



Key Action: Cooperation for innovation and the exchange of good practices  
Action Type: Strategic Partnerships for higher education

## Project Title

# Implementation of Software Engineering Competence Remote Evaluation for Master Program Graduates

## Project Coordinator

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## Project Information

**Identifier** 2015-1-LV01-KA203-013439  
**Start Date** Sep 1, 2015  
**End Date** Aug 31, 2017  
**EC Contribution** 241,800 EUR  
**Partners** KAUNO TECHNOLOGIJOS UNIVERSITETAS (LT) , UNIVERSIDAD DE MURCIA (ES) , UNIVERSITY OF PLOVDIV PAISII HILENDARSKI (BG) , Wyzsza Szkola Gospodarki w Bydgoszczy (PL) , TECHNOLOGIKO EKPEDEFTIKO IDRYMA IPIROU (EL)  
**Topics** ICT - new technologies - digital competences ; Recognition, transparency, certification ; Open and distance learning

## Project Summary

### Background of the project

The project „Implementation of Software Engineering Competence Remote Evaluation for Master Program Graduates” (ISECRET) implements the unique combination of information and communication technologies (Software Engineering & Software Technologies, European e-Competence Framework), open educational resources (OER) (Internet Portal), and recognition and validation of learning outcomes (Methodology for learning outcomes evaluation and competence testing). Synergy effect is expected from combination of these activities in a project.

The general aim of the project is to boost innovation and digital skills in European universities in order to deliver the high quality education and digital skills which 90% of jobs will require by 2020.

Consequently, the project addresses the following issues and needs:

1. This project will provide analysis of some core issues related to the development of common standards for higher education qualifications, which is needed for establishing a common way of measuring educational outcomes in the EU member countries related to actual ICT jobs requirements. In the context of increased workforce mobility and lifelong learning, the management and interoperability of data about academic learning outcomes (LOs) and e-CF competences in outcome-based learning are of high importance for both education and employment sectors.
2. This project will specifically benefit educators and students by providing them with a research-based online tool that will support the exchange of information on learning outcomes, referring to a graduate’s knowledge, skills and e-CF competence upon completion of the Master of Science in Software Engineering Program.
3. Using a common online format for describing, referencing and sharing the graduate learning outcome definitions defined in the Program will make it easier for educators to assess the compatibility of educational systems and employment sectors across national borders in the framework of creating the EHEA. By managing and sharing this data, students will be able to better plan their careers and enhance their employability potential.
4. Internet-based information flows play an important role in the development of modern society. The implementation of a unified metadata and service IT system for promoting the OER-based educational materials will help making key educational resources sharable, storable, findable and interoperable on a global scale.
5. The project will introduce new on-line technologies also supported mobile devices and tablet PCs to make the competence evaluation solution accessible for wide European Software Engineering society.

The project target groups - Academic staff active in education and training, Master students and graduates from Computer Science programs, University executives (decision makers), ICT sector's employers (e-jobs providers).

### Objective of the project

The project aims to foster interchange and cooperation between education and training systems within the European Union. The ISECRET project foresees to reinforce and accelerate the process of innovation in higher education by enhancing the universities' capabilities by granting better access to educational know-how as OER, setting an effective experimental framework to define and measure Educational Outcome for the selected Master Programs in SE&ST on European and Baltic regional level.

### Project partners

There are six Partner universities as members of ISECRET project: Transport and Telecommunication Institute (TTI) from Latvia, Kaunas Technological University (KTU) from Lithuania, University of Murcia (UM) from Spain, Plovdiv University (PU) from Bulgaria, Technological Educational Institute Epirus (TEIE) from Greece and University of Economy in Bydgoszcz (WSG) from Poland. All project Partners successfully run their own Master

Programs in SE&ST for years. Informatics Faculty of University of Murcia offers the innovative Master Program in Modern Software Technologies, which can be used as a pattern for competence model development and evaluation implementation, as well as for localization at Baltic universities. TTI and UM already have strong mobility flow and a special partners' cooperation agreement. Informatics Faculty of KTU is one of the regional leaders in Software Engineering Research and Education. TTI and KTU have fruitful relations in academic program accreditation, multimedia and e-Learning implementation areas. PU has a number of successfully implemented EU project projects including the Distributed Internet-based Performance Support Environment for Individualized Learning, the Internet-based Performance-centered Adaptive Curriculum for Employment Needs projects. The Laboratory of Knowledge & Intelligent Computing of TEIE has expertise including knowledge and intelligent techniques, advanced software development techniques, computational intelligence and soft computing techniques, advanced signal processing, Intelligent Information Systems. WSG partners from Bydgoszcz are experts in continuous improvement of engineering student's soft skills. All project partners have successful previous EU project experience.

The main activities of the project:

1. Research of European experience in SE&ST Master Program's implementation for common measurable Educational Output (competence) requirements suggestion (as a Template for Joint Master Program in SE&ST).
2. Development and documenting of the Methodology for evaluation of competence in SE&ST on the basis of European e-CF.
3. Descriptions of measurable competences' characteristics of the Master of Science for SE&ST Program's graduates.
4. Development of testing material for the Master Program Educational Outcome evaluation.
5. Creation of the Engineering Competence Evaluation Internet Portal (SECEIP).
6. Development of on-line training course "How to use SECEIP" for academic personnel and master program graduates.
7. Intensive programme for teaching staff (on-line training).
8. Conference on project results – the Multiplier Event.

#### Methodology

As the main development methodology so called "waterfall model" is selected with following consistent project phases - Competence Training Area Analyses, Competence Evaluation Methodology Design, Methodology Implementation and Internet Portal installation, Project Outcome Verification and Project Follow Up (Dissemination Phase).

#### Expected project results

Intellectual Outputs Covered:

- O1. Methodology for remote evaluation of competences in Software Engineering (Software Technology).
- O2. Software Engineering Competence Evaluation Internet Portal (SECEIP).
- O3. Descriptions of measurable competences' characteristics of the Master of Science in Software Engineering Program's graduates in terms of e-CF.
- O4. Rubrics Templates for personal competences' self-assessment of Master of Science in Software Engineering Program graduates.
- O5. Syllabus Template for Joint Master Program in Modern Software Engineering (Software Technology).
- O6. On-line training course "How to use SECEIP" for academic personnel and master program graduates.
- O7. Testing material for SE&SE Master program graduates Educational and Learning Outcome evaluation.

The desired impact of the project at the local level:

1. More attractive SE&ST education and training programs, in line with individuals' needs and expectations.

2. A more modern, dynamic, committed and professional environment inside the education organizations.
3. Improved levels of skills for employability through on-line self-assessment.

The desired impact of the project at regional and national level:

1. Increased workforce mobility and lifelong learning, students will be able to better plan their careers and enhance their employability potential.
2. Easier for educators to assess the compatibility of educational systems and sectors across national borders in the framework of creating the EHEA.

The desired impact of the project at European and/or international level:

1. Educational resources sharable, storable, findable and interoperable on a global scale (OER).
2. SE&ST competence evaluation solution accessible for wide European Software Engineering society.
3. Promote the use of learning outcomes on the base of e-CF when describing and defining qualifications, parts of qualifications and curricula, in support to teaching and learning and in assessment.

Link to project card: [Show project card](#)