

Erasmus + Project No 598241-EPP-1-2018-1-RS-EPPKA2-CBHE-JP

**Strengthening Educational Capacities by Building Competences and
Cooperation in the Field of Noise and Vibration Engineering**
SEN V I B E

Report on Institutional Sustainability

Version 2

Activity 8.7

Date: 23/06/2019

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1. Introduction

This is the second version of a document that comprises the ideas, aims and activities related to the sustainability of the Erasmus+ Capacity Building in Higher Education EAC/A05/2017 project 'Strengthening Educational Capacities by Building Competences and Cooperation in the Field of Noise and Vibration Engineering' (SENVIbE).

The wider aim of this SENVIbE project is to improve and build national educational capacities, cooperation and competences in dealing with environmental and occupational Noise and Vibration (No&Vib) engineering issues in accordance with ongoing EU integration strategies and the needs identified in Serbia.

The SENVIbE project has four Specific Project Objectives (SPOs):

SPO1. To modernise existing courses in the field of No&Vib as well as to develop and implement new courses tailor-made for students of undergraduate programmes of six different engineering departments (Environmental Engineering, Occupational Safety Engineering, Mechanical Engineering, Electrical Engineering, Civil Engineering and Traffic Engineering);

SPO2. To create and implement two types of Life-Long Learning (LLL) courses for practitioners in the fields of No&Vib Engineering, Environmental Protection and Occupational Safety;

SPO3. To develop and implement a new MSc programme in Vibro-Acoustic Engineering (VAE), enabling students to strengthen their knowledge and build specific soft skills in three different sub-disciplines: i) Environmental Noise and Vibration, ii) Acoustical Engineering and iii) Vibration Engineering;

SPO4. To establish a No&Vib Hub – a central unit launching and facilitating strategic cooperation among the key stakeholders engaged in No&Vib management: academia, local industry and local and national authorities.

Besides these objectives, all the educational activities will also be accompanied with the additional aim to introduce new teaching methodologies, including the use of e-tools and b-learning approaches, aiming either at facilitating more intensive interaction between teachers and students/trainees or enabling them to fit the activities planned into their everyday activities with a possibility for distance learning or repetitive insights into learning material, including experiments, via an ICT platform that will be created. The equipment will be either modernised when it exists, or a new one will be installed if the HEI does not have it. The current teachers and university staff,

including technicians, will be trained on the new courses, methodologies and equipment.

As 'sustainability' is the capacity of the project to continue its existence and functioning beyond its end¹, all the SENVIBE partners are obliged to make plans for the sustainability of the aforementioned results, both jointly and separately, especially related to **SPO1-SPO4** and the associated results in the long term. These joint and separate aims and plans are described in the subsequent section.

¹https://www.aidlearn.pt/fls/doc/proj/diva_handbook.pdf

2. Aims and activities related to sustainability of the SENVIBE project and its results

2.1. Joint aims and activities

All the partners are aware of the fact that it is important to keep the SENVIBE results visible and available, especially through websites: the website of the SENVIBE project

<http://senvibe.uns.ac.rs/>

and also institutional websites that describe certain SENVIBE events or outcomes and/or provide a link to the SENVIBE website. This enables target audiences to access them, learn from them, adapt them to their own needs and even build on them and take them to the next level.

All the partners are also aware of the importance of the stakeholders for the sustainability of the project results during and after the funding period. The stakeholders should be clearly defined and established from the right beginning. The SENVIBE Project Management Team has initiated the creation of the list of stakeholder list during their first meeting on 22 February 2019. All the SENVIBE partners are obliged to contribute and update this list continuously during the project lifetime. The list will be used for dissemination, exploitation and sustainability of the SENVIBE project results.

During the project implementation, all partners have to communicate with stakeholders and organize local meetings with them, jointly, in groups or separately. The agenda and direction of these meeting should clearly point out key sustainability features: funding stability, organizational capacities and strategic planning.

It is also recommended to collect (where possible) sustainable declarations, written and signed statements in which individuals/organisations explain how they intend to use/are using the SENVIBE results/outcomes. If the declarations are obtained during the project lifetime, this number can be a useful indicator to anticipate the project's sustainability and is simultaneously a clear exploitation evidence.

2.1. Aims and activities per each partner

P1. [University of Novi Sad \(UNS\) – coordinator:](#)

The UNS will initiate and undertake multiple activities for the sake of institutional sustainability with respect to four **SPOs** listed in the Introduction. First, all modernised and new courses tailor-made for students of different engineering departments (**SPO1**) will be run after the project completion. Moreover, a list of courses not directly related to No&Vib, but with potentials to be related to it (such as course on Physics), has already

been created while working on Task 1.1. Efforts will be put into their modernisation in this respect, which is of interest as these courses are given to freshers, and, thus, attended by a large number of students, which will contribute to widening the pool of engineers-to-be educated in No&Vib. The LLL course (**SPO2**) will be officially certified through formal university/faculty structures/bodies and run after the project completion. As officially accredited, the MSc programme in VAE (**SPO3**) will also continue to exist, but the efforts need to put into assuring that a certain number of students are government-funded/subsidized. The UNS will actively and continuously participate in the activities of the No&Vib Hub (**SPO4**), identifying new stakeholders that can be interested in joining it via signing the Memorandum of Understanding, and also strengthening links with them for the sake of further cooperation regarding students' internships. Besides this, the teaching staff trained to use e-tools and b-learning approaches will implement them into other subjects that they teach (for example, Engineering Mechanics). The ICT platform will be maintained after the project completion by the UNS technical staff. It will be continuously enhanced and used by the UNS teaching staff as well. In order to continue the cooperation with the partners from the UK and Sweden, joint project applications at different levels of funding (local, national and international) are planned.

P2. [Kungliga Tekniska Högskolan, Stockholm, Sweden \(KTH\):-](#)

P3. [University of Southampton, Institute of Sound and Vibration Research, Southampton, United Kingdom \(UoS-ISVR\):](#)

The academic lead from the University of Southampton partner, Dr Ferguson, will continue to publicise the work and coverage of the SENVIBE project on the academic's university web page. In addition, acknowledgements and reference will be made where appropriate in suitable publications and dissemination activities and also in future planning and collaboration with the project partners beyond the timescales of the project. Collaboration might cover either or both education and research projects.

P4. [University of Nis \(UNI\):](#)

Based on the results of the SENVIBE project in achieving four **SPOs**, the University of Niš plans to undertake the following activities related to the sustainability of the project:

- keeping the modernized courses of the one subject in undergraduate studies of Environmental Engineering and one course in undergraduate studies of Occupational Safety Engineering, as an integral part of future curricula of the programs at the Faculty of Occupational Safety;

- implementing new courses tailor-made for students of undergraduate programmes as an integral part of future curricula of three different engineering disciplines (Mechanical Engineering, Electrical Engineering, and Civil Engineering) at other faculties of University of Niš;
- modernizing existing courses in the field of No&Vib for students of MSc programmes;
- implementing developed ICT platform for other University courses;
- developing and implementing a new module for students of the MSc programme in Vibro-Acoustic Engineering within study programmes 'Environmental Engineering' and 'Occupational Safety Engineering';
- implementing developed Life-Long Learning (LLL) courses for practitioners in the fields of No&Vib Engineering, Environmental Protection and Occupational Safety in Southeast Serbia through the organization of the courses and workshops in collaboration with a local and national authorities and local and regional non-profit organization;
- strengthening strategic cooperation with stakeholders engaged in local industry and local and national authorities through the developed No&Vib hub;
- contracting with local industry and local and national authorities for the purpose of conducting students' professional practice;
- realization of research activities in No&Vib fields.

P5. [University of Kragujevac \(UniKG\)](#):

The Faculty of the Mechanical and Civil Engineering in Kraljevo, which is an organization unit of the University of Kragujevac, will keep the modernized courses of the three subjects in Bachelor studies of Mechanical Engineering, one course in Bachelor studies of Civil Engineering and one course in Bachelor studies of the Occupational Safety, as an integral part of future curricula of the study programmes. Such approach will contribute to the sustainability of the first project objective, modernization of the existing courses in the field of the No&Vib for students of Mechanical Engineering, Civil Engineering and Occupational Safety.

Further, the sustainability of the objective of the creation and implementation of the LLL courses for practitioners in the field of the No&Vib will be provided through the organization of the courses in collaboration with the Local Ecology Action Movement, a local government body that already has a strong collaboration with the Laboratory for Acoustics and Noise Protection of the Faculty of the Mechanical and Civil Engineering in Kraljevo. The two institutions have been organizing seminars on noise

control for inspectors for control of environment pollution, and the new LLL courses will only contribute to the expansion of the activity.

As the developments in the past have shown, the participation of the contents about the No&Vib problems was permanently increasing in curricula of the University of Kragujevac, which, together with the present strong research basis and interest of the teaching staff in the noise protection research, guarantees the sustainability to the first two of the objectives of the SENVIBE project. On the other hand, the permanent research interest and the strong research basis represent also the fundament of the contribution of University of Kragujevac to the third project objective (the new MSC course in No&Vib engineering) through provision of teachers and teaching materials, as well as to the sustainability to the fourth project objective, the work of the No&Vib hub, as an participant with genuine interest in its work.

P6. [EDUCONS University, Sremska Kamenica \(UESK\):](#) -

P7. [Provincial Secretariat for Urban Planning and Environmental Protection, Novi Sad \(SUPEP\):](#) - The Provincial Secretariat for Urban Planning and Environmental Protection, within its legal obligations, determines the measures and conditions for noise protection through plans, programs and projects; gives approvals in the processes of strategic impact assessments and in environmental impact assessments in the process the issuance of an integrated permit for operation of the plant and activities. It also provides funding for environmental noise monitoring in its territory and supervises and controls the application of noise protection measures in the environment.

One of the objectives of the Erasmus + SENVIBE project is to establish the No&Vib (Noise and Vibration) Hub ensuring the existence of the links between the key stakeholders (universities, local authorities, professional organizations, industrial and business sector, and wider society) in the field of noise and vibration in Serbia. According to their interests in the partnership through the No&Vib Hub, their individual and mutual contributions will be regulated through the Documents for partnership in the platform, which should be developed in the formation of the No&Vib HUB in the WP6.

In order to ensure the long-term sustainability of the project, constant collaboration between universities and companies will become increasingly important in the future. The universities will take an active role in the transfer of new knowledge through practical applications and enabling their students to gain practical experience in companies via students internships or realization of their projects in companies. For the purpose of comprehensive institutional and educational capacity building,

companies should also have business benefits through participation in the HUB. Different organizations partner can achieve greater impact, reform and/or sustainability by working cooperatively with others. The most important is that a multi-stakeholder collaboration is necessary. It is important to point out that this collaboration should not be beneficial in one way, but should be mutually useful. This implies that if, for example, universities need companies or local/regional governmental bodies to provide students internships or practical subjects for their projects, one would need to determine how companies or local/regional governmental bodies can benefit from this cooperation as well.

As it is necessary to improve the quality of environment and noise protection as well, the Provincial Secretariat for Urban Planning and Environmental Protection (SUPEP) will have a significant impact on strengthening the institutional and personnel capacities of governmental bodies, professional institutions and companies which are obliged to implement the legal obligations in this field.

P8. [Union of Employers of Vojvodina, Novi Sad \(UPV\):](#)

Companies in Serbia need continuous improvement of knowledge and information in the field of health protection in the work and environment. By establishing a No&Vib HUB, it is necessary to provide the industry with a continuous access to new technologies and information, in order to improve the knowledge of experts who are employed in the private sector in the field of noise and vibration. UPV will continue the activities in this project by continually informing members on this topic - through its site and social networks, downloading information from the Project site and experts in this field. In accordance with the existing Agreement on business-technical cooperation between the UPV and the Faculty of Technical Sciences of the University of Novi Sad, as well as the cooperation established through the SENViBE project, we will continue activities on improving the knowledge of the economy and LLL in this area, as well as connecting students and the economy through professional practice in companies.

P9. [Institute for Occupational Health, Novi Sad \(IOH\):](#)

The Institute will use learning material and training packages on LLL courses also after the implementation of LLL courses and the whole duration of SENViBE project, as it is expected that there will be more interesting attendees for such type of education. The number of attendees is limited to max 15 (in six different regions of Serbia). We hope that the list of stakeholders will provide more attendees for LLL courses in these six and more regions of Serbia.

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Novi Sad, 04/07/2019**

**Approved by the Quality Assurance Group Leader
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**Approved by Steering Committee
Southampton, 03/12/2019**

"This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein"