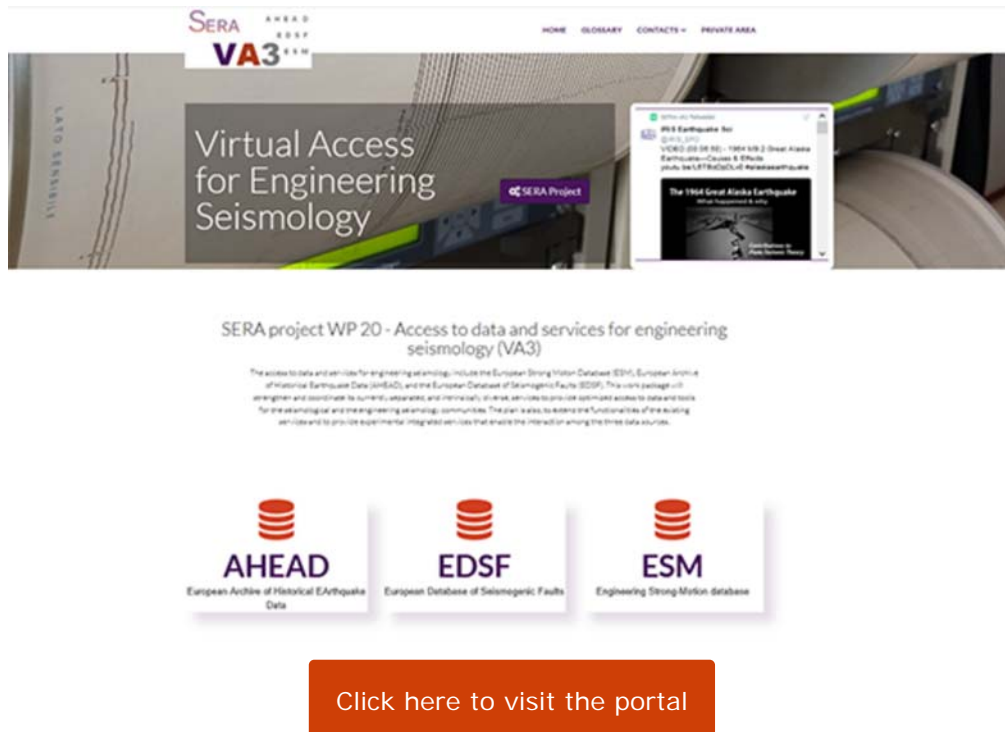
What are the next steps to be taken?

We will start again from the national models, re-evaluate the new models for every country in Europe, understand the differences and reconcile them. The updating process has already started, with catalogue compilations (earthquake catalogues, active faults) across the entire Euro-Mediterranean region. Four regional workshops to present, discuss and review the key elements of the ESHM20 are yet to be organized, starting by the end of this year.

A glimpse into...

...the virtual access portal for engineering seismology

The SERA WP20/VA3 has recently outlined a [web portal to access data and services for engineering seismology](#). It facilitates the access to the European Strong Motion Database (ESM), the European Archive of Historical Earthquake Data (AHEAD), and the European Database of Seismogenic Faults (EDSF). The portal's aim is to coordinate the currently separated and intrinsically diverse services. In future, it is planned to extend the functionalities of the existing services and provide interactions among the three data sources.



SERA project WP 20 - Access to data and services for engineering seismology (VA3)

The access to data and services for engineering seismology includes the European Strong Motion Database (ESM), European Archive of Historical Earthquake Data (AHEAD) and the European Database of Seismogenic Faults (EDSF). This work package will strengthen and coordinate its current databases and services, and provide optimum access to data and tools for the seismological and the engineering seismology communities. The plan is also to extend the functionalities of the existing services and to provide experimental, integrated services that enable the interaction among the three databases.

AHEAD
European Archive of Historical Earthquake Data

EDSF
European Database of Seismogenic Faults

ESM
Engineering Strong-Motion database

[Click here to visit the portal](#)

...our brand-new flyers



We are happy to announce two flyers: the official project flyer provides practical information about the project's goals, work packages and partners - you can download it [here](#).

Furthermore, there is a brochure specifying each of the ten research infrastructures to which SERA offers transnational access - have a look at it by clicking [here](#).

Outlook and events

17 - 22 June 2018, Cracow (Poland)

[Seismix 2018](#) with a deep seismic sounding workshop held by WP5

10 July 2018, Guimarães (Portugal)

Teachers workshop with WP3

2 - 7 September 2018, Valetta (Malta)

36th General Assembly of the European Seismological Commission, with a SERA session dedicated to earthquake early warning. [More information](#)

September 2018, Cracow (Poland) *

JRA1/JRA2 workshop

November 2018, Potsdam (Germany) *

JRA2 workshop

2 - 8 November 2018*

WP7 Community workshop

* Detailed information will follow on the website.

The next external newsheet will be released in November 2018.

We always appreciate feedback and suggestions - please send them to the SERA communication team (stephanie.schnydrig@sed.ethz.ch or michele.marti@sed.ethz.ch).

Liability claim

The European Commission is not responsible for any use that may be made of the information contained in this document. Also, responsibility for the information and views expressed in this document lies entirely with the author(s).

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Newsheet #3

November 2018 marks 18 months since SERA started and, as project manager Kauzar Saleh Contell says, it is "ready to thrive"! The past one and a half years were a great demonstration of how collaboration and support in the scientific community leads to a extensive array of smaller and greater achievements. In this newsletter, the project manager tells us more about how she experienced the first half of the SERA project, members of the SERA community describe the project's scope and the first fact sheet series is introduced. Additionally, an overview of research projects that were accepted in the last two TA calls for proposals is presented and you will learn more about the very successful teachers' workshop in Portugal with more than 900 participants.



Twitter



Website



Email

Interview



SERA half-time interview with Kauzar Saleh

November 2018 marks 18 months since SERA has started. This also means the project's halftime has now passed which offers an excellent opportunity to look at what has already been achieved and what is still to come. Dr. Kauzar Saleh Contell, SERA project manager, on past and future plans and what excites her about SERA.

Can you describe the past 18 months of SERA in three words?

Ready to thrive!

What was your personal highlight during the first half of SERA?

Working with an advanced community means that people already know what they have to do, so I am glad that all the project implementation tools that we developed fitted reasonably well with the expectations of project participants.

Even when you don't hear much from partners and you wonder if steps were unclear, suddenly everyone starts delivering and people are very collaborative. So I would highlight the nice collaboration environment, and being able to interact with people almost individually, despite being so numerous and working far apart.

What can we expect from the second half of the project?

Next year we will see many of the SERA results materialising. Just to give an idea, during the first half of the project 30 deliverables were completed, and another 70 will come in the second half. For instance many of the Transnational Access experiments now selected will be completed in the next 18 months, so the second Science Meeting in May 2019 will be a very interesting one, as all WPs will have a lot to show. A few days later the EC will conduct an external project review, this is relevant for SERA itself but also for future projects to come.

What makes SERA special to you?

SERA is a great example of how research tools can be designed to support a whole research cycle, from supporting individual teams (an example is Transnational Access in SERA), then helping teams develop collaborations and starting to function as a research community (Networking Activities, also Joint Research Activities), and finally supporting the coordinated distribution of research data to potentially open new scientific and technological questions by reaching a wide range of users (Virtual Access). These are all valid activities on their own, but I believe that linking people and strategies makes a lot of sense, as this is also necessary to support the sustainability of a research domain. Other than that, I find that Seismology and Geosciences in general are beautiful disciplines with a lot of scientific work to conduct, but also strong links to culture, people and with the capacity to influence society; two examples here are the contribution of SERA to the update of the construction code in Europe for 2020, and to the first pan-European Solid Earth organisation, EPOS, established less than a month ago, to which SERA participates with the validation of implemented services and the creation of new ones.



SERA in a nutshell

In case you missed it in on your Twitter feed: This is how members of the SERA community define the scope of the project. The quotes were collected at the Annual Meeting in Bucharest, Romania, that took place from 25 to 26 April 2018.

"Our aim is to produce an integrated assessment of seismic risk across all countries in Europe and share the outcome models and results through online platforms, available to everyone"

Helen Crowley from Eucentre

"We aim to bring together seismologists working in the fields of educational seismology, citizen seismology and geoethics - the common theme being the process of communicating the science of seismology to non-specialists"

Paul Denton from the British Geological Service

"A highlight of SERA: it opens the 10 most advanced European research infrastructures for earthquake engineering, integrated studies on geotechnical site effects, engineering seismology and array seismology to talented research groups"

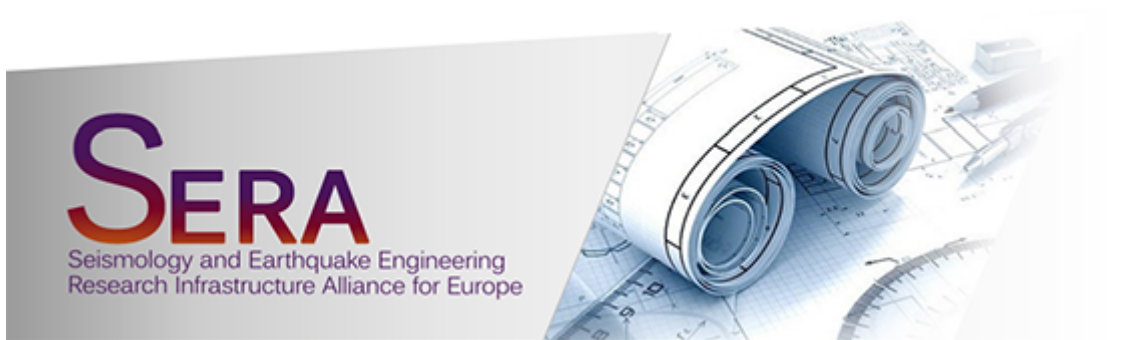
Alberto Pavese from Eucentre

"There is no fully organized European structure for ensuring that deep seismic sounding data is preserved for future use. Thus, our objective is to investigate

an appropriate model for integrating *DSS data into the EPOS framework.*"
Monika Ivandic on behalf of WP5



Highlights



First fact sheet series published

In our fact sheet series, we address key questions SERA is challenged with and present preliminary results.

The following questions are covered in the first issue:

Why is it important to know the seismic hazard? Realistic seismic hazard assessment is essential to base seismic building codes on. It requires good knowledge of historical and recent seismicity and the neotectonic regime, namely the seismically active or seismogenic faults. [Read more](#)

What is seismic risk? In the most recent national risk assessments prepared by the countries participating in the Union Civil Protection Mechanism, earthquakes are the fourth most common hazard assessed after flooding, extreme weather and forest fires. Disaster risk comprises three elements: hazard, exposure and vulnerability. Hazard is the dangerous phenomena, being

the source of potential harm. Exposure refers to people, property, systems or other elements present in hazard-prone areas. Vulnerability represents the susceptibility of an element at risk of being adversely affected by natural phenomena. [Read more](#)

What happens to buildings in case of an earthquake? The same seismic excitation affects buildings differently; for example, tall buildings tend to amplify the motions of longer period earthquake excitation components. Although concrete and masonry buildings are stiffer than their counterparts made of steel, they cannot be considered as rigid bodies – had that been so, each point on it would move in the same amount as the ground. Concrete and masonry buildings indeed deform, displace and rotate due to their flexibility. Their behavior depends mainly on the fundamental period of vibration (function of the stiffness of the structural system, its mass, and its total height). [Read more](#)

How does the testing of a building on a shake table work? In order to study the effects of earthquake actions on a structure, performing shake table tests is the most realistic research approach. This article describes how the testing of a building structure on a shake table is performed and which are the outcomes and benefits of this type of experimental test. A shake table system is composed of several components, comprising mainly the hydraulic pumping system, servo-valve controlled actuators, the shake table platform, and the digital control system. [Read more](#)

The fact sheet is available [online](#) on our website or as a [PDF](#).



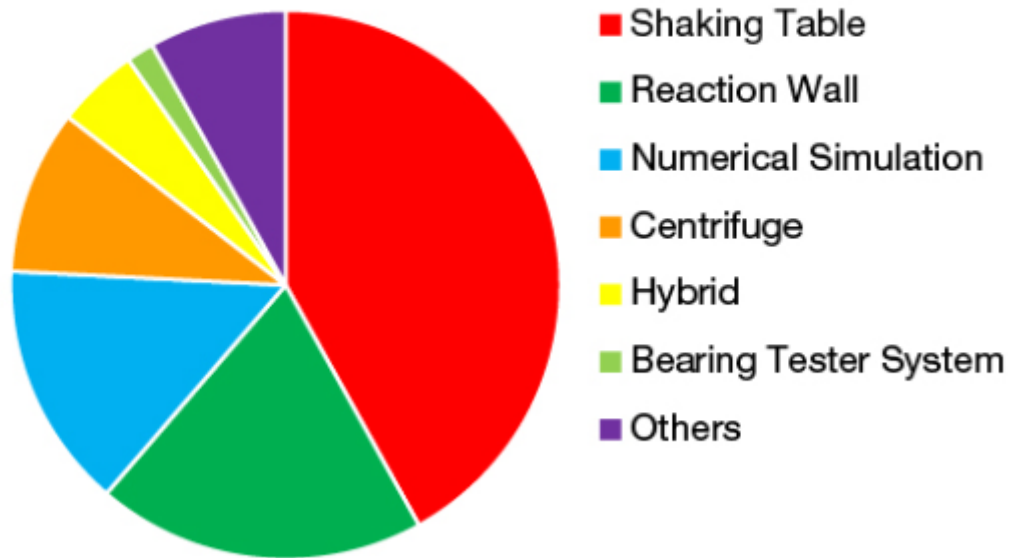
SERA TA provided access for 33 projects

The Transnational Access activities (TA1-10) offer a combined and integrated access to the largest collection of high-class experimental facilities for earthquake engineering in Europe – and worldwide – including reaction walls, shake tables, bearing testing facilities and centrifuges, to two facilities for integrated studies on geotechnical site effects and engineering seismology, and to a unique infrastructure in Europe for array seismology.

So far, two SERA TA calls have been evaluated and a total of 33 research projects have been selected, with a third call being in the selection process at the moment. Of those 33 projects, over 50 % are using shaking tables and reaction walls in their tests. Reinforced concrete, steel and masonry are among the most analysed types of specimen. The largest user group comes from Italy, followed by Portugal and Greece.

Find more detailed information about each of the 33 projects on the [SERA TA website](#).

TESTING TECHNIQUE - 1ST AND 2ND CALL



A glimpse into...

Teachers' workshop in Portugal



In the framework of SERA, the Instituto Dom Luiz (Portugal) organized in collaboration with the Instituto Superior Técnico (Portugal) and the external partners of the WP1 "Seismology@School" an event that took place from 9 to 11 July 2018. It focused on demonstrating how seismology and seismic engineering can provide tools and examples for educational activities.

The event brings together Portuguese and Brazilian teachers from STEM fields (science, technology, engineering and math). Six SERA workshops were organized as part of the annual meeting at Casa das Ciências in Guimarães. Most of the teachers attending came from a high school with students between 14 and 18 years old. This year was very successful as over 900 teachers attended the 3-day event.

The main goal of this conference is to allow teachers to gain new ideas, concepts, projects, and activities to enrich their lectures. The keynote presentations and workshops are for the most part provided by professional researchers.



Updated Data Regulations According to GDPR

We hope you are enjoying receiving and reading the SERA newsletter! To comply with the updated data regulations in the EU (GDPR), we need to remind you that we are using MailChimp to compile our newsletter. With your subscription, you agreed to the [privacy_policy](#) and [terms](#) of MailChimp. No worries if you have changed your mind in the meantime, you can easily unsubscribe by clicking on the respective link at the end of this newsletter or by sending an email to sera_office@erdw.ethz.ch. No further action is needed if you would like to continue to be informed about SERA activities, results, and highlights. To comply with the GDPR in the future, we have activated a double-opt-in process. Interested readers receive after their initial sign-up a message asking again for their permission and their acknowledgement of the privacy policies of MailChimp

Outlook and events

AGU Fall Meeting 2018

10 - 14 December 2018

Washington DC, USA

[Find out more](#)

EGU General Assembly 2019

7 - 12 April 2019

Vienna, Austria

[Find out more](#)

GeoTHERM - expo & congress

14 - 15 February 2019

Offenburg, Germany

[Find out more](#)

Second Annual Science Meeting

Week of May 13th, 2019

Location to be announced soon

Energy geostructures: analysis and design

6 - 8 March 2019

Lausanne, Switzerland

[Find out more](#)

The next external newsheet will be released in May 2019.

We welcome always feedback and suggestions - send them to the SERA communication team (janine.aeberhard@sed.ethz.ch or michele.marti@sed.ethz.ch).

Liability claim

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