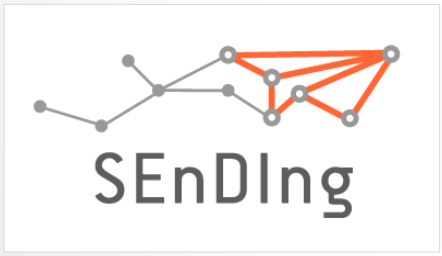

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SEnDIng

D6.4

IMPACT EVALUATION METHODOLOGY

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SEnDIng

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Delivery Slip

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PROJECT SUMMARY

SEnDIng project aims to address the skills' gap of Data Scientists and Internet of Things engineers that has been identified at the ICT and other sectors (e.g. banking and energy) at which Data Science and Internet of Things have broad applications. To achieve this goal, SEnDIng will develop and deliver to the two aforementioned ICT-related occupational profiles two learning outcome-oriented modular VET programmes using innovative teaching and training delivery methodologies.

Each VET program will be provided to employed ICT professionals into three phases that include: (a) 100 hours of on-line asynchronous training, (b) 20 hours of face-to-face training and (c) 4 months of work-based learning. A certification mechanism will be designed and used for the certification of the skills provided to the trainees of the two vocational programs, while recommendations will be outlined for validation, certification & accreditation of provided VET programs.

Furthermore, SEnDIng will define a reference model for the vocational skills, e-competences and qualifications of the targeted occupational profiles that will be compliant with the European eCompetence Framework (eCF) and the ESCO IT occupations, ensuring transparency, comparability and transferability between European countries.

Various dissemination activities will be performed – including the organization of one workshop at Greece, Bulgaria and Cyprus and one additional conference at Greece at the last month of the project – in order to effectively disseminate project's activities and outcomes to the target groups and all stakeholders. Finally, a set of exploitation tools will be developed, giving guides to stakeholders and especially companies and VET providers, on how they can exploit project's results.

Table of Contents

1 Introduction

1.1 Objectives

The scope of the deliverable is to develop and describe the overall methodology for the evaluation of the SEnDIng project impact. It specifies steps and instruments necessary for performing this evaluation. Specific indicators will be used, qualitative and quantitative data will be analyzed derived indicatively from questionnaires, interviews, and other primary or secondary data if available. Each partner should apply the impact evaluation methodology based on national data and its assigned role and tasks in the project. The impact evaluations carried out by each partner will be collated and presented at the final evaluation report of the project.

The World Bank defines impact evaluation as follows: An impact evaluation assesses changes in the well-being of individuals, households, communities or firms that can be attributed to a particular project, program or policy. The central impact evaluation question is what would have happened to those receiving the intervention if they had not in fact received the program (World Bank, 2008).

Emphasis will be given at the evaluation of learners progress after the completion of the vocational trainings in order to provide 'feedback loops'. For evaluation purposes, a tracking and feedback framework will be built using information from the ICT companies involved in the project and the learners.

The Impact Evaluation plan is a living document that will be updated in accordance with the findings and intermediate results achieved at the different stages of the project implementation. Corrective actions will be proposed, considered and performed if needed in order to improve the impact evaluation methodology.

1.2 Dependencies with other WPs and deliverables

The work of the SEnDIng project is divided into the following 7 work packages:

- WP1: Project management and coordination;
- WP2: Learning outcomes identification and design of vocational curricula/educational modules and training/assessment methodology;
- WP3: Implementation of training material;
- WP4: Implementation of skills certification mechanism;
- WP5: Design of e-learning platform and delivery of vocational trainings;
- WP6: Quality assurance and evaluation of the project;
- WP7: Dissemination and Exploitation.

Work Packages 1, 6 and 7 constitute horizontal activities concerning Project management and coordination (WP1), Quality assurance and evaluation (WP6) and Dissemination and Exploitation (WP7). A specific Work package (WP6) is allocated to deal with quality assurance and evaluation of project's work.

This document aims to provide methods, tools and techniques for the measurement of the impact of the tasks completed in WP2, WP3, WP4, WP5 and WP7 as well as for the assessment of the effectiveness of the whole approach of the SEnDIng project to all beneficiaries, partners and stakeholders.

All partners have the overall responsibility for the evaluation of the project delivery. Each partner in cooperation with BASSCOM will plan and align impact assessment activities relevant to the specific tasks and the corresponding deliverables of work packages WP2, WP3, WP4, WP5 and WP7.

2 Target groups and expected impact

2.1 Target groups

The target groups of the project are the following:

- **Trainees** who will mainly be ICT professionals and more specific Data Scientists and Internet of Things engineers who work at the ICT sector, and other economic sectors presenting demand for high qualified Data Scientists and Internet of Things specialists (e.g. banking, insurance, energy);
- **Companies** coming from the ICT sector and other sectors, that employ ICT professionals who will participate in the VET programs;
- **VET providers**, both public and private VET institutions and companies that supply VET and related services;
- **Higher education institutes** (HEIs);
- **Partners of SEnDIng project**;
- **Trainers** from HEIs and VET providers, as well trainers from companies providing the work based learning environment;
- **Other stakeholders** (Policy makers, European authorities, others).

2.2 Expected impact on the target groups

The project is expected to have the following impact on:

1. ICT professionals and enterprises:

- Training in skills and competences that are more tailored to the needs of ICT learners and industry based on a learning outcomes oriented vocational curricula;

- Up-skilling of ICT professionals and especially Data Scientists and IoT engineers in order to meet new challenges in the work field;
- Free access to learning opportunities and training methodologies for ICT businesses that lack training facilities and departments;
- Reduced training expenses for ICT businesses due to the free access to the VET programs;
- More interactive learning opportunities via the use of new teaching and learning technologies for learners;
- Development of a more aware and flexible mind-set amongst ICT professionals.

2. The organizations participating in the consortium as a whole and stakeholders:

- International cooperation with like-minded organizations involved in the European VET ecosystem;
- Creation of collaboration networks between different parties (VET providers, HEIs, enterprises) through a structured set of tools and procedures;
- Development of a learning network within a transnational context;
- Strengthening the interconnection between higher education institutes, business world and vocational education and training, creating the conditions for an all-around, up-to-date vocational education and training of ICT specialists in targeted occupational profiles;
- Development and exploitation of new forms of learning via the use of new teaching and learning technologies.

3. The ICT sector (and other sectors where Data Science and IoT have broad applications) at local, regional, national, European and/or International level:

- Better matching between labor workforce supply and demand in the ICT sector and other sectors where Data Science and Internet of Things have broad applications;
- Intra-EU labor geographic mobility through a commonality of Data Scientists and IoT engineers skills' and competences' development;
- More attractive opportunities for vocational education and training in ICT sector at a pan-European level;
- More cohesive society through increased opportunities for mobility and professional development;
- Enhanced productivity, innovation, competitiveness and growth potential in the European ICT sector;
- Ability of ICT professionals throughout Europe to respond to the needs of different ICT markets and other sectors like banking, insurance and energy.

3 Indicators

3.1 Indicators included in the proposal

In the present section, are outlined all the quantitative and qualitative indicators defined during proposal's preparation. These indicators will be used for evaluating the project impact and the extent to which the project achieved its objectives.

The major measurable indicators that will be used are the following:

- Number of curricula produced;
- Number of educational modules produced;
- Number of open educational resources produced;
- Hours of online asynchronous training provided;
- Hours of face to face training provided;
- Hours of work based learning provided;
- Number of trainees participated in the vocational trainings;
- Number of companies participated in the vocational trainings;
- Number of participants in the workshops;
- Number of participants in the final conference;
- Number of exploitation toolkits designed;
- Number of (electronic and hardcopy) dissemination material (newsletters, poster, flyers, banners) produced.

Also the following indicators will be used to evaluate whether and to what extent, the project reaches its objectives and results:

- At least 150 employees participated in the VET programs;
- At least 20 companies participated in the VET programs;
- At least 10 educational modules created;
- At least 5 companies participated in the VET programs coming from economy's sectors other than ICT sector;
- 100 hours of face to face training per employee;
- 20 hours of e-learning training per employee;
- 4 months of work based learning.

In addition, the quantitative and qualitative indicators depicted at the following two tables have been defined during proposal writing and will be used for measuring the short- and long-term project results.

Short term results	Target groups/potential beneficiaries	Quantitative indicators	Qualitative indicators
Elimination of skills' gap through the delivery of VET programmes	ICT professionals ICT companies Other sector companies (e.g. banking, energy)	Number of skills	Kind of skills
VET programs that meet the real needs of market	ICT professionals ICT companies Other sector companies (e.g. banking, energy) VET providers Higher Education Institutes	Number of curricula Number of educational modules Number of training hours	Quality of training material
Collaboration network between main stakeholders	Higher Education Institutes Companies VET providers Associations Certification organizations	Number of participants at the network	Activities of the collaboration network

Long term outcomes	Target groups/potential beneficiaries	Quantitative indicators	Qualitative indicators
Access to open training infrastructure	ICT professionals ICT companies Other sector companies (e.g. banking, energy)	Number of training hours	Availability of e-learning platform Reliability of e-learning platform

Enhanced productivity of trained ICT professionals	ICT professionals ICT companies Other sector companies (e.g. banking, energy	Productivity as measured within the company	Quality of services as measured outside the company
Increased mobility of ICT professionals	ICT professionals	Number of mobilities	Sub sectors
Recognition of skills provided	ICT professionals	Number of countries that has included the skills at their National Qualification Frameworks	Type of skills recognized

3.2 Additional indicators identified during the project implementation phase

Except from the indicators described in Section 3.1, the additional indicators that will be utilized for measuring project impact are described at Annex 1.

4 Evaluation tools

In order to ensure the proper measurement of the SEnDIng project impact, the following evaluations tools will be used:

- Surveys and Questionnaires;
- Interviews;
- Impact evaluation reports from project partners and WP leaders;
- Checklists;
- Observation.

4.1 Surveys and questionnaires

Questionnaire is a systematic, data collection technique consisting of a series of questions required to be answered by the respondents to identify their attitude, experience, and behavior towards the subject of research.

One of the most critical parts of a survey is the creation of questions that must be framed in such a way that it results in obtaining the desired information from the respondents. There are no scientific principles that assure an ideal questionnaire and in fact, the questionnaire design is the skill which is learned through experience.

Below are described in detail the survey method process, author role and stakeholders.

Survey method process

1. Decide what you want to know and how you will analyze the data before you develop questions.
2. Look for questions or ideas from other sources to inspire the writing of your method.
3. Write questions to be as specific as possible. Use simple, straightforward language. Avoid the use of terminology specific to a few people and related to the project specifics.
4. Write short questions to ensure reader understanding, including:
   - Limit the number of questions, so people are focused;
   - Ask the questions in the most appropriate moment when the target groups have fresh outlook on the research topic;
   - Limit the number of choices available to a question to five or less (if applicable);
   - Offer a "don't know" or "no opinion" option, so people do not invent answers;
   - Vary the format of the questions to keep people interested.

5. When you have written the survey questions, it is important to test them to make sure that the language is current, the questions are not biased, and the questions are relevant to the purpose of the survey. Deliver the set of questions to the stakeholder for their response. Provide a date by which the answers are to be returned.

Author role

The author of the survey is responsible for crafting questions to solicit the needs and requirements from stakeholders. Once the answers have been received, the author is responsible for recording them into a document for confirmation by the survey method respondents.

To develop a useful method, the writer should be familiar with the purpose of the evaluation and ideally have some experience with developing surveys.

Stakeholder

The stakeholder is responsible for answering the questions and verifying the resulting information presented by the author for confirmation.

Questionnaire Design Process

The following steps are involved in the questionnaire design process:

1. Specify the information needed;
2. Define the target respondent;
3. Specify the type of interviewing method;

4. Determine the content of individual questions;
5. Overcome respondent's inability and unwillingness to answer;
6. Decide on the question structure;
7. Determine the question wording;
8. Determine the order of questions;
9. Identify the form and layout;
10. Reproduction of questionnaire;
11. Pretesting.

4.2 Interviews

The Interview is the verbal conversation between two or more people (in groups) with the objective of collecting relevant information for the purpose of research and project needs. We plan to use this evaluation tool in the project, focused on project partners, target groups and stakeholders.

Group Interviews and Focus Groups

The recommended pattern for introducing the focus group discussion includes:

1. Welcome;
2. Overview of the topic;
3. Ground rules and
4. First question.

The following steps are recommended about how to conduct the focus groups:

1. Define the purpose;
2. Establish a timeline;
3. Identify and invite participants;
4. Generate the questions;
5. Select a facilitator;
6. Choose location;
7. Conduct the focus group;
8. Interpret and report results;
9. Translate the results into action.

Individual Interviews

Individual, face-to-face interviews are by far the most popular and efficient form of data collection and process assessment. A face-to-face interview method provides advantages over other data collection methods. They include:

- Accurate screening;

- Capture verbal and non-verbal questions;
- Keep focus;
- Capture emotions and behaviors.

There are a number of different types of interview formats e.g. structured, semi-structured or unstructured. The more unstructured the interview, the more it is expected that the main issues will emerge from the interviewer, rather than being imposed by the structure of the interview. These different interview formats are not mutually exclusive. It is possible to combine them effectively in an interview to be flexible and focused when it is appropriate.

4.3 Impact Evaluation report (template)

The template of the Impact Evaluation report that will be utilized is given at Annex 2.

5 Impact Evaluation Plan

As mentioned previously, the Impact Evaluation plan is a living document that will be updated in accordance with the findings and intermediate results achieved at the different stages of the project implementation. Corrective actions will be proposed, considered and performed if needed in order to maximize the expected project impact. All partners have the overall responsibility for the evaluation of the project implementation. Each partner should apply the impact evaluation methodology based on national data and should submit impact evaluation reports on a regular basis.

5.1 Main axes

In order to measure the impact of SEnDIng outputs and outcomes (WP2, WP3, WP4 and WP5) as well as of dissemination and exploitation activities (WP7) the project target groups are categorized into the following categories:

- Impact on trainees;
- Impact on trainers;
- Impact on companies' trainers (WBL);
- Impact on companies;
- Impact on VETs;
- Impact on partners staff;
- Impact on partners;
- Impact on other stakeholders.

5.2 Division of main tasks and responsibilities among project partners

The division of the main tasks and responsibilities within the partnership regarding the evaluation of project impact is the following:

- BASSCOM develops the Impact evaluation methodology (this deliverable) on project level;
- The Project coordinator and the work package leaders of WP2, WP3, WP4, WP5 and WP7 support BASSCOM in the development, implementation and further update (if needed) of the Impact evaluation methodology, within the scope of the respective work packages they are responsible for (including metrics, evaluation tools, planning, reporting, corrective actions etc.);
- The partnership reviews and approves the present deliverable;
- Each partner applies the Impact evaluation methodology in its country;
- Each partner summarizes and analyses the relevant data on a partner level and submits the Impact evaluation reports to the respective WP leaders (in M18 and M36);
- The WP leaders summarize and analyze the submitted data on a WP level and provide Impact evaluation reports to BASSCOM (in M18 and M36);
- BASSCOM supports the partners, aggregates results and consults partners for maximizing the impact of the project;
- BASSCOM incorporates the findings of the impact evaluation in the intermediate and final progress reports;
- Each partner can propose corrective actions, if needed, at any stage of the project implementation;
- BASSCOM in cooperation with relevant partners, when necessary, updates the Impact evaluation plan in order to align it with the project deliverables and intermediate results;
- The partnership should ensure collection of data and development of the "feedback loops" concerning the evaluation of the learners' progress.

5.3 Impact evaluation plan

The Impact evaluation plan combines the quantitative and qualitative indicators defined at the project design stage (summarized in section 3.1. of the present deliverable), along with those identified during the project implementation phase (described in section 3.2. of the present deliverable).

For more information please, see Annex 3.

6 REFERENCES

- http://ec.europa.eu/regional_policy/archive/policy/future/pdf/4_morton_final-formatted.pdf;
- http://ec.europa.eu/regional_policy/en/policy/evaluations/guidance/impact_faq_theor#1;
- https://businessjargons.com/questionnaire-design-process.html;
- https://www.snapsurveys.com/blog/advantages-disadvantages-facetoface-data-collection/

7 ABBREVIATION

BASSCOM	Sdruzenie Bulgarska Asociacia na Softuernite Kompanii BASCOM (Bulgarian Association of Software Companies), Bulgaria
CD	Code Runners, Bulgaria
D2.1	Deliverable (2.1)
DLV	Deliverable
EACEA	Education, Culture and Audiovisual Executive Agency, Belgium
e-CF	European e-Competence Framework
ESCO	European Skills, Competences, Qualifications and Occupations Classification
ESI CEE	"Software Institute - Center Eastern Europe", Bulgaria
GCS	Greek Computer Society, Greece
HEIs	Higher Education Institutes
ICT	Information and Communications Technologies
IT	Information Technologies
MIXANOGRAFIKI	MIXANOGRAFIKH EPE, Greece
NEME	Nemetschek OOD, Bulgaria
OTC	OLYMPIC Training & Consulting Ltd, Greece
UCY	University of Cyprus, Cyprus
ULS	Universal Learning Systems Ltd, Ireland
UNICERT	UNICERT Universal Certification Solutions, Greece
UPATRAS	University of Patras, Greece
VET	Vocational Education and Training
WBL	Work-based learning

WP(s)	Work Package(s)
YDW	Yodiwo AE, Greece

8 ANNEXES

8.1 Annex 1

Additional indicators identified during the project implementation phase

N of WP	Title of WP	Quantitative Indicators	Qualitative Indicators
2	Learning outcomes identification and design of vocational curricula /educational modules and training/ assessment methodology	1.1a. Number of surveys conducted	1.1b. Profile of participants (industry, size, profile)
		1.2a. Number of stakeholders involved in the surveys	1.2b. Profile of participants (industry, size, profile)
		1.3a. Number of interviews conducted	1.3b. Extensiveness of research for the development of the learning outcomes
		1.4a. Number of stakeholders involved in the interviews	1.4b. Correspondence of training modules with learning outcomes
		1.5a. Number of learning outcomes defined	-
		1.6a. Number of curricula produced	-

		1.7a. Number of educational modules produced	-
3	Implementation of training material	Not applicable	Not applicable
4	Implementation of skills certification mechanism	Not applicable	Not applicable
5	Design of e-learning platform and delivery of vocational trainings	2.1a. Number of participants in trainings	2.1a. Correspondence of the training material to the learning outcomes and needs in the field work
		2.2a. Number of participants in Data Science trainings	3.1b. Users profile (job, industry, professional experience)
		2.3a. Number of participants in IoT trainings	13.1b. Demand in the countries
		2.4a. Number of certified professionals	3.1b. Companies profile (industry, size, profile)
		3.1a. Number of registered users at the online courses	4.1b. Type of expenses reduced (travelling, trainers, preparation of training material)
		11.1a. Number of registered users at the online courses	5.1b. Individualization and adaptability to user needs

		11.2a. Number of participants in the trainings	5.2b. Interactive training material
		11.3 Number of exploitation toolkits downloads	5.3b. User satisfaction
		13.1a Number of mobilities	7.2b. Profile of 3rd party organization (type, size, country)
7	Dissemination and Exploitation	3.2b. Number of exploitation toolkits downloads	8.1b. Profile of the participants (type, size, country)
		4a. Reduce in expenses	9.1b. Profile of the participants (type, size, country)
		7.1a. Number of synergies established between the SENDING consortium and 3rd party organizations active in the VET field	10.1b. Profile of participants in the workshops
		8.1a. Number of participants in the collaboration network	10.2b. Profile of participants in the conference
		9.1a. Number of participants in the	1.3b. Profile of the companies (industry, size, profile)

		learning network	
		10.1a. Number of participants in the workshops	
		10.2a. Number of participants in the conference	

8.2 Annex 2

Impact Evaluation report

Reporting Partner:	
Reporting Period:	
Contact Persons:	
Date:	
Deadline for returning the form:	
Impact evaluation Based on the indicators described in Annex 3 of deliverable D6.4 Impact Evaluation methodology, please describe which the estimated impact is on the target groups (including participating institutions and stakeholders). Please add lines as necessary.	

WP No	No of deliverable/ result(s)	Evaluation tools used	Target groups/ potential beneficiaries	Impact	Quantitative Indicators measured	Qualitative indicators measured	Impact for the sector concerned/ Comments/ Recommendations/ Corrective actions proposed or/and implemented

8.3 Annex 3

Impact Evaluation Plan

N	Impact	Target groups/ potential beneficiaries	Quantitative indicators	Qualitative indicators	Evaluation tools	WP/DLV	Submission of Impact Evaluation reports	Responsible partners / tasks
1	Training in skills and competences that are more tailored to the needs of ICT learners and industry based on a learning outcomes oriented vocational curricula	ICT professionals and enterprises	1.1a. Number of surveys conducted 1.2a. Number of stakeholders involved in the surveys	1.1b. Profile of participants (industry, size, profile)	1. Surveys among target companies, partners, and other stakeholders to align the learning outcomes to the specific needs of the industry 2. Individual interviews with key representatives of the industry in order to evaluate the usefulness of learning outcomes and curricula for the industry	WP2: D2.1, D2.2	M18 (WP2) and M36 (WP2 and WP5)	*WP leader*: ESI CEE *Participating organizations:* UPATRAS, GCS, OTC, BASSCOM, UCY, YDW
			1.3a. Number of interviews conducted 1.4a. Number of stakeholders involved in the interviews	1.2b. Profile of participants (industry, size, profile)		WP2: D2.1, D2.2		

			1.5a. Number of learning outcomes defined	1.3b. Extensiveness of research for the development of the learning outcomes		WP2: D2.1, D2.2		
			1.6a. Number of curricula produced (target value: 2)	Not applicable		WP2: D2.3		
			1.7a. Number of educational modules produced (target value: 10)	1.4b. Correspondence of training modules with learning outcomes		WP2: D2.3		
			1.8a. Number of online training hours provided (target value: 100 per trainee)	1.5b. Correspondence of online training to industry needs		WP5: D5.3.2, D5.3.3		*WP leader:* ULS *Participating organizations:* UPATRAS, OTC, ESI CEE, UCY, YDW, MIXANOGRAFI
			1.9a. Number of face to face training hours provided (target					

			value 20 per trainee) 1.10a. Months of WBL provided (target value 4 per trainee)					KI, CD, NEME, UNICERT
2	Up-skilling of ICT professionals and especially Data Scientists and IoT engineers in order to meet new challenges in the work field	ICT professionals and enterprises	2.1a. Number of participants in trainings (target value: 150) 2.2a. Number of participants in Data Science trainings (target value: 75) 2.3a. Number of participants in IoT trainings (target value: 75)	2.1a. Correspondence of the training material to the learning outcomes and needs in the field work	1. Surveys among trainees to evaluate the trainings' impact to their upskilling; 2. Questionnaire at workshops and final conference	WP5: D5.3.2, D5.3.3	M36	*WP leader:* ULS *Participating organizations:* UPATRAS, OTC, ESI CEE, UCY, YDW, MIXANOGRAFIKI, CD, NEME, UNICERT

			2.4a. Number of certified professionals (target value: 150)					
3	Free access to learning opportunities and training methodologies for ICT businesses that lack training facilities and departments	ICT professionals and enterprises	3.1a. Number of registered users at the online courses	3.1b. Users profile (job, industry, professional experience)	1. Questionnaire at the online courses environment	WP5: D5.3.2, D5.3.3	M36	*WP leader:* ULS *Participating organizations:* UPATRAS, OTC, ESI CEE, UCY, YDW, MIXANOGRAFIKI, CD, NEME, UNICERT
			3.2b. Number of exploitation toolkits downloads	3.1b. Companies profile (industry, size, profile)	2. Questionnaire at the exploitation toolkits download environment	WP7: D7.9	M36	*WP leader:* GCS *Participating organizations:*

								ALL PARTNERS
4	Reduced training expenses for ICT businesses due to the free access to the VET programs	ICT professionals and enterprises	4a. Reduce in expenses	4.1b. Type of expenses reduced (travelling, trainers, preparation of training material)	1. Questionnaire to the companies 3 months after the completion of the training 2. Questionnaire in dissemination workshops and final conference	WP5: D5.3.2, D5.3.3	M36	*WP leader:* ULS *Participating organizations:* UPATRAS, OTC, ESI CEE, UCY, YDW, MIXANOGRAFIKI, CD, NEME, UNICERT
5	More interactive learning opportunities via the use of new teaching and learning technologies for learners	ICT professionals and enterprises	Not applicable	5.1b. Individualization and adaptability to user needs 5.2b. Interactive training material 5.3b. User satisfaction	1. Questionnaire at the online courses environment	WP5: D5.3.2, D5.3.3	M36	*WP leader:* ULS *Participating organizations:* UPATRAS, OTC, ESI CEE, UCY, YDW,

								MIXANOGRAFIKI, CD, NEME, UNICERT
6	Development of a more aware and flexible mind-set amongst ICT professionals	ICT professionals and enterprises	Not applicable	Not applicable	1. Questionnaire to the companies and trainees 3 months after the completion of the training	WP5: D5.3.1, D5.3.2, D5.3.3	M36	*WP leader:* ULS *Participating organizations:* UPATRAS, OTC, ESI CEE, UCY, YDW, MIXANOGRAFIKI, CD, NEME, UNICERT
7	International cooperation with like-minded organizations involved in the European VET ecosystem	Participating organizations and stakeholders	7.1a. Number of synergies established between the SENDING consortium and 3rd party organizations	7.2b. Profile of 3rd party organization (type, size, country)	Not applicable	WP7: D7.1 – D7.9	M36	*WP leader:* GCS *Participating organization:* All partners

			active in the VET field					
8	Creation of collaboration networks between different parties (VET providers, HEIs, enterprises) through a structured set of tools and procedures	Participating organizations and stakeholders	8.1a. Number of participants in the collaboration network	8.1b. Profile of the participants (type, size, country)	Not applicable	WP7: D7.1 – D7.9	M36	*WP leader:* GCS *Participating organization:* All partners
9	Development of a learning network within a transnational context	Participating organizations and stakeholders	9.1a. Number of participants in the learning network	9.1b. Profile of the participants (type, size, country)	Not applicable	WP7: D7.1 – D7.9	M36	*WP leader:* GCS *Participating organization:* All partners

10	Strengthening the interconnection between higher education institutes, business world and vocational education and training, creating the conditions for an all-around, up-to-date vocational education and training of ICT specialists in targeted occupational profiles	Participating organizations and stakeholders	10.1a. Number of participants in the workshops	10.1b. Profile of participants in the workshops	Not applicable	WP7: D7.1 – D7.9	M36	*WP leader:* GCS *Participating organization:* All partners
			10.2a. Number of participants in the conference	10.2b. Profile of participants in the conference				
			10.3a. Number of companies participating in the trainings	1.3b. Profile of the companies (industry, size, profile)				
11	Development and exploitation of new forms of	Participating organizations	11.1a. Number of registered users at the online courses	Not applicable	Not applicable	WP2: D2.4, D2.5	M36	*WP leader*: ESI CEE

	learning via the use of new teaching and learning technologies	and stakeholders	11.2a. Number of participants in the trainings					*Participating organizations:* UPATRAS, GCS, OTC, BASSCOM, UCY, YDW
			11.3 Number of exploitation toolkits downloads			WP7: D7.9	M36	*WP leader:* GCS *Participating organization:* All partners
12	Intra-EU labor geographic mobility through a commonality of Data Scientists and IoT engineers skills' and competences' development	ICT sector (and other sectors where Data Science and IoT have broad applications) at local, regional,	13.1a. Number of mobilities	13.1b. Demand in the countries	1. Questionnaire to the trainees 3 months after the completion of the training	WP5: D5.3.2, D5.3.3	M36	*WP leader:* ULS *Participating organizations:* UPATRAS, OTC, ESI CEE, UCY, YDW, MIXANOGRAFI

		national, European and/or International level						KI, CD, NEME, UNICERT
13	More attractive opportunities for vocational education and training in ICT sector at a pan-European level	ICT sector (and other sectors where Data Science and IoT have broad applications) at local, regional, national, European and/or International level	Not applicable	Not applicable	1. Questionnaire to the participants 3 months after the completion of the training	WP5: D5.3.2, D5.3.3	M36	*WP leader:* ULS *Participating organizations:* UPATRAS, OTC, ESI CEE, UCY, YDW, MIXANOGRAFIKI, CD, NEME, UNICERT

14	More cohesive society through increased opportunities for mobility and professional development	ICT sector (and other sectors where Data Science and IoT have broad applications) at local, regional, national, European and/or International level	Not applicable	Not applicable	1. Questionnaire in the workshops and the final conference	WP4 (D4.1, D4.2, D4.3)	M36	*WP leader:* ULS *Participating organizations:* UPATRAS, OTC, ESI CEE, UCY, YDW, MIXANOGRAFIKI, CD, NEME, UNICERT
15	Enhanced productivity, innovation, competitiveness and growth potential in the European ICT sector	ICT sector (and other sectors where Data Science and IoT have broad applications) at local,	Not applicable	Not applicable	1. Questionnaire in the workshops and the final conference 2. Questionnaire to the companies involved in WBL	WP5: D5.3.2, D5.3.3	M36	*WP leader:* ULS *Participating organizations:* UPATRAS, OTC, ESI CEE, UCY, YDW,

		regional, national, European and/or International level						MIXANOGRAFIKI, CD, NEME, UNICERT
16	Ability of ICT professionals throughout Europe to respond to the needs of different ICT markets and other sectors like banking, insurance and energy	ICT sector (and other sectors where Data Science and IoT have broad applications) at local, regional, national, European and/or International level	Not applicable	Not applicable	1. Questionnaire in the workshops and the final conference 2. Questionnaire to the trainees and companies involved in WBL	WP5: D5.3.2, D5.3.3	M36	*WP leader:* ULS *Participating organizations:* UPATRAS, OTC, ESI CEE, UCY, YDW, MIXANOGRAFIKI, CD, NEME, UNICERT