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ISTOS

1ST SHORT TERM SCIENTIFIC MISSION STSM-1

The first part of the 1st Short Term Scientific Mission (STSM-1) was held on February 23-25, 2022, at Aristotle University of Thessaloniki (AUTH). One PhD student from Frederick Research Center (FRC) and one ESR from Cyprus University of Technology (CUT) have visited the premises of AUTH in order to get provided with intensive high-quality training in the field of vulnerability risk assessment and impact assessment of natural hazards. The AUTH personnel has demonstrated the lab facilities of AUTH. Furthermore, they proceeded to presentations of their work along with advising to serve the participants' requirements. The 2nd part of STSM-1 was held on March 25-29, 2022, at the University of Naples Federico II (UNINA) – LUPT-PLINIVS Study Centre, Italy. Two PhD students from FRC and one ESR from CUT visited the premises of UNINA to present their research topics and panel discussion on PhD and research topics, along with one-to-one meetings held with experts from PLINIVS Study Centre.

AUTH RESEARCH UNIT OF SOIL DYNAMICS AND GEOTECHNICAL EARTHQUAKE ENGINEERING - LAB FACILITIES

The AUTH team guided the participants to the Research Unit of Soil Dynamics and Geotechnical Earthquake (SDGEE) laboratory of the Department of School of Civil Engineering facilities at AUTH (<https://sdgee.civil.auth.gr>).

The participants were introduced to the **Geotechnical Seismic Engineering and Soil Mechanics** and the **Soil Engineering, Foundations, and Geotechnical Seismic Engineering** laboratories by Dr. Maria Manakou and Mr. Anastasios Kapouniaris, along with instructions on the applications of the equipment. Furthermore, case studies that were executed using the equipment of the AUTH Research Unit of Soil Dynamics and Geotechnical Earthquake laboratory of the Department of Civil Engineering were presented.



Shaking table (ANCO R-201)



Testing of soil samples equipment



Triaxial device – SoilTest 25Tons

The Research Unit of SDGEE of the School of Civil Engineering of Aristotle University in Thessaloniki has a long and worldwide-recognized expertise and experience in all kinds of laboratory testing under static and dynamic conditions. SDGEE know-how in many topics of earthquake engineering soil dynamics, engineering seismology, micro zonation studies, site effects, vulnerability, and risk assessment of the built environment, infrastructures, lifelines, and cultural heritage. It is equipped with state-of-the-art laboratory apparatuses to perform both the routine determination of physical, mechanical, and dynamic soil properties, as well as high-quality research in soils, soil mixtures with recycled material, and rock.

They can provide soil classification and evaluation of physical properties, testing of soil samples of different dimensions under various strain/stress conditions for all kind of geotechnical projects, evaluation of dynamic soil properties at a wide range of strains, evaluation of liquefaction potential, and small-scale shaking table testing. The Research Unit of SDGEE has recently installed and operates a small (max 100kg) shaking table for earthquake engineering, vibration, system dynamics, control systems, and data acquisition and processing studies.

ADVISING AND TRAINING IN THE FIELD OF VULNERABILITY RISK ASSESSMENT FOR NATURAL HAZARDS

The research team of AUTH gave a series of presentations to provide the participants with intensive high-quality training and advising in the field of vulnerability risk assessment and impact assessment of natural hazards at the premises of the co-advising partner.

Dr. Christos Petridis presented his research about the “Large-scale seismic risk assessment integrating nonlinear soil behavior and soil-structure interaction (SSI) effects” and gave guidelines and advice regarding the fragility and vulnerability curves of structures including non-linear site response and SSI on a city scale. Moreover, examples were given in the calculation of the uncertainty of analyses, damage stages, capacity demand, fragility curves, damage probabilities, and vulnerability curves. Ms. Chiara Amedola provided a presentation on “How to include soil effects and SSI in urban scale in fragility curves function” and Mrs. Ashta Poudel gave a presentation about “Structures and interlinkage of the physical system”.

During the 1st part of STSM-1 Professor Kyriazis Pitilakis, Associate Professor Dimitris Pitilakis, and Dr. Evi Riga provided discussion and guidance to the participants.



ENHANCING THE RESEARCH PROFILE OF ESRs - RESEARCH TOPICS AND HORIZON'S PROPOSAL TASK

Participants from FRC and CUT presented their completed and in-progress work to the experts from PLINIVS Study Centre. A panel discussion followed on PhD and research topics. Each participant had a personal meeting with experts from PLINIVS Study Centre on potential synergies for the follow-up of PhD projects and eventual future research based on their background knowledge and research experience. Professor Giulio Zuccaro, Associate Professor Mattia Leone, Dr. Andrea Montanino, and Ms. Francesca Linda Perelli discussed with the participants and guided them on their research topics.

Further, a collaborative exercise on forming the project Consortium and on drafting the concept and the WP structure for the successful proposal writing was accomplished among the participants and Ms. Marion Pemey and Mr. Casimiro Martucci (PhD students at UNINA). Eventually, the participants provided a final presentation on the Horizon Europe proposal draft, and a panel discussion on the proposed draft was provided by the experts from PLINIVS Study Centre.



The participants presented their work to the experts from PLINIVS Study Center

During the 2nd part of STSM-1, the participants had access to PLINIVS Study Centre facilities, and Professor Giulio Zuccaro and Associate Professor Mattia Leone contributed and gave support and guidance to the participants.

EXPERTS VISIT 2

The second Expert Visit (EV-2) took place on March 22, 2022, in Naples. Five staff of FRC and two staff of CUT have visited the premises of UNINA – LUPT-PLINIVS Study Centre for EV-2 where the Best Practices for the successful operation of a Research Centre were addressed. EV-2 was an administrative management session, where the policy aspects and processes in relation to research administration, the digitized systems used for automation and effective implementation of research administration processes, and the organizational structures adopted for effective management and communication with the research groups/departments as well as the IP management and technology transfer were the topics that were discussed. Experts from UNINA and LUPT Interdepartmental Research Centre have transferred their knowledge and experience around these topics.



The participants presented their work to the experts from PLINIVS Study Center

WORKSHOP 3

The third workshop (WS-3) of the ISTOS project has been utilized for the training about research project management and administration. WS-3 took place on March 23-28, 2022, in Naples. Three Senior Researchers and two PhD students from FRC, and one Senior Researcher and one ESR from CUT have visited PLINIVS-LUPT for the WS-3: Successful Writing and Research Project Management and Administration. During the workshop, Professor Giulio Zuccaro and Associate Professor Mattia Leone presented several presentations on the Successful Proposal Writing and Research Project, along with a collaborative exercise about the forming of a Proposal. Further, the PhD candidate and ESR participants from FRC and CUT presented a proposal draft regarding the Horizon Europe calls, and a panel discussion, oral evaluation, and suggestions on the proposal draft with experts from PLINIVS Study Centre followed.



The project website is available: <http://istoscenter.eu/>

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