

# Deliverable 1.9

## D1.9 Minutes of Meeting of the RISE management board conducted

Deliverable information	
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## Summary

This document is the fourth deliverable (D1.9), which summarizes the Management Board Meetings' Minutes. It contains the collection of two Management Board (MB) Meetings during the six-months period between March 2022 and August 2022. The minutes of the Annual RISE Meeting which was held in May in Florence, Italy is added to the annex of this report. This deliverable has been prepared by WP1 and reviewed by the MB.

The following MB Meetings have been held during the abovementioned period:

- 15<sup>th</sup> MB Meeting on 18/03/2022
- 16<sup>th</sup> MB Meeting on 24/06/2022

The MB is in charge of the operational management (decision process, risk assessment, information flows) of the RISE implementation and of ensuring the cohesion of the whole RISE community. The members of the Management Board are as follows:

- Stefan Wiemer, ETH Zurich (RISE Coordinator)
- Banu Mena Cabrera, ETH Zurich (RISE Manager & WP1 Leader)
- Ian Main, UEDIN (WP2 Leader)
- Warner Marzocchi, UNINA (WP3 Leader)
- Iunio Iervolino, UNINA (WP4 Leader)
- Remy Bossu, EMSC (WP5 Leader)
- Helen Crowley, EUCENTRE (WP6 Leader)
- Danijel Schorlemmer, GFZ (WP7 Leader)
- Michele Marti, ETH (WP8 Leader)
- ❖ Florian Haslinger, ETH (EPOS Representative, present in some of the MB meetings)
- ❖ Alexander Freeman, UCAM (Co-leading WP5 in EU review meeting)

This deliverable is structured in two sections; each section is dedicated to one MB meeting.

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## **1. MB Meeting 18.03.2022 - Meeting Minutes**

### **1.1 Agenda**







1. Status of deliverables and milestones
2. Update on modified deliverables
3. RISE Annual Meeting 11-13 May
4. RISE Extension Request (possible 3 months) & plan for pending RISE meetings
5. Next MB Meeting

## 1.2 Meeting Minutes

### 1.2.1 Status of deliverables and milestones:

Below is the list of deliverables that had been submitted in February 2022. We had no delays in the submission of February deliverables.

52) D5.10 Improving earthquake information in a multi-hazard context	This report summarises recommendation for improving earthquake information in a multi-hazard context.		Mon 28 Feb 2022	 Michèle Marti  Irina Dallo
31) D3.1 New perspectives in OEF models through the analysis of candidate precursors	In this report we will investigate how selected seismic and non-seismic signals are correlated with earthquakes and may be used as seismic precursors.		Mon 28 Feb 2022	 Christophe VOISIN
61) D7.3 How to define the best OEF model to be used for societal purposes: ensemble modelling	Description and comparison of different ensemble modeling strategies and evaluation of their capability to improve earthquake forecasting.		Mon 28 Feb 2022	 Warner Marzocchi
26) D2.10 Report on the temporal change the upper crust properties using ambient noise techniques	In this report we will summarize the temporal change of the upper crust properties that are observed in the Aquila region and surrounding area by analysing seismic noise records.		Mon 28 Feb 2022	 Laurent STEHLY
69) D8.3 Update PEDR (month 24)	Final Document, report (excluding the periodic and final reports). last update to: dissemination plan, dissemination activity timing, dissemination management, dissemination tools and exploitation plan		Mon 28 Feb 2022	 Michèle Marti
63) D7.5 Report on the test metrics of non-linear ground-motion models and high-resolution exposure/risk models	This report describes the test metrics of non-linear ground-motion models and high-resolution exposure/risk models		Mon 28 Feb 2022	 Danijel Schorlemmer
39) D4.4 Development of RRE forecasting services in OpenQuake	This deliverable describes the recovery forecasting services in OpenQuake. This encompasses the recovery function meta-data and operators as well as a set of prototype recovery functions implemented to enable the development of a RRE (Recovery and Rebuilding Effort) forecasting model. The deliverable further described the developed RRE forecasting model and details its validation using available post-earthquake recovery data		Mon 28 Feb 2022	 Bozidar Stojadinovic

03) D1.3 Project management plan updated	Third update to the detailed project management plan (PMP) compiled and distributed to all beneficiaries. The PMP documents the actions necessary to define, prepare, integrate and coordinate the various planning activities. The PMP defines how the project is executed, monitored and controlled, and closed.		Mon 28 Feb 2022	 Banu Mena Cabrera
33) D3.3 A new generation of OEF models	Description of the scientific aspects behind the new generation of operational earthquake forecasting models, with some discussion on their evolution with respect to the present state of the art.		Mon 28 Feb 2022	 Warner Marzocchi
59) D7.1 Distribute new CSEP2.0 software code	The software development for CSEP2.0 will be coordinated between GFZ and USC and further contributing institutions. RISE will provide a repository of CSEP2.0 software codes for free use (open source).		Mon 28 Feb 2022	 Danijel Schorlemmer
08) D1.8 Minutes of Meeting of the RISE management board conducted	Minutes will include: Names of participants. Agenda items covered. Meeting minutes will give an accurate record exists of what transpired during the meeting		Mon 28 Feb 2022	 Banu Mena Cabrera
62) D7.4 Testing center software codes for high-density testing of non-linear ground-motion models and high-resolution exposure/risk models	CSEP will expanded within RISE to cover testing of ground-motion models against observation data from high- density sensor networks. In particular, the non-linear aspect requires codes handling observations at the building level, leading to testing exposure and risk models on this very building level. The codes will be disseminated (see D7.1 and D7.7)		Mon 28 Feb 2022	 Danijel Schorlemmer
60) D7.2 Report on first results of key hypothesis testing	RISE will conduct hypothesis testing in targeted experiments within the CSEP framework. The results will be presented at conferences and published.		Mon 28 Feb 2022	 Max Werner

Below is the list of milestones that were due in February 2022. All milestones but MS14 and MS58 have been achieved in time.

#### Delayed Milestones:

Status of MS14: Completing field tests on selected instrumented structures, using three excitation sources, collecting vibration records

Update on the milestone by BOUN:

1. Field tests on Polat Tower has been completed with the existing permanent sensors and we are currently analysing records.
2. The management of the Sapphire Building has changed. So far, we are not able to get permission from the new management to do the tests, because it involves drilling the floor slabs and/or shear walls at the top to install the test equipment. We are still trying to get the permission through the building's owners. If we cannot get it, we will do the tests by shaking the building with the eccentric mass shaker installed on the ground outside of the building.
3. We were not able to add QuakeSaver MEMs sensors because of their incompatibility with the existing low noise FBA sensors in the two instrumented buildings.
4. The tests with the eccentric mass shaker will concentrate on Soil-Structure Interaction (SSI) tests, and we have just received the additional pieces from the manufacturer to do SSI tests (as explained in D2.6).
5. Covid-related restrictions and limitations during the last 24 months have also caused significant delays in the planned schedule.

6. We would like to change the milestone deadline to month 36 instead of 24 and submit the full documentation by then.

Status of MS58: First new EPOS service operational

“RISE tools to be operational as EPOS services” will be discussed in the upcoming RISE Annual Meeting in May 2022. The tools are continuously being developed and in progress in various WPs, however they need to be mature, well tested and validated before they become operational services. Therefore, any RISE tool to become an EPOS operational service will be likely not possible before the end of RISE project.

MS11: Software for the back- end data centre system, further experiments	System operational, validated by WP leader		Mon 28 Feb 2022
MS14: Completing field tests on selected instrumented structures, using three excitation sources, collecting vibration records	Test on buildings conducted and documented		Mon 28 Feb 2022
MS16: Database with the earthquake catalogue for internal dissemination	Database validated and online, check by WP leader		Mon 28 Feb 2022
MS25: Prototype of OEF model "experts'-based"	Prototype operational and check by WP L		Mon 28 Feb 2022
MS26: OEF codes for testing in WP6 & 7	Codes transferred to WP6/7, check by WP L		Mon 28 Feb 2022
MS27: RLA service for Europe transferred to WP6	Service operational in WP6		Mon 28 Feb 2022
MS28: OELF service for Europe transferred to WP6	Service operational in WP6		Mon 28 Feb 2022
MS29: Risk-cost benefit framework applied to test site Switzerland	Report check by ExeCom		Mon 28 Feb 2022
MS35: Prototype service for seeded crowdsourced locations	Prototype running, check by ExeCom		Mon 28 Feb 2022

**1.2.2 Update on modified deliverables**

As a result of the mid-term review, the reviewers requested to modify some of the RISE deliverable. The deliverables that required revision are listed below, with the already updated ones marked.

D1.13: Strategic integration of RISE activities with EPOS-IP -> now updated!

D1.16: Data Management Plan -> now updated!

D2.1: Large-scale DAS logistic feasibility study on new applications -> now updated!  
D2.2: Deployment of prototype array -> now updated!  
D2.4: Field ready internal next generation sensors -> now updated!  
D2.6: Specifications on portable excitation sources and structure selection-> now updated!  
D2.8: Progress of new generation catalogues for public dissemination -> now updated!  
D6.6: Framework for the assessment of economic losses in a dynamic risk context  
D8.2: Update PEDR

The status of D1.13, D6.6 and D8.2:

D6.6: The requested changes will be reflected in an upcoming deliverable of the same task, D6.4, which is scheduled for February 2023. This is accepted by the PO.

D8.2: The requested information is delivered in the follow-up deliverable D8.3 in February 2023. This is accepted by the PO.

D1.13: This deliverable is updated but some of the modifications and additions that were requested will be reflected in a follow up deliverable D8.5. The main reason is explained below:

The RISE services to be integrated into EPOS are advancing, but not ready yet to be implemented in EPOS. The real EPOS integration will start in the final year of the project, as we will have more and more work packages at their final stages ready for implementation. Therefore, business model, service providers and governance and sustainability cannot be included in this report in detail.

### **1.2.3 RISE Annual Meeting 11-13 May**

The potential venues were all booked for these days, within minutes after the release of Covid restrictions. There are two options; Option 1: to change the meeting dates, which is tricky as all RISE participants have these days reserved way in advance in their calendars. Alternatively, we will look for the option 2, which is having the meetings in different venues for each day. RISE participants from UNIBO are looking at different venue options for each day.

> MB prefers to keep the dates as planned. In the next two weeks, we need to fix the meeting venue/venues.

### **1.2.4 RISE Extension Request**

MB discussed the advantages of 3 months' extension to RISE, which will push the final meeting date to May 2023. A few Iceland deliverables that were delayed will take advantage of this delay. A letter explaining the reasons and implications will be sent to the PO. If we know whether this is possible before the RISE annual meeting, we can plan the final year of RISE accordingly.

### **1.2.5 Next MB Meeting**

Next MB meeting will be after the RISE Annual Meeting.



## **2. MB Meeting 24.06.2022 - Meeting Minutes**

### **2.1 Agenda**

1. Feedback for the Annual Meeting & moving forward
2. Status of deliverables and milestones
3. WP Progress
4. Plan for the pending workshops
5. Next MB Meeting





## 2.2 Meeting Minutes

### 2.2.1 Feedback for the Annual Meeting and moving forward

The MB went through the meeting minutes of the annual meeting. The minutes of the RISE Annual Meeting is added to the annex of this report.




### 2.2.2 Status of Deliverables and milestones

List of Deliverables due August 2022:

46) D5.4 Field evaluation of the risk communication strategy	By combining the work in understanding the current risk communication strategy within Italy, Switzerland and France with the user-centred design work, RISE plans to develop the best, practical system of risk communication that can		Thu 30 Jun 2022	 Alexandra Freeman
72) D8.6 Harmonised platform for OEF forecasts and ensemble models	A harmonised platform for OEF forecasts and ensemble models in Europe has been created and is available to operate the European test center.		Wed 31 Aug 2022	 Philipp Kästli
37) D4.2 Second generation of models for RLA service report for Europe	This deliverable is a technical report that accompanies the demonstrator deliverable D4.1. It will explain the modelling techniques and assumptions that have been used to		Wed 31 Aug 2022	 Helen Crowley
32) D3.2 Exploring the limits of earthquake predictability	We will report the retrospective analysis, by computational statistical methods, of spatial and temporal variations of various physical (e.g. surface heat flow, geodetic strain-rate) and seismological parameters (e.g. b-value of the		Wed 31 Aug 2022	 Paolo Gasperini
40) D4.5 The use of structural health monitoring for rapid loss assessment	This report will describe the use of structural health monitoring for rapid loss assessment		Wed 31 Aug 2022	 Eleni Chatzi
09) D1.9 Minutes of Meeting of the RISE management board conducted	Minutes will include: Names of participants. Agenda items covered. Meeting minutes will give an accurate record exists of what transpired during the meeting		Wed 31 Aug 2022	 Banu Mena Cabrera
36) D4.1 Second generation of models for RLA service demonstration for Europe	This deliverable is a demonstrator deliverable, and will mainly constitute a set of pan-European exposure and vulnerability models for the calculation of Rapid Loss Assessment (RLA). A first set of European exposure and vulnerability		Wed 31 Aug 2022	 Helen Crowley
71) D8.5 Report on the sustainable operation of dynamic risk services within EPOS	A white-paper on the sustainable operation of dynamic risk services within EPOS is created and distributed to the community.		Wed 31 Aug 2022	 Michèle Marti
23) D2.7 Results of excitation sources and recommendations	We will test the excitation sources on ground surface (for site amplification studies) and several structures (a tall building, a bridge, and a historical structure), record their vibrations, and identify their dynamic characteristics. These structural characteristics will provide an important metric employed in the developing the dynamic risk landscape. We will compare		Wed 31 Aug 2022	 Erdal Safak

Milestones are on track.

## List of Milestones due August 2022

MS38: Second round of CSEP test of Italy running		Test running, check ExeCom		Thu 30 Jun 2022		Normal	Not Started	0	Lead Beneficiary: GFZ, Linked to WP3 & WP6 Old deadline: 31/12/2021
MS20: Automated proxy- based building classification for all buildings in Europe		Software running and checked by WP leader		Wed 31 Aug 2022		Normal	Not Started	0	Lead Beneficiary: UNINA, Linked to WP2 & WP4 Old deadline: 28/2/2022
MS43: Dynamic risk services for Switzerland operational		Service online, Check ExeCom & SAB		Wed 31 Aug 2022		Normal	Not Started	0	Lead Beneficiary: ETH, Linked to WP6 & WP8 Old deadline: 28/2/2022
72) D8.6 Harmonised platform for OEF forecasts and ensemble models	A harmonised platform for OEF forecasts and ensemble models in Europe has been created and is available to operate the European test center.		Wed 31 Aug 2022	 Philipp Kästli	Normal	Not Started	0	Demonstrator [M30] Old deadline: 28/2/2022	
73) D8.7 EU forecast testing centre operational	The European forecast testing centre is operation at GFZ, reviewed and validated as an EPOS service. Forecasts for at least three testing regions, linked to OEF models, are automatically created and evaluated. Results are available via a web interface to selected users.		Tue 28 Feb 2023	 Philipp Kästli	Normal	Not Started	0	Demonstrator [M36] Old deadline: 31/8/2022	
74) D8.8 EU RLA service operational	The European Rapid Loss Assessment service is operational and distributing message to selected and approved subscribers. The service is reviewed and validated in partnership with EPOS.		Tue 28 Feb 2023	 Philipp Kästli	Normal	Not Started	0	Demonstrator [M36] Old deadline: 31/8/2022	

D8.6 is delayed.

D8.4 is delayed, it will be finalized in the next few months.

The rest is on track and expected to be submitted in time.

### ***Change of responsibility in some of the WP8 deliverables:***

D8.6: ETH is working on OEF for Switzerland and at European scale. We aim to display results with the harmonized ETAS model and transfer this to hazard and risk at European and national scales. This deliverable will be delayed.

D8.8 there will be change of responsibilities for this deliverable. This deliverable will be led by Helen Crowley (EUCENTRE) as the European RLA is mainly done in WP4 & WP6 led by Helen. We will have a demonstrator of RLA at European scale linking with European Shakemap and exposure and vulnerability coming from previous deliverables. There is already a GitLab repository. A brief report is needed to accompany the software. This is part of WP4 & WP6. Stefan Wiemer, Helen Crowley and Florian Hasslinger will write on sustainability in Europe.

D8.7: EU forecast testing centre operational. Danijel Schorlemmer (GFZ) will lead this deliverable. Currently setting up the time dependent Italy experiment, which can be called European testing centre. The philosophy is different than the old CSEP testing centres.

### **2.2.3 WP Progress**

WP2: A workshop was held on how to integrate the continuous waveform modelling of coda-wave velocity transients with forecasting and testing efforts in WPs 3 and 7. The original hope had been to see precursors, but these are unfortunately not observable in the data. However, there are obvious anomalies spatially and temporally, correlated with sequences. Hence, we will focus on how we can use the maps in forecasting during sequences instead, using the *inlabru* platform in the first instance. Forecasting will allow us to determine the extent to which transients add information to forecasts during sequences. It may add something. The failures should be documented as well. The observations underpinning the workshop and these decisions are already written in deliverable 2.10.

WP3: Warner Marzocchi and Markus Herrmann (UNINA) will arrange a meeting with Shyam Nandan and Leila Mizrahi (ETH) to talk about the OEF model developments in Switzerland.

ECS meeting (26-28 October): Markus Herrmann will send out the "Save the Date" email soon. Markus is contacting some keynote speakers. The meeting should involve not only modeling and testing scientists but a wider participation from other RISE tasks as well.

WP4: Deliverables for August are in progress, as well as some publications from WP4 are under preparation. WP4 meeting will be held, as needed, after summer. More updates will follow in the next MB meeting.

WP5: Two deliverables are being prepared in WP5. CSLOC service is fully operational in 2 weeks' time. It is the very rapid earthquake location and magnitude determination on global scale, will be fully integrated. Finalizing a paper on detectability of the dynamic system. Just had a paper on detection on landslides by harvesting pictures on twitter.

WP6:

Cecilia Nieves (GFZ) is working on determination of the scenarios for the demonstration of the dynamic exposure and vulnerability and SHM/RLA/OELF. Workshop on scenarios will help this task, to define sequence of events (probably in central Italy). Kristin was interacting with Carlo on some features of Shakemap 4. IMO has version 4 installed. Helen will keep communication with Kristin. OEF and OELF at EU scale, we will have a follow up meeting organized by Stefan. A student started recently working on this.

WP7:

Preparation for the time dependent Italy testing experiment are on the way. First models are installed. Test analysis and quadtree papers are under revision. For the tailored experiments, new collaboration is starting, looking into the suitability of b values for long term forecasts, to see whether they can be used in hazard. Danijel Schorlemmer (GFZ) will communicate with UNIVBRIS and UNINA on ensemble models and will discuss the progress on their side.

WP8: Internal newsletter is put together ready for revision.

## **2.2.4 Plan for the pending workshops**

Planned RISE Meetings:

- Early Career Scientists (ECS) Meeting (as part of Milestone 62)
- Workshop for "guidelines for experts' judgments in OEF" (as part of Deliverable 3.5)
- Online workshop/meeting on "Scenario Planning for demonstrating RISE Tools/Products"
- Online workshop/meeting on RISE Services
- Stakeholder Panel Meeting will be planned in November (coupled with the Swiss risk model) and in the final meeting.
- ZOOMing into RISE meetings will be back in September, bi monthly (i.e. twice a month) Thursdays at 10AM and will be held until February. It will cover: integration, services, communication strategy, operational strategy, scenario planning workshop. Banu Mena and Stefan Wiemer will plan the upcoming ZOOMing into RISE.

## **2.2.5 Next MB Meeting**

2 September @ 10 AM (CEST)

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## ANNEX: RISE Annual Meeting (11-13 May, Florence, Italy) - Meeting Minutes

### Perspectives from the members of the SAB

#### Tom Jordan (USC):

- Seismologists engineers, communication experts work together in RISE. Good interaction between WPs and solid research has been presented during the meeting.
- WP3 group interacting very well with WP7 forecasting and validating team, CSEP2.0 can handle simulation based models. Overall RISE is doing very well in the domain of forecast modelling and testing.
- WP3 & 4 interaction on OEF-OELF is going very well. Transition from OEF and OELF is important part of RISE.
- Project management is doing very well, there is solid Project Management Plan (PMP), which is well documented. The various online tools used in project management are effective.
- Early Career Scientists (ECS) are efficiently interacting within and with seniors and wider community. They are well integrated into RISE community.
- Last year of the project ahead should be a transition from research phase to delivery phase. How can products be situated so that they are not lost? Archiving the products and sharing data and software is critical and must be ensured in the last phase of the project.
- Models should be available for larger community. Interaction and Interoperability is important such as with platforms similar to Open Quake. WP6 Demonstration should work on how this integration can happen?
- Operational services: Will things be mature enough for making them operational? Efforts in the final year of the project should be towards the maturity of the RISE products and these being operational.

#### Ramon Zuniga (UNAM):

The project goes further than at European level. Results can be and will be useful for a wider community.

#### Egill Hauksson (Caltech):

- Earthquake catalogs for OEF are critical. How are catalogs being created? OEF modellers should have information on the generation of the new catalogs such as how they are created, the background information of the chosen parameters while creating the catalogs...
- How do we get to the civil protection community? Civil Protection has their own training programs. Accessing these trainings can be important and RISE scientists might give some presentations/lectures as part of these trainings. In that way RISE can contribute to a long term understanding of what the seismological community can provide.
- Focusing on scenario exercises in the final year of the project is important: from OEF to how much a disaster costs, estimating the impact of earthquakes is important for disaster managers and end users. Such a scenario exercise can potentially demonstrate what RISE has achieved in various domains.
- Emphasis on buildings and structures is important. What happens to people after building is damaged? How can we provide emergency managers advise on how to handle the need of communities after an event? These will be important results from RISE.

## General Overview for the project's final year:

Consensus has been reached for the following issues:

- Final Meeting: We will include an outreach session, with users' and broader community in the final meeting. 2 days meeting, PM will send doodle for the dates.
- RISE Follow up: EU does not work with continuation calls. No immediate follow up is foreseen, we will keep looking for calls.
- We should focus on delivering what we promised to do in the Grant Agreement and what we will be measured on. All RISE scientists should plan their next 12 months, such that you accomplish the promised work. We need to ensure quality and will keep having an internal review process.
- We will plan meetings that focus on services and operation.
- 100 Publications were promised. Everyone should add on to Zenodo all RISE publications.

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## What should RISE Researchers focus in the final project year

Below is a summary of the topics discussed:

### WP2 & WP3:

Noise interferometry: Grenoble is leading it. How do we get operational for Switzerland and for Iceland? Time series of correlation changes are useful. 2 weeks ago there was a zoom workshop. There is also a recently submitted deliverable (D2.10) which is about the temporal evolution of the upper crust in Italy and Greece.

### BIU (RISE Partner in Israel)

Israel is not a test bed in WP6, however we need a plan to see the developments in Israel for OEF or EEW? What is operating in Israel and how do they benefit from RISE? Warner Marzocchi will continue being in contact with BIU to discuss the developments on their side.

### QUAKESAVER

There were challenges with the chip crisis. Marius Isken mentioned that the chip crisis started relaxing. Open source software for sensors is available which will help EEW. In the next 2-3 months QUAKE should distribute the sensors, based on availability. Communication with OPENQUAKE is needed. RISE aims to show how sensors and processing are being improved during the project. Software will be in compliance with open source.

For discussing the observational capabilities, the core scientists from INGV and ETH will meet and discuss (how to access earthquake information such as relative relocations, detections and how we display them). Lauro Chiaraluce (INGV) and Stefan Wiemer (ETH) will lead the communication.

### WP2-4-6: Dynamic Exposure & Dynamic Vulnerability

EU wide dynamic exposure model will be tested and we will run scenarios. We have to determine where it is beneficial to have the dynamic exposure, what are the limitations etc.

Dynamic vulnerability: Framework is nearly ready, currently implementation is being tested for Italy.

-How close are we to implement it?

We are nearly ready to implement in PAGER and UCS.

-How do we use dynamic vulnerability in OELF?

We made good progress, applied to Italy. As the Method is generically described it could be potentially extended to Switzerland, US or Europe wide. But within RISE it will be limited to Italy. Next generation PAGER might use this.

## **RRE**

How long does recovery take? How ready is RRE function?

This will likely not be a mature service, but a test case for Switzerland and/or Italy is feasible. We did not promise to make RRE a service, but it can be a useful product.

How can this be made a useful product and how can we show that this could be a useful addition to the overall RISE portfolio of results?

Some thoughts:

- We can calculate some scenarios and RRE function can be calculated as a result of these scenarios?
- OELF with damage accumulation can take the recovery model in medium to long term. This was not planned but with extra effort, it can be done.

## **Time dependent earthquake hazard and risk assessment**

For the time dependent earthquake hazard and risk assessment we are nearly ready, we have all pieces that need to be assembled. We aim to make some products available in a standard way. ECS should take up the leadership and next 12 months they should come up with the best models calibrated to Switzerland, Italy, Iceland and Europe. ECS will have the models tested and should hand them over to do hazard and risk.

## **Communication**

INGV will prove OEF for Italy. Legal issues exist with the risk of personal criminal accusations. Legal framework is not clear. For the European scale OEF, it is a back-up service. Next 6 months we should have the dialog with INGV.

**Foreshock TLS:** alarm based testing, webpage is built, can make this available globally

## **PyCSEP**

PyCSEP is doing quality testing. This will be one of the RISE highlights. It is a software platform that can be used in the future. ECS can make more use of this product. A work flow should be set up to show how pyCSEP is useful. In the next 12 months, we will see that PyCSEP is ready for testing models. There should be a paper and some illustration cases available.

## **CBA**

There will be a framework ready for use, but will not be a plug and play.

Warner is in favour of CBA, but mentioned the importance of CBA framework to be tailored to end user's needs.

## **WP4 & 6**

EU shakemaps and RLA workflows are ready, they will be among RISE highlights. How far we can go into being operational and harmonize these?

## **Citizen Science**

Citizen Science tools are available. How can SED or other institutes benefit from EMSC tools? Felt reports are shared in real time with ETH. Any national institute can judge by comparing with their own shakemaps. Can these tools be linked to our event pages? The more we achieve to mesh up of the services and the information the better.

## **OEF in Iceland**

ECS will go to Iceland talk to IMO, and then run the tool developed for other areas and calibrate for Iceland. Real time is down the road but a scenario capability is feasible.

## **How do we link the EEW, OEF, OELF, RLA, RRE... EQ information platform? How much we want to share?**

There is consensus on using scenarios. Use 1, 2 or 3 scenarios for impact assessment of a case study. We will illustrate the RISE progress on scenarios. We need to define the scenarios. Task 6.1 is working on scenarios, on a fictitious site.

Below are some general discussions from the audience:

Cecilia Nievas (GFZ) who is leading 6.1 asked whether we should focus on reproduction of past earthquake or totally fictitious scenarios?

Some suggestions from the audience:

- Scenarios of recent earthquakes can be used for validation
- Scenarios of past historical earthquake: this can help to increase awareness of what had happened in the past.
- We can use EU seismic risk model to disaggregate some scenario models
- We need to know the validation level of the tools that are being developed in RISE
- We need to set up a scenario planning group rapidly and organize a meeting.

### **Liability Claim**

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