

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 3.9

Activity 8.7

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1. Introduction

This document presents the strategic approach and the action plan that should provide sustainability to the results of the Erasmus+ Capacity Building in Higher Education project number EAC/A05/2017, entitled "Strengthening Educational Capacities by Building Competences and Cooperation in the Field of Noise and Vibration Engineering", which will be further referred to by its official acronym "SENVIBE".

The intended public for the document consists of A the participants in the realization of the project, but it will be also useful to all the stakeholders in the field of noise and vibration protection who will participate in the dissemination and exploitation of the project outcomes after the completion of the project activities in November 2021. As it presents the overall plan for wider use of the project outcomes, the document is also useful for all individuals and organizations with interest in noise and vibrations protection, and hence it also contains a solid overview of the project results

The development of the sustainability plan is the subject of the activity 8.7 of the SENVIBE project, entitled "Institutional sustainability", which runs during the whole project, and this report represents the intended deliverable of the activity. The present document represents the third version of the report, and it is result of cooperation of all project partners with the University of Kragujevac as the activity leader.

The concept of the document follows the top-down design applied to the development of the sustainability plan for the SENVIBE project. The design method starts with establishment of the strategic approach to the sustainability plan, which is based on the accepted definition of the sustainability and clarification which are the elements of the sustainability plan that should be designed. Each of the elements of the sustainability plan is further specified for the SENVIBE project, which defines the specific requirements that the sustainability plan of the SENVIBE project has to fulfil. The specific requirements represent the strategic framework of the sustainability plan of the SENVIBE project that any of its implementation has to embody. The document further presents the action plan, hence measures and resources, which will provide conditions for provision of the sustainability to the SENVIBE project results. Unlike the strategic framework of the sustainability plan, the action plan depends on the current circumstances, and its modifications and re-arrangements are the subject of the permanent efforts within the activity 8.7 of the SENVIBE project, which will lead to the updated versions of the sustainability plan of the project.

2. The concept of the sustainability plan of the SENVIBE project

The concept of the sustainability

As the term "sustainability" and even the term "project sustainability" have many meanings, the exact definition of the term "sustainability" and "sustainability" plan is of vital importance for definition of a consistent and successful sustainability plan for the SENVIBE project, because such a definition should clearly determine not only what the sustainability is, but also – not less important - what sustainability is not.

The definition of the sustainability within the Erasmus+ program is provided in 2006 by the European Commission Directorate-General Education and Culture (also abbreviated as "EC-DG-EC" in the following text) in the final report of the project "Sustainability of International cooperation projects in the field of higher education and vocational training", which states that "a project is sustainable when it continues to deliver benefits to the project beneficiaries and/or other constituencies for an extended period after the Commission's financial assistance has been terminated". Two substantial features of the sustainability are outlined by the definition: the first, that the content of the sustainability is provision of the benefits to the beneficiaries, and the second, that the sustainability refers to the actions after the end of the project. The first aspect of the definition facilitates definition and implementation of the sustainability plan by specifying its scope, while the second aspect of the definition stresses the long-term and continuous character of the sustainability actions as opposed to the project activities, which, by the definition of the project as human activity, have limited duration. It is exactly this second aspect of the sustainability, its long-term and continuous character, what makes the sustainability planning such a demanding project management task, because the usual project management approaches and tools, which are based on the concept of the limits of "project triangle", cease to be applicable to the sustainability as a task without limited duration.

The definition also enables establishing of the relationships and drawing of the borders between the sustainability and similar project activities, such as dissemination and exploitation. Dissemination is defined by the EC-DG-EC as "a planned process of providing information to key parties on the quality, relevance and effectiveness of the results of programmes and initiatives. It occurs as and when the results become available." Therefore, dissemination is actually not limited to project duration and it represents a part of the sustainability action plan. On the other hand, EC-DG-EC defines the exploitation as "making use of and deriving benefit from a project result", so that the exploitation activities and sustainability actions have the same scope, but the

difference between them is that the exploitation, opposite to the sustainability, starts during the project, represents a part of the project activities and is funded by the project funds.

The presented concept of the sustainability comprises three aspects:

- organizational sustainability, which comprises establishment or other engagement of subjects who are going to carry out the sustainability actions after the end of the project and seizure of existence of the project team;
- financial sustainability, which comprises provision of the funds for carrying out sustainability actions after the project funds become unavailable;
- institutional sustainability, which comprises existence and relative stability of the relevant policies, legal and wider social framework as the environment for carrying out of the sustainability actions;

The concept of the sustainability plan

The sustainability plan represents a comprehensive and coherent set of sustainability goals, actions that provide accomplishment of the sustainability goals and the requirement that should be fulfilled to enable the actions. The elements of the sustainability plan are:

The scope, which defines the specific goals, objectives and targets of the sustainability plan; while the contents of the sustainability is to provide benefits of the project to the beneficiaries, not all the outcomes of a project have to be sustainable; besides, even the sustainability goal may be different than the project goal, and it is even usual that the targets of the sustainability plan are extended in comparison of the targets of the project;

The key performance indicators (in further text also abbreviated as KPIs), which are measurable values selected to quantify the accomplished goals, objectives and targets of the sustainability plan and enable comparison between the results and expectations of the sustainability plan, further suggesting the corrective measures and future direction of the actions.

Mechanisms, which represent general actions and procedures that lead to accomplishment of individual goals and objectives of the sustainability plan.

The scope, the key performance indicators and the mechanisms are of permanent character and they represent **the strategic framework** of the sustainability plan.

Action plan represents an ordered set of concrete activities and tasks that should be performed by defined actors with the aim to contribute to the accomplishment of the sustainability plan. By the type of the sustainability action, *project results may be maintained, developed, or disseminated*. The project results are maintained if the goal of an activity is to update results achieved during the project. The actions of development are the actions that lead to creation of new results on the basis of the results achieved during the project. The dissemination actions provide the results to the selected target groups regardless if their content is changed or not. The action plan has to be aligned with the conditions in the immediate and wider environment, so that it has dynamic and variable character.

Resources for the implementation of the sustainability plan comprise financial, technical and organizational resources necessary for implementation of all activities and tasks in the action plan. As a consequence of the variability of the action plan the resources committed to the realization of the sustainability plan have dynamic character.

The action plan and the resources represent, therefore represent the variable elements that depend on the implementation of the sustainability plan.

3. The strategic framework of the sustainability plan of the SENViBE project

The goal of the SENViBE project is to improve and build national educational capacities, cooperation and competences in dealing with environmental and occupational noise and vibration (in further text also abbreviated as "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 (in further text also abbreviates as 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 the 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 project objectives (in further text also abbreviated as APOs) of more general nature:

- 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.

3.1. Scope

The overall goal of the sustainability plan of the SENVIBE project is to maintain the specific results SPO1-SPO4, to exploit the benefits of the other project objectives, and to provide permanent dissemination of the project results to target groups – and these are students of engineering of Serbian universities, and professionals who deal with noise and vibrations problems.

The specific objectives of the sustainability plan of the SENVIBE project ((in further text also abbreviates as SSOs)) are derived from the respective SPOs:

SSO1, that the new and modernised courses in the field of No&Vib remain part of the academic offer of the Serbian HEI, as well as to facilitate introduction of new and modernised courses in the field of No&Vib in Serbian HEI that did not participated in the SENVIBE project; while this SSO essentially considers sustainability of the SPO1, it also directly addresses the sustainability of the APOs, because the new and modernized courses will be taught by the teachers trained within the SENVIBE project, who will use

the equipment provided by the SENVIBE project, and apply the new teaching methodologies, introduced within the course of the SENVIBE project;

SSO2, to keep the LLL courses, developed within the SENVIBE project, regularly ran by the project partners, as well as to increase the number of the participants in the LLL courses in comparison with the number of participants during the project; this SSO considers the sustainability of the SPO1;

SSO3, to keep the new MSc programme in Vibro-Acoustic Engineering in academic offer of University of Novi Sad, as well as to increase the participation of other HEI partners in realization of the MSc programme; for the same reasons as it was the case with the SSO1, this SSO essentially considers sustainability of the SPO3, but also directly addresses the sustainability of the APOs.

SSO4, to keep the No&Vib Hub operative, as well as to increase the number of participants in the No&Vib Hub activities;

3.2. Key performance indicators

The key performance indicators of the progress of sustainability plan of the SENVIBE project towards its proclaimed objectives. According to the specific sustainability objectives they are related to, they may be separated in five groups, one related to each of the SSOs, and one that gathers the KPIs that measure the overall impact of the SENVIBE project to the intended target groups. The KPIs are given in the following list, which presents the complete names of the KPIs and the adopted abbreviations, which will be used in the project documentation as short description of each of the KPIs.

KPIs that measure accomplishment of SSO-1

- KPI-1) the number of new and modernised courses on noise and vibration engineering in academic offer of Serbian HEI partners in the SENVIBE project (abbrev. **Number of new and modernized courses**);
- KPI-2) The number of short modules on noise and vibration introduced in curricula of general physics subjects; (short name **Number of short modules**)
- KPI-3) the number of courses and short modules on noise and vibration engineering in academic offer of Serbian HEI that were not participants in the SENVIBE project (short name **Number of subjects and modules outside SENVIBE**);

KPIs that measure accomplishment of SSO-2

KPI-4) annual number of LLL courses on No&Vib engineering held by the programme developed in the course of the SENVIBE project (short name **Annual number of LLL courses**);

KPI-5) annual number of participants LLL courses on No&Vib engineering held by the programme developed in the course of the SENVIBE project (short name **Annual number of participants in LLL courses**);

KPIs that measure accomplishment of SSO-3

KPI-6) presence of the MSc programme in Vibro-Acoustic Engineering developed during the SENVIBE project in academic offer of University of Novi Sad (short name **Existence of The Master Program**);

KPI-7) the number of students enrolled in the MSc programme in Vibro-Acoustic Engineering of University of Novi Sad (short name **Number of students of The Master Program**);

Objective	KPI	Target values		
		Short-term	Mid-term	Long-term
SSO-1	KPI-1)	11	11	13
	KPI-2)	2	4	7
	KPI-3)	0	2	4
SSO-2	KPI-4)	2	4	6
	KPI-5)	30	40	50
SSO-3	KPI-6)	Present	Present	Present
	KPI-7)	15	20	30
SSO-4	KPI-8)	Operative	Operative	Operative
	KPI-9)	40	50	65
	KPI-10)	80	100	130
Integral	KPI-11)	70	90	125
	KPI-12)	40	60	80
	KPI-13)	500	750	1000
	KPI-14)	40	50	60

Table 1: KPIs of the sustainability plan of the SENVIBE project with target values

KPIs that measure accomplishment of SSO-4

KPI-8) operational status of the No&Vib Hub (short name **Operational status of No&Vib Hub**);

KPI-9) number of institutions that joined the No&Vib Hub (short name **Number of institutions in No&Vib Hub**);

KPI-10) number of stakeholders in the stakeholders list kept by No&Vib hub (short name **Number of stakeholders in the list**);

The integral KPIs

KPI-11) Number of direct beneficiaries within academic staff of Serbian HEI (short name **Number of direct academic beneficiaries**)

KPI-12) Number of direct beneficiaries within administrative staff of Serbian HEI (short name **Number of direct administrative beneficiaries**)

KPI-13) Number of direct beneficiaries within students of Serbian HEI (short name **Number of direct student beneficiaries**)

KPI-14) Number of direct beneficiaries outside the Serbian HEI (short name **Number of direct outside beneficiaries**)

The target values for the KPI in the short-term (2 years after the end of the project), mid-term (5 years after the end of the project) and long-term period (10 years after the end of the project) are given in the Table 1.

3.3. Mechanisms

The mechanisms for accomplishment of the objectives of the sustainability plan of the project SENVIBE are selected in accordance with the present long-term policies in Serbian education and legal system.

SSO1

The short-term and mid-term sustainability to the new and modernized courses in the field of No&Vib will be provided by including them into process of accreditation of the existing study programmes. These programs are not only successful, but they also have wide support among the present management and teachers of Serbian universities. The rather general nature of the programmes is conservative, but enables them to be approved at the respective levels of Serbian HEI system (academic councils of faculties and universities, as well as the national body for accreditation in higher education) without hesitation and sometimes even resistance met by more specific programmes. The accreditation within such a program enables courses to stay in the academic offer for at least seven years, thus providing the requested short-term and mid-term sustainability to the SPO1 and APOs.

The long-term sustainability of the SPO1 and APOs are to be provided through future accreditations, which comprises permanent development and modernization of courses on noise and vibrations as well as permanent dissemination of the SENVIBE project results to the students of engineering at Serbia HEIs included in SENVIBE project.

The second part of the SSO1, adoption of the SENVIBE outcomes by Serbia HEI not included in the SENVIBE project, is, due to the autonomy of Serbian HE system, to a lesser extent under control of the SENVIBE team members. However, direct provision of the SENVIBE outputs with academic character (including courses' curricula and teaching materials) to Serbian HEIs that did not participate in the SENVIBE project should stimulate teachers of engineering at those universities to introduce similar courses into their study programmes.

SSO2

The LLL courses for professionals in the field of noise and vibrations are already present in the Serbian market, as their institutional sustainability is already assured by the legislative framework of Republic of Serbia, which essentially requires professional knowledge and skills that are not a part of the mandatory formal education of Serbian HE and other institutions. It is for that reason that the introduction of the Serbian Law on Environmental Protection in 2004 and especially the Law on Noise Protection in 2010 led to increase of the offer of the courses for professionals in the fields of noise and vibration protection. The presence of the Serbian HEI and IOH in the project team of the SENVIBE project provides also the organizational sustainability to the SSO2, and the commercial aspect of the LLL courses ensures its financial sustainability.

The true challenge here is to regularly organize the courses with the contents developed during the SENVIBE project. The key advantage of these courses are the quality of the teachers, and it should be materialized in production of high quality of teaching materials, application of the advanced teaching methodologies based on the practical work of participants and increased availability of teachers and teaching materials through application of e-learning and b-learning. These advantages of the LLL courses should be disseminated to all the relevant stakeholders in the field of noise and vibration. The stakeholders, whose contacts will be gathered into the SENVIBE stakeholders' list, will be individually contacted with the aim to promote the LLL courses and increase their visibility with respect to the competition.

SSO3

The basic mechanism for accomplishment of the SSO3 is accreditation of the new MSc course, as it is the case with the SSO1. While the accreditation of a new study program is a much larger effort than accreditation of new courses in an already existing study program, this process should be completed by the end of the project, and the short-term and mid-term sustainability of the SPO3 will be ensured.

However, the true challenge, and probably the largest challenge of the whole SENViBE effort, will be to provide long-term sustainability to the SPO3 in the conditions of increase of academic offer and decrease of number of students in the Serbian HEI system. In these conditions, universities tend to be hasty about new study programmes and frequently overreact to their growing pains. The numbers of students at well-established and well-respected MSc programmes in acoustic engineering and noise and vibration engineering of KTH and ISVR temper the expectations of the project team with respect to the number of students on the new MSc program of UNS, but it will be of vital importance that the management of the UNS timely understand the importance and benefits of the MSc program in Noise and Vibrations Engineering at UNS.

An opportunity (in the SWOT meaning) represents the fact that the MSc program in Noise and Vibration protection will remain the only study program on noise and vibration in the whole Serbian HE system, but the competition of the other engineering MSc programmes (especially those in informatics), and overall decrease of interest of students for studies of engineering and science in whole Europe require an intensive promotion campaign that will focus on the high quality of teachers, teaching methodologies and superior learning environment that the MSc program in Noise and Vibrations may offer due to its development within the SENViBE project.

The appeal of the MSc program may be substantially increased by mechanisms offered by complementary Erasmus+ programs, especially exchanges of students and development of a common study program with the EU academic partners on the project.

SSO4

The No&Vib Hub is, by its nature, the ultimate instrument for provision of sustainability to results of the SENViBE project. The key mechanism for provision of the sustainability of the SSO4 are contractual obligations between the UNS and other parties that will participate in the work of the No&Vib Hub. The contractual obligations will be established in a form of several separate documents that will specify the responsibilities of all sides with respect to:

- modalities of participation in work of the No&Vib Hub;
- contributions to work of the No&Vib Hub;
- management of the No&Vib Hub;
- rights to represent the No&Vib;
- provision of infrastructure for the work of the No&Vib;

The contractual obligations will provide the organizational and financial sustainability to the No&Vib Hun and the SSO4, but for achieving of its mission No&Vib Hub will have to provide its own institutional sustainability through creation and facilitation of policies that request stronger stance of the Serbian society towards the problems of noise and vibrations. In order to have such a strong influence, the No&Vib Hub will have to include all relevant stakeholders in its work, which requires careful selection of relevant partners. With this aim, the No&Vib Hub will have to keep and maintain the stakeholders list of the project SENViBE, and methodically work on inclusion of the stakeholders into work of the No&Vib Hub through individual contacts.

4. Implementation

4.1. Action plan

The action plan for the project results represents an implementation of the adopted strategy framework which comprises specification of the content of the activities, responsible partners, and indication of the timeframe for realization of the activities.

Preparatory actions

The preparatory actions of a sustainability plan comprise the actions that the project team performs towards the sustainability of the project results during the project. Unlike the other sustainability actions, the preparatory actions do not relate to specific project results, but they represent infrastructure for the sustainability actions that will occur after the end of the project.

Sustainability of results of a project does not depend only on their quality, but is also critically related to the establishment of partnerships and links between project team and all the relevant stakeholders that may support maintenance, developments and dissemination of the project results after the end of the project. Sustainability of the SENViBE project has to be ensured by strong cooperation with policy makers and influencers at local, regional and national level, including government bodies, non-government organizations, companies and associations of professionals. However, the strategic framework for the sustainability of the SENViBE project implicitly comprises also the maintenance of the list of stakeholders. Although a by-product of the SENViBE project, the stakeholders list represents an important tool for all other project activities. The stakeholders should be clearly defined and established from the very beginning of the project. The SENViBE Project Management Team has initiated the creation of the list of stakeholders 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. The importance of the stakeholders list requires that its maintenance has to be raised to the highest possible level, which is No&Vib Hub.

An additional action that should be performed during the project is collection of declarations of use of project results, which are written and signed statements where project partners and stakeholders explain how they intend to use the SENViBE results. The declarations of use of project results enable better planning of the sustainability actions. Although no one may be obliged to sign the declarations, they are useful indications of the needs of stakeholders.

Maintenance of project results

The activities on maintenance of project results are presented in the Table 2:

Subject	New and modernized Noise and Vibration courses on Serbian HEI that participate in the SENViBE project	
Description	Partner	Timeframe
Lecturing the courses <ul style="list-style-type: none"> • “Noise and vibration protection” at study programme of Civil Engineering 	UNS/UniKg	2020-2022
Lecturing the courses <ul style="list-style-type: none"> • “Monitoring and Noise Protection” at study programme of Electrical Engineering • “Noise and Vibrations” at study programme of Environment Protection Engineering • “Noise, Vibration and Design” at study programme of Mechanical Engineering • “Occupational noise and vibration” and “Human response to noise and vibration” at study programme of Occupational Safety • “Noise and vibration protection” at study programme of Civil Engineering (the accredited common study programme with University of Kragujevac) • Acoustics and audio techniques in traffic engineering at study programme of Traffic Engineering and short modules on subjects	UNS	2020-2027

<ul style="list-style-type: none"> • "Physics" at study programmes: Power engineering, electronics and telecommunications, Computer sciences and automatic control, and Traffic engineering • "Selected chapters in Physics 1" at study programmes Environment protection and Occupational safety"; • "Civil engineering physics" at study programme of Civil Engineering; • "Engineering physics" at study programmes Engineering mechanics and engineering design; 		
<p>Lecturing the courses</p> <ul style="list-style-type: none"> • "Noise and Vibrations" at study programme of Occupational Safety Engineering <p>and short modules on subjects</p> <ul style="list-style-type: none"> • Physics at study programme of Occupational Hazard • Physics at study programme of Environment Protection • Physics at study programme of Fire Protection 	UNI	2020-2027
<p>Lecturing the courses</p> <ul style="list-style-type: none"> • "Maintenance and diagnostics" at study programme of Mechanical Engineering • "Noise and vibration protection" at study programme of Mechanical Engineering <p>and short module on subject</p> <ul style="list-style-type: none"> • "Physics" at study programme of Mechanical Engineering 	UniKg	2020-2027
<p>Lecturing the course</p> <ul style="list-style-type: none"> • "Noise and vibration protection" at study programme of Civil Engineering <p>and short module on subject</p> <ul style="list-style-type: none"> • "Engineering Physics" at study programme of Civil Engineering 	UNS/UniKg	2020-2022
<p>Lecturing the courses</p> <ul style="list-style-type: none"> • "Environmental Monitoring" at study programme of Environmental Protection • "Environmental noise and vibration" at study programme of Environmental Protection 	UESK	2022-2029
<p>Accreditation of new and modernized courses in noise and vibrations in study program of:</p> <ul style="list-style-type: none"> • Electrical Engineering • Environment Protection Engineering • Mechanical Engineering • Occupational Safety 	UNS	2027

<ul style="list-style-type: none"> • Civil Engineering • Traffic Engineering 		
Accreditation of new and modernized courses in noise and vibrations in study program of Occupational Safety	UNI	2027
Accreditation of new and modernized courses in noise and vibrations in study program of Civil Engineering	UNS/UniKg	2022
Accreditation of new and modernized courses in Noise and Vibrations in study program of Mechanical Engineering	UniKg	2027
Accreditation of new and modernized courses in Noise and Vibrations in study program of Environmental Protection	UESK	2027
Subject	LLL courses for professionals in Noise and Vibration engineering	
Description	Partner	Timeframe
Organization of courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	UNS/UNI/ UniKg /IOH/ TBD	annual 2021-
Organization of courses in Environmental & Occupational Noise and Human Vibration Risk Assessment	UNS/UNI/UniKg/ TBD	annual 2021-
Subject	MSc programme in Noise and Vibrations at UNS	
Description	Partner	Timeframe
Information of the relevant management structures of the UNS about the MSc programme in Noise and Vibrations	UNS	permanent 2021-
Accreditation of the MSc programme in Noise and Vibrations at UNS	UNS	2027
Subject	Stakeholders list	
Description	Partner	Timeframe
Updating of the stakeholders list	No&Vib Hub	permanent 2021-

Table 2: Activities on maintenance of the SENViBE project

Development of project results

The activities on development of project results are presented in the Table 3:

Subject	New and modernized Noise and Vibration courses on Serbian HEI that participate in the SENViBE project	
Description	Partner	Timeframe
Development of new and modernization of courses in noise and vibrations in study program of: <ul style="list-style-type: none"> • Electrical Engineering • Environment Protection Engineering • Mechanical Engineering • Occupational Safety • Civil Engineering 	UNS	permanent 2021-

• Traffic Engineering		
Development of new and modernized courses in noise and vibrations in study program of Occupational Safety	UNI	permanent 2021-
Development of new and modernized courses in noise and vibrations in study program of Civil Engineering	UniKg	permanent 2021-
Development of new and modernized courses in Noise and Vibrations in study program of Mechanical Engineering	UniKg	permanent 2021-
Development of new and modernized courses in Noise and Vibrations in study program of Environmental Protection	UESK	permanent 2021-
Subject	MSc programme in Noise and Vibrations at UNS	
Description	Partner	Timeframe
Preparing applications for projects of academic mobility	Academic partners	biannual 2021-
Preparing application for projects of common study programmes	UNS/KTH/ISVR	biannual 2021-
Organization of trainings for teachers in noise and vibration engineering	Academic partners	annual 2021-
Subject	No&Vib Hub	
Description	Partner	Timeframe
Increasing the number of participants of the No&Vib Hub	No&Vib Hub All project partners	permanent 2021-

Table 3: Activities on development of the SENVIbE project

Subject	New and modernized Noise and Vibration courses on Serbian HEI that participate in the SENVIbE project	
Description	Partner	Timeframe
Provision of the project outputs (including curricula of courses and teaching materials) in noise and vibration engineering to Serbian universities not included in SENVIbE project	Serbian academic partners No&Vib Hub	annual 2021-
Subject	LLL courses for professionals in Noise and Vibration engineering	
Description	Partner	Timeframe
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	UNS/UNI/UniKG/UESK UPV/SUPEP/IOH/ TBD	annual 2021-
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Risk Assessment	UNS/UNI/UniKG/UESK UPV/SUPEP/IOH/ TBD	annual 2021-
Subject	MSc programme in Noise and Vibrations at UNS	
Description	Partner	Timeframe
Promotion campaign for MSc programme in Noise and Vibrations at UNS	UNS	annual 2021-
Subject	All project results	
Description	Partner	Timeframe

Organization of the international conference "Noise and Vibrations"	UNI	biannual from 2022
Availability of the SENVIBE website	No&Vib Hub	permanent 2021-
Keeping the link to the SENVIBE website at websites of project partners	All project partners	permanent 2021-
Measurement of the KPIs	No&Vib Hub	annual 2021-

Table 4: Activities on dissemination of the SENVIBE project

Dissemination of project results

The activities on dissemination of project results are presented in the Table 4.

4.2. Resources

Financial resources

The sources of financial resources for the accomplishment of the sustainability plan depend on the beneficiaries of the project results that are used.

SSO1 and **SSO3**. The accredited courses represent part of the respective programs of engineering studies, and they are going to be financed by the respective project partners according to their sources and policies of funding. Since the existing study programmes modernized and new courses that are parts of well-established and quite standard study programs, their funding is already resolved either through state funding or scholarships paid by the students, so that the financial sustainability of the SSO1 is ensured. On the other hand, the MSc programme in noise and vibration engineering represents a completely new study programme, but since the UNS is a state university, the accreditation will mean that the funding for a certain number of students will be provided by the state, so that the accreditation will provide not only institutional, but also the financial sustainability to the SSO3.

SSO2. The courses for professionals in field of noise and vibrations are going to be organized on the commercial basis, so that participants are going to pay the fee, which will cover all the costs of organization. The modalities may be different, as the fee may be paid by participants, their companies, or using funds or various national and international projects.

SSO4. Unlike the courses for professionals, the activities of the No&Vib Hub will not, in principle, generate revenue, and the financial aspect of the SSO4 should be carefully provided. The main sources of the funding of the No&Vib hub activities are contribution of the participants in the work of the No&Vib Hub and the funds of the No&Vib Hub projects. The basis for the planning of the financial sustainability of the

No&Vib Hub is analysis of its operational costs, which may be classified as direct and indirect costs.

- The direct costs comprise staff costs, travel costs and costs of dissemination and promotion, which consist of event costs and costs of printed and electronic publication.
 - As the No&Vib Hub does not generate revenue, its staff costs should be covered through volunteering work of the engaged personnel, who will not demand additional pay for their engagement in No&Vib Hub; as the engaged personnel are teachers, researchers and professionals in the field of noise and vibrations, and the majority of their work in No&Vib hub represents coordination of their daily work, there is a strong motivation for the volunteering engagement in the work of the No&Vib hub; the obvious exception represent extensive engagements on No&Vib projects, but in that case the staff costs may be covered by the project's funds;
 - The travel costs due to the No&Vib Hub meetings are to be covered by the participating institutions; since the institutions are stakeholders in the field of noise and vibrations, they are properly motivated to bear the small costs; this obligation is implicitly expressed in the articles 1 and 2 of the partnership agreement that all participants in work of the No&Vib sign with UNS; the exceptions are frequent or high costs due to the No&Vib Hub projects, which will be covered by the projects' funds;
 - The No&Vib should use the website of the SENVIBE project and its own website for dissemination and publication in electronic form; the website should be hosted in the academic domain by some of the Serbian academic partners from the SENVIBE project; an alternative is registration of the No&Vib domain in organization domain (.org), which is justified by the versatility of the participants in the No&Vib Hub, and is not expensive; the printed publications costs are in general to be covered by the funds of No&Vib projects;
- The indirect operational costs of the No&Vib hub are low, and they are to be covered by the Centre for Vibration and Acoustics Studies (CeVAS) of the UNS, as they are essentially connected to the infrastructure used by No&Vib Hub, which is the subject of the following paragraph;

Technical resources

The technical resources for realization of the sustainability plan comprises teaching equipment and room, as well as necessary ICT infrastructure and rooms for No&Vib Hub.

The teaching equipment is provided by the SENVIBE project, and its maintenance is provided by legal obligations of the state universities that included the equipment in its official property list. The rooms and other infrastructure for provision of the sustainability to SPO1, SPO2 and SPO3 are provided in the process of accreditation.

The ICT infrastructure for the provision of the sustainability to the SENVIBE project results comprises the SENVIBE website and the accompanying virtual platform for collaboration in the field of noise and vibrations. The ICT infrastructure and rooms will be provided by the UNS through the CeVAS, and the obligation is the subject of the "Declaration on provision of the virtual platform for collaboration in the field of noise and vibrations" signed between the UNS and the SENVIBE project coordinator on 8.1.2019, which is provided as an annex to the document.

Organizational resources

The organizational resources for provision of the sustainability to the SENVIBE project results consist of project partners and the No&Vib Hub. The specific roles of each of the partners, including the No&Vib Hub, in provision of the sustainability of the SENVIBE project results is presented in the following chapter.

4.3. The roles of specific partners

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.

A list of the activities of the University of Novi Sad, ordered by timeframe, that will contribute to the sustainability of the SENVIBE project is given in the Table 5.

Description	Subject	Timeframe
Keeping the link to the SENVIBE website at websites of project partners	SPO1-4	permanent 2021-
Lecturing the courses <ul style="list-style-type: none"> • "Noise and vibration protection" at study programme of Civil Engineering (the accredited common study programme with University of Kragujevac) 	SPO1	2020-2022
Lecturing the courses <ul style="list-style-type: none"> • "Monitoring and Noise Protection" at study programme of Electrical Engineering • "Noise and Vibrations" at study programme of Environment Protection Engineering • "Noise, Vibration and Design" at study programme of Mechanical Engineering • "Occupational noise and vibration" and "Human response to noise and vibration" at study programme of Occupational Safety • "Noise and vibration protection" at study programme of Civil Engineering (the accredited common study programme with University of Kragujevac) • Acoustics and audio techniques in traffic engineering at study programme of Traffic Engineering and short modules on subjects <ul style="list-style-type: none"> • "Physics" at study programmes: Power engineering, electronics and telecommunications, Computer sciences and automatic control, and Traffic engineering • "Selected chapters in Physics 1" at study programmes Environment protection and Occupational safety"; • "Civil engineering physics" at study programme of Civil Engineering; 	SPO1	2020-2027

Description	Subject	Timeframe
<ul style="list-style-type: none"> • "Engineering physics" at study programmes Engineering mechanics and engineering design; 		
Development of new and modernization of courses in noise and vibrations in study program of: <ul style="list-style-type: none"> • Electrical Engineering • Environment Protection Engineering • Mechanical Engineering • Occupational Safety • Civil Engineering • Traffic Engineering 	SPO1	permanent 2021-
Information of the relevant management structures of the UNS about the MSc programme in Noise and Vibrations	SPO3	permanent 2021-
Increasing the number of participants of the No&Vib Hub	SPO4	perm. 2021-
Organization of trainings for teachers in noise and vibration engineering	SPO1-3	annual 2021-
Provision of the project outputs (including curricula of courses and teaching materials) in noise and vibration engineering to Serbian universities not included in SENVIBE project	SPO1	annual 2021-
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	SPO2	annual 2021-
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Risk Assessment	SPO2	annual 2021-
Organization of courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	SPO2	annual 2021-
Organization of courses in Environmental & Occupational Noise and Human Vibration Risk Assessment	SPO2	annual 2021-
Promotion campaign for MSc programme in Noise and Vibrations at UNS	SPO3	annual 2021-
Preparing applications for projects of academic mobility	SPO4	biannual 2021-
Preparing application for projects of common study programmes	SPO4	biannual 2021-
Accreditation of new and modernized courses in noise and vibrations in study program of: <ul style="list-style-type: none"> • Electrical Engineering • Environment Protection Engineering • Mechanical Engineering • Occupational Safety • Civil Engineering • Traffic Engineering 	SPO1	2027
Accreditation of the MSc programme in Noise and Vibrations at UNS	SPO3	2027

Table 5: Activities of UNS on provision of sustainability to the SENVIBE project results

P2. Kungliga Tekniska Högskolan, Stockholm, Sweden (KTH):

As a high-level academic institution with broad competence, KTH University will provide support to further training and education of teachers of Serbian academic partners. The increased competence of the teachers will contribute to increased quality of the MSc programme in VAE at University of Novi Sad, which is being developed within the project, but also to increased quality of new and improved courses for students of the engineering departments of all Serbian academic partners, thus contributing to the sustainability of the SPO1 and SPO3. The training and education will be sought for in the forms of research projects, education projects and post-doctoral studies.

The KTH University will also provide updates on development of the concepts and contents of the LLL courses it provides, which will influence the development of the concepts and contents of the LLL courses for professionals in VAE, thus contributing to the SPO2 of the project.

Finally, KTH University will remain open to the participation in actions and projects of the No&Vib Hub, thus contributing to the sustainability of the SPO4. The participation may range from the advisory role to the participation in the national and international projects that imply multi-national partnerships.

A list of the activities of the KTH, ordered by timeframe, which will contribute to the sustainability of the SENVIBE project is given in the Table 6.

Description	Subject	Timeframe
Keeping the link to the SENVIBE website at websites of project partners	SPO1-4	permanent 2021-
Organization of trainings for teachers in noise and vibration engineering	SPO1-3	annual 2021-
Preparing applications for projects of academic mobility	SPO4	biannual 2021-
Preparing application for projects of common study programmes	SPO4	biannual 2021-

Table 6: Activities of KTH on provision of sustainability to the SENVIBE project results

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 timeframe of the project. Collaboration might cover either or both education and research projects.

A list of the activities of the ISVR, ordered by timeframe, that will contribute to the sustainability of the SENVIBE project is given in the Table 7.

Description	Subject	Timeframe
Keeping the link to the SENVIBE website at websites of project partners	SPO1-4	permanent 2021-
Organization of trainings for teachers in noise and vibration engineering	SPO1-3	annual 2021-
Preparing applications for projects of academic mobility	SPO4	biannual 2021-
Preparing application for projects of common study programmes	SPO4	biannual 2021-

Table 7: Activities of ISVR on provision of sustainability to the SENVIBE project results

P4. University of Niš (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 internship;
- realization of research activities in No&Vib fields.

A list of the activities of the University of Niš, ordered by timeframe, that will contribute to the sustainability of the SENVIBE project is given in the Table 8.

Description	Subject	Timeframe
Keeping the link to the SENVIBE website at websites of project partners	SPO1-4	permanent 2021-
Lecturing the courses <ul style="list-style-type: none"> • "Noise and Vibrations" at study programme of Occupational Safety Engineering and short modules on subjects <ul style="list-style-type: none"> • Physics at study programme of Occupational Hazard • Physics at study programme of Environment Protection • Physics at study programme of Fire Protection 	SPO1	2020-2027
Development of new and modernized courses in noise and vibrations in study program of Occupational Safety	SPO1	permanent 2021-
Increasing the number of participants of the No&Vib Hub	SPO4	permanent 2021-
Organization of trainings for teachers in noise and vibration engineering	SPO1-2	annual 2021-
Provision of the project outputs (including curricula of courses and teaching materials) in noise and vibration engineering to Serbian universities not included in SENVIBE project	SPO1	annual 2021-
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	SPO2	annual 2021-
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Risk Assessment	SPO2	annual 2021-
Organization of courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	SPO2	annual 2021-
Organization of courses in Environmental & Occupational Noise and Human Vibration Risk Assessment	SPO2	annual 2021-
Preparing applications for projects of academic mobility	SPO3	biannual 2021-
Accreditation of new and modernized courses in noise and vibrations in study program of Occupational Safety	SPO1	2027
Organization of the international conference "Noise and Vibrations"	SPO1-4	biannual from 2022

Table 8: Activities of UNI on provision of sustainability to the SENVIBE project results

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.

A list of the activities of the University of Kragujevac, ordered by timeframe, that will contribute to the sustainability of the SENVIBE project is given in the Table 9.

Description	Subject	Timeframe
Keeping the link to the SENVIBE website at websites of project partners	SPO1-4	permanent 2021-
Lecturing the course <ul style="list-style-type: none"> • "Noise and vibration protection" at study programme of Civil Engineering and short module on subject 	SPO1	2020-2022

Description	Subject	Timeframe
<ul style="list-style-type: none"> “Engineering Physics” at study programme of Civil Engineering 		
Lecturing the courses <ul style="list-style-type: none"> “Maintenance and diagnostics” at study programme of Mechanical Engineering “Noise and vibration protection” at study programme of Mechanical Engineering “Noise and Vibrations” at study programme of Environment Protection Engineering and short module on subject <ul style="list-style-type: none"> “Physics” at study programme of Mechanical Engineering 	SPO1	2020-2027
Development of new and modernized courses in noise and vibrations in study program of Civil Engineering	SPO1	permanent 2021-
Development of new and modernized courses in Noise and Vibrations in study program of Mechanical Engineering	SPO1	permanent 2021-
Increasing the number of participants of the No&Vib Hub	SPO4	permanent 2021-
Organization of trainings for teachers in noise and vibration engineering	SPO1-2	annual 2021-
Provision of the project outputs (including curricula of courses and teaching materials) in noise and vibration engineering to Serbian universities not included in SENViBE project	SPO1	annual 2021-
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	SPO2	annual 2021-
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Risk Assessment	SPO2	annual 2021-
Organization of courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	SPO2	annual 2021-
Preparing applications for projects of academic mobility	SPO3	biannual 2021-
Accreditation of new and modernized courses in noise and vibrations in study program of Civil Engineering	SPO1	2022
Accreditation of new and modernized courses in Noise and Vibrations in study program of Mechanical Engineering	SPO1	2027

Table 9: Activities of UniKg on provision of sustainability to the SENViBE project results

P6. EDUCONS University, Sremska Kamenica (UESK):

The EDUCONS University will make the modernized course of the subject “Environmental monitoring” and the new course “Environmental noise and vibration” a part of the accredited curricula of the Faculty for Environmental Protection. The accreditation will ensure that the subjects will be run after the project is completed, thus providing the

sustainability to the SPO1. The equipment purchased in course of the project will be used for development of laboratory and field exercises which will be mandatory for all students of the Environmental Protection.

The teachers of the Faculty for Environment Protection will contribute to the implementation of the courses for environmental protection professionals as lecturers according to their expertise, which will contribute to the sustainability of the SPO2. An important reason for participation in the courses is expansion of the network of industrial partners that facilitates placements of students in companies for internships.

The EDUCONS University will become a member of the No&Vib hub, as it wants to participate in the network of institutions who want to improve state of environment in Serbia. Furthermore, it will expand the No&Vib hub with the pool of companies that have signed agreements and cooperate with the EDUCONS University on an institutionalized basis, thus contributing to the SPO4. The basis of the strong interest of the university in the work of the No&Vib Hub is lack of experience and capacity for realization of large national and international projects. The expectations of the university are that the participation in the No&Vib hub will increase its visibility and capacity to create join consortia for carrying out educational and scientific projects, as well as social development projects and projects that rise awareness about topics of environment noise mitigation.

A list of the activities of the UESK, ordered by timeframe, that will contribute to the sustainability of the SENViBE project is given in the Table 10.

Description	Subject	Timeframe
Keeping the link to the SENViBE website at websites of project partners	SPO1-4	permanent 2021-
Lecturing the courses <ul style="list-style-type: none"> • "Environmental Monitoring" at study programme of Environmental Protection • "Environmental noise and vibration" at study programme of Environmental Protection 	SPO1	2022-2029
Development of new and modernized courses in Noise and Vibrations in study program of Environmental Protection	SPO1	permanent 2021-
Increasing the number of participants of the No&Vib Hub	SPO4	permanent 2021-
Organization of trainings for teachers in noise and vibration engineering	SPO1-2	annual 2021-
Provision of the project outputs (including curricula of courses and teaching materials) in noise and vibration engineering to Serbian universities not included in SENViBE project	SPO1	annual 2021-

Description	Subject	Timeframe
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	SPO2	annual 2021-
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Risk Assessment	SPO2	annual 2021-
Preparing applications for projects of academic mobility	SPO3	biannual 2021-
Accreditation of new and modernized courses in Noise and Vibrations in study program of Environmental Protection	SPO1	2027

Table 10: Activities of UESK on provision of sustainability to the SENViBE project results

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 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.

A list of the activities of the SUPEP, ordered by timeframe, that will contribute to the sustainability of the SENViBE project is given in the Table 11.

Description	Subject	Timeframe
Keeping the link to the SENViBE website at websites of project partners	SPO1-4	permanent 2021-
Increasing the number of participants of the No&Vib Hub	SPO4	permanent 2021-
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	SPO2	annual 2021-
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Risk Assessment	SPO2	annual 2021-

Table 11: Activities of SUPEP on provision of sustainability to the SENViBE project results

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.

A list of the activities of the UPV, ordered by timeframe, that will contribute to the sustainability of the SENViBE project is given in the Table 12.

Description	Subject	Timeframe
Keeping the link to the SENVIBE website at websites of project partners	SPO1-4	permanent 2021-
Increasing the number of participants of the No&Vib Hub	SPO4	permanent 2021-
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	SPO2	annual 2021-
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Risk Assessment	SPO2	annual 2021-

Table 12: Activities of UPV on provision of sustainability to the SENVIBE project results

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). IOH assumes that the list of stakeholders will provide more attendees for LLL courses in these six and more regions of Serbia.

A list of the activities of the IOH, ordered by timeframe, that will contribute to the sustainability of the SENVIBE project is given in the Table 13.

Description	Subject	Timeframe
Keeping the link to the SENVIBE website at websites of project partners	SPO1-4	permanent 2021-
Increasing the number of participants of the No&Vib Hub	SPO4	permanent 2021-
Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	SPO2	annual 2021-
Organization of courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	SPO2	annual 2021-

Table 13: Activities of IOH on provision of sustainability to the SENVIBE project results

No&Vib Hub

The No&Vib Hub represents by itself the SPO4 of the project, but its essential aim is to substantially support the organization sustainability to the SENVIBE project results. After the completion of the project the No&Vib Hib will coordinate the work of project partners and stakeholders on exploitation, maintenance, development and promotion of the SENVIBE project. Apart from that, the No&Vib Hub will perform the vital duty of maintaining the stakeholders list and measurement of KPIs of the sustainability of the SENVIBE project results.

A list of the activities of the University of Novi Sad, ordered by timeframe, that will contribute to the sustainability of the SENVIBE project is given in the Table 14.

Description	Subject	Timeframe
Availability of the SENVIBE website	SPO1-4	permanent 2021-
Updating of the stakeholders list	SPO1-4	permanent 2021-
Increasing the number of participants of the No&Vib Hub	SPO4	permanent 2021-
Preparing project applications for projects in field of noise and vibrations protection	SPO4	permanent 2021-
Measurement of the KPIs	SPO1-4	annual 2021-
Provision of the project outputs (including curricula of courses and teaching materials) in noise and vibration engineering to Serbian universities not included in SENVIBE project	SPO1	annual 2021-
TBD: Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	SPO2	annual 2021-
TBD: Promotion campaign for courses in Environmental & Occupational Noise and Human Vibration Risk Assessment	SPO2	annual 2021-
Organization of courses in Environmental & Occupational Noise and Human Vibration Measurement and Control	SPO2	annual 2021-
Organization of courses in Environmental & Occupational Noise and Human Vibration Risk Assessment	SPO2	annual 2021-

Table 14: Activities of No&Vib Hub on provision of sustainability to the SENVIBE project results

5. Annexes

5.1. No&Vib agreements

The template of the agreement

The following text presents an un-official translation of the template of the Agreement on the establishment of the common virtual platform for cooperation in the field of noise and vibration, provided only as the information of the interested readers. The template provides the basis for the agreements between the UNS and parties interested in joining the work of the No&Vib Hub, and the original text is in Serbian language.

AGREEMENT ON THE ESTABLISHMENT OF THE COMMON VIRTUAL PLATFORM FOR COOPERATION IN THE FIELD OF NOISE AND VIBRATION

Contracted on /the date/ in Novi Sad between:

1. of the University of Novi Sad, Dr. Zoran Djindjica 1, Novi Sad, PIB: 101636534, represented by prof. Dr. Dejan Jaksic, Rector of the University and
2. /Name of the legal entity/, /address/, /VAT number/, /legal representative/
hereinafter referred to as Subjects of the Agreement.

INTRODUCTION

The agreement on the establishment of the virtual platform for cooperation in the field of protection of the environment and health from the harmful effects of noise and vibration (hereinafter: the Agreement) is one of the instruments for establishing of a common virtual platform for cooperation (hereinafter referred to as "No&Vib Hub") between the academic and non-academic institutions established by the state, the education and science sector, the business sector, the noise and vibrations experts and professionals, and the non-government sector, with the aim to improve educational capacities and raise awareness of the wider community about the noise and vibration in living and work environment.

"No&Vib Hub" is initiated within the framework of the project "SENVIBE", standing as the acronym for "Strengthening Educational Capacities by Building Competences and Cooperation in the Field of Noise and Vibration Engineering", which realized within the Erasmus+ program as project with reference number 598241-EPP-1-2018-1-RS-EPPKA2-CBHE-JP. The basis of this project is the strategic improvement of educational capacities and cooperation in the field of noise and vibration, and the Provincial Secretariat for Urbanism and Environmental Protection is the leading partner for implementation of the work package WP6 entitled "Establishment of the "No & Vib Hub". This work package aims to establish a common virtual platform for collaboration in the field of noise and vibration, and this Agreement is the first step towards this goal.

The work package WP6 will be implemented over a two-year period through the following activities: definition of a framework for cooperation of stakeholders, specification of the program and services for students and the wider community, definition of the "No&Vib Hub" and establishment the "No&Vib Hub".

The participation of the Entities in this Agreement shall not prevent or restrict them from entering into mutual agreements, contracts or any other legal acts in the field of noise and vibration.

SUBJECT MATTER AND THE OBJECTIVE OF THE AGREEMENT

The subject of this Agreement is the establishment of a common virtual platform for cooperation in the field of noise and vibration, which aims to promote and encourage the exchange of professional and practical knowledge and experience, as well as to improve the management and execution of cooperation between the business sector and higher education in the field of protection of living and working environment from the harmful effects of noise and vibration through linking the academic and non-academic sectors, as well as through development and raising of public awareness about the harmful effects of noise and vibration in the living and working environment through synergy of their capacities.

The prerequisite for accomplishment if this goal is to make the general public aware of the subject matter of this Agreement through activities of targeted campaigns and development of promotional/educational materials. In principle, a conscientious, responsible and committed approach by the Subjects of the Agreement is necessary to create the conditions for fulfilling the objective of the Agreement.

The mission of No&Vib Hub includes the development of effective mechanisms for cooperation through the implementation of student internship programs, student scholarship programs by industrial companies, joint projects (including defining practical topics for master's thesis), monitoring and reform of legislation, development and implementation of vocational training, rapid dissemination of activities and exchange of information/knowledge on relevant legislation, monitoring results, etc.

No&Vib Hub will continue to exist and bring together all stakeholders in the joint tasks set out in this Agreement even after the completion of the Erasmus+ project SENVIbE project, with the aim of improving the existing noise and vibration situation in Serbia.

RIGHTS AND OBLIGATIONS OF THE SUBJECT OF THE AGREEMENT

Article 1.

Each Subject of the Agreement is obliged to appoint a professional and qualified person as the contact person which will register her/himself on the SENVIbE portal, at the link <https://SENVIBE.uns.ac.rs/registracija-kontakt-osobe-subjekta-sporazuma-zapridruzivanje-novib-hub-u/>.

The person referred to in paragraph 1 shall attend the meetings of the No&Vib Hub, participate in the work as the representative of the Subject who appointed him and participate in the exchange of information and experiences relevant to the accomplishment of the goal of the Agreement.

The appointed person may be replaced by another person appointed by the same Subject, which is to be followed by the mandatory update the information on the SENVIBE portal.

Article 2.

The Subjects of the Agreement are obliged to:

1. realize the practical work of engineering students of different study programmes in solving problems in companies in the field of noise and vibration (student practice and master works in the field of vibro-acoustics),

2. contribute to capacity building in the field of noise and vibration through the education/training of professional staff,

3. define, analyse, make proposals and participate in solving local problems in the field of noise and vibration,

4. exchange information, knowledge and practical experience in the field of noise and vibration,

5. encourage institutional integration and strengthen cooperation between noise and vibration sectors (environment, health, industry, transport...)

6. raise public awareness and better inform citizens about the harmful effects of noise and vibration in the living and working environment,

7. realize joint projects in the field of noise and vibration with consideration of the possibility of using different sources of financing of these projects and

8. establish multiple contacts with the general public through advisory and expert services.

All Subjects of the Agreement are obliged to ensure smooth cooperation after the completion of the Erasmus+ project SENVIBE in order to provide the sustainability of its objectives.

ESTABLISHING AND MONITORING THE IMPLEMENTATION OF THE AGREEMENT

Article 3

"No&Vib Hub" is being established at the University of Novi Sad, its activities will be implemented on the territory of the Republic of Serbia and will be followed by promotional activities and campaigns. Within these activities will be developed common mechanisms to ensure the long-term sustainability of the No&Vib Hub platform.

In order to more effectively perform the activities that will lead to accomplishment of the goal of the Agreement, to coordinate the work and monitor

the implementation of this Agreement, the University of Novi Sad is establishing a Coordination Board, consisting of one representative of each of the "SENVIBE" project partners from Serbia.

The partners of this project from Serbia are University of Novi Sad, University of Niš, University of Kragujevac, University Educons, Provincial Secretariat for Urbanism and Environmental Protection, Union of Employers of Vojvodina and Institute for Occupational Health from Novi Sad.

The work of the Coordination Body is coordinated by prof. Ivana Kovačić, PhD, the Coordinator of the SENVIBE Project (hereinafter: the Head of the Coordination Board).

The Coordination Board will meet regularly, at least once a year, as well as needed, with a goal to timely exchange the information on all planned and implemented activities.

Any new entity that wants to join the work of No&Vib Hub platform needs to complete an online application using the SENVIBE project website. The request of a new entity to join the No&Vib Hub is considered by the Coordination Board. If the Coordination Board approves the affiliation of a new entity, the entity shall sign a separate Agreement with the University of Novi Sad, with the same rights and obligations as defined in this Agreement.

Article 4

The Coordination Board shall perform the following tasks:

- define the activities and roles of all participants in the No&Vib Hub platform and approve the access of new Entities to sign the Agreement,
- monitor the implementation of joint projects in the field of noise and vibration,
- discuss problems and identify suggestions and solutions to troubleshoot participants in the No&Vib Hub platform,
- defines proposals for possible amendments to the legislation in the field of noise and vibration and
- perform other tasks to accomplish the goals of this Agreement.

SPECIAL AGREEMENTS

Article 5

All issues not regulated by this Agreement, and deemed by the Subjects of the Agreement to be relevant and specific to them, may be settled by a separate

agreement between them, which aims to regulate more complex relations between the Subjects of the Agreement.

Article 6

The provisions of special agreements shall be consistent with the principles and purpose of this Agreement.

TRANSITIONAL AND FINAL PROVISIONS

Article 7

The agreement is valid for an indefinite period.

Either of the Subjects of the Agreement may terminate the Agreement, having the obligation to fulfil the obligations assumed by signing this Agreement within 30 days from the date of notification of termination of the Agreement to the Coordination Board.

Article 8

All disputes concerning the interpretation and implementation of the Agreement will be settled by compromise between the Subjects of the Agreement.

Article 9

The agreement is considered valid when signed by the Subjects of the Agreement.

Article 10

This Agreement is made in four (4) identical copies, two (2) copies for each Subject of the Agreement.

For the University of Novi Sad

/Name of the legal entity/

Prof Dejan Jakšić, Rector

/Legal representative/

List of signed agreements

Academic sector and education

	Title (original)	Title (English)	City
1.	Univerzitet u Nišu	University of Niš	Niš
2.	Univerzitet u Kragujevcu	University of Kragujevac	Kragujevac
3.	Univerzitet Edukons	University Edukons	Sremska Kamenica

4.	Fakultet za zaštitu na radu Niš	The Faculty of Occupational Hazard Niš	Niš
5.	Fakultet za mašinstvo i građevinarstvo u Kraljevu	The Faculty of Mechanical and Civil Engineering in Kraljevo	Kraljevo

Expert organizations

	Title (original)	Title (English)	City
1.	Institut za javno zdravlje Vojvodine	Institute for public health of Vojvodina	Novi Sad
2.	Institut za ispitivanje materijala a.d.	Institute for material testing Inc.	Belgrade
3.	JP "Zavod za urbanizam Vojvodine"	Public company "Bureau for urbanism of Vojvodina"	Novi Sad
4.	Zavod za javno zdravlje Kruševac	Institute for Public Health	Kruševac
5.	Gradski zavod za javno zdravlje, Beograd	The City Institute for Public Health	Belgrade
6.	Zavod za javno zdravlje Novi Sad	Institute for Public Health	Novi Sad

Commercial sector

	Title (original)	Title (English)	City
1.	Unija poslodavaca Rume	Union of employers of Ruma	Ruma
2.	Unipromet d.o.o.	Unipromet Ltd.	Čačak
3.	Monbat PLC d.o.o.	Monbat PLC Ltd.	Indija
4.	Institut za bezbednost i sigurnost na radu d.o.o.	Institute for occupational health and safety Ltd.	Novi Sad
5.	Lafarge Beočinska fabrika cementa d.o.o.	Lafarge Beočin cement factory Ltd.	Beočin
6.	Javno urbanističko preduzeće „Plan“	Public company for urbanism "Plan"	Ruma
7.	Ekologica Urbo d.o.o.	Ekologica Urbo Ltd.	Kragujevac
8.	Unija poslodavaca Vojvodine, Novi Sad	Union of employers of Vojvodina	Novi Sad
9.	Unija poslodavaca Srbije – Poslodavci Zrenjanina	Union of employers of Serbia – employers of Zrenjanin	Zrenjanin
10.	Unija poslodavaca Grada Pančeva	Union of employers of city of Pančevo	Pančevo
11.	Greentech d.o.o.	Greentech Ltd.	Novi Sad
12.	Privredna komora Vojvodine	Chamber of Commerce of Vojvodina	Novi Sad
13.	METALFER STEEL MILL DOO, Sremska Mitrovica	METALFER STEEL MILL Ltd.	Sremska Mitrovica

14.	Institut za kvalitet radne i životne sredine „1. maj“ D.O.O.	Institute for quality of the working and living environment “1.May” Ltd.	Niš
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Government sector

	Title (original)	Title (English)	City
1.	Pokrajinski sekretarijat za urbanizam i zaštitu životne sredine, Novi Sad	Provincial secretariat for urbanism and environment protection	Novi Sad
2.	Grad Kraljevo	City of Kraljevo	Kraljevo
3.	Grad Sombor	City of Sombor	Sombor
4.	Grad Subotica	City of Subotica	Subotica
5.	Opština Sečanj	Municipality of Sečanj	Sečanj
6.	Opština Čoka	Municipality of Čoka	Čoka
7.	Opština Žitište	Municipality of Žitište	Žitište
8.	Opština Bačka Palanka	Municipality of Bačka Palanka	Bačka Palanka
9.	Opštinska uprava Bački Petrovac	Municipal administration of Bački Petrovac	Bački Petrovac

Non-government organizations

	Title (original)	Title (English)	City
1.	Evropski pokretu Srbiji – Kraljevo	European Movement in Serbia – Kraljevo	Kraljevo
2.	Udruženje „Institut za održivi razvoj i zaštitu životne sredine Zeleni krug“, Novi Sad	Association “Institute for sustainable development and environment protection Green circle”	Novi Sad
3.	Udruženje građana „Zeleni ključ“, Niš	Association of citizens “Green Key”	Niš
4.	Centar za unapređenje životne sredine, Beograd	Environment Improvement Centre	Belgrade
5.	Udruženje „Inženjeri zaštite životne sredine“	Association „Environment protection engineers“	Novi Sad

5.2. Declaration on provision of sustainability to the virtual platform for collaboration in the field of noise and vibrations

The following text presents an un-official translation of the Declaration on provision of the virtual platform for collaboration in the field of noise and vibrations, provided only as the information of the interested readers. The Declaration specifies the obligations of the University of Novi Sad, as one party, and prof. Ivana Kovačić, acting as the SENVI BE project coordinator and coordinator of the Coordination Body of the No&Vib Hub, as

the other party of the agreement, with respect to the work of the No&Vib Hub. The original text of the document is in Serbian language.

University in Novi Sad
Dr. Zorana Đinđića 1, Novi Sad
Prof. Dr. Dejan Jakšić, Rector

DECLARATION

Subject: Declaration on provision of the sustainability to the virtual platform for collaboration in the field of noise and vibration

As a part of the Erasmus+ SENVIBE project, which is the acronym for "Strengthening Educational Capacities by Building Competencies and Cooperation in the Field of Noise and Vibration Engineering", project reference number: 598241-EPP-1-2018-1-RS-EPPKA2-CBHE-JP, the "Agreement on the formation of a virtual platform for cooperation in the field of environment and health protection from the harmful effects of noise and vibration" is signed with various legal entities acting in these areas. The agreement is one of the instruments for establishing a common virtual platform for collaboration (hereinafter referred to as the "No&Vib Hub") between academic and non-academic institutions in the educational, scientific, government, economic, professional and non-governmental sectors to enhance educational capacities and to raise awareness of the community as whole about the noise and vibration problems in the living and working environment.

The mission of No&Vib Hub includes the development of effective mechanisms for cooperation through the implementation of student internship programs, student scholarship programs by industrial companies, joint projects (including defining practical topics for master's thesis), monitoring and reform of legislation, development and implementation of vocational training, rapid expansion of activities and exchange of information/knowledge on relevant legislation, monitoring results, etc.

No&Vib Hub will continue to exist and bring together all interested parties in the common tasks set out in the Agreement and after the completion of the Erasmus + SENVIBEs project, with the aim of improving the present state of noise and vibration protection in Serbia.

In order to more effectively carry out activities to achieve the goal of the Agreement, coordinate its work and monitor the implementation of the Agreement, the University of Novi Sad will establish a Coordination Body, consisting of one representative of each Erasmus + "SENVIBE" project partner from Serbia.

The work of the Coordination Body will be coordinated by prof. Ivana Kovačić, PhD, the Coordinator of Erasmus + SENVIBE Project.

Prof. Ivana Kovačić will, as Head of the Centre for Vibro-Acoustic Systems and Signal Processing at CEVAS at the Faculty of Technical Sciences, assume all financial and technical-organizational obligations of maintaining the virtual platform for cooperation in the field of noise and vibration, after the completion of the SENVIBE project. These activities will ensure the sustainability and smooth functioning of the virtual platform.

In case of failure to comply with the obligations assumed by this Declaration, the University of Novi Sad will notify prof. Ivana Kovačić in written form. If the said obligations are not fulfilled within three months of sending of the notification, the University of Novi Sad has the right to deactivate the virtual platform.

In Novi Sad, January 8, 2019.

Prof. Ivana Kovačić, PhD

5.3. Declarations on use of the project results

---TO BE COMPLETED---

Prepared/Compiled by Zlatan Soskic based on the contributions from Ivana Kovačić, Hans Boden, Neil Fergusson, Miomir Raos, Mirjana Pucarević, Branislava Đukić, Zorana Georgijev and Milorad Španović

Kraljevo, 24/03/2021

Approved by the Quality Assurance Group Leader, Name and Surname

Sremska Kamenica, 24/03/2021

Approved by Steering Committee

Web-based meeting, 07/5/2021

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