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VALS Virtual Alliances for Learning Society

Progress Report

Public Part

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Executive Summary

VALS (Virtual Alliances for Learning Society) project has the aim of establishing sustainable processes **to build knowledge partnerships between Higher Education institutions and Companies/Foundation** to collaborate on resolving real business problems through an open innovation process mediated by the use of Open Source Software (OSS). To achieve this, VALS builds knowledge partnerships between Higher Education and Companies/Foundations. **The innovative approach is to leverage virtual placements for Computer Science students in companies in order to foster entrepreneurial skills and attitudes**, and to make use of the results **to establish new learning and teaching methods**. This results in the Semester of Code initiative, a set of methods and processes for creating and managing a real virtual placement system, and for integrating this into innovative teaching and learning strategy. To make possible these methods and processes, this project establishes a general methodology designed to perform the Semester of Code, supported by technology framework, as well as several guidelines on how to develop the software that will support this process. Right now, after 12 months of work, the methodology and the platform are ready to start the virtual placement piloting procedure, with 62 companies and 233 placements proposals registered in the Virtual Placement System. The first contacts with companies, universities and students have shown a great interest and expectation about the project, especially important for allowing students' access to real companies and projects all over Europe with no expenses of money for travelling and subsistence, which is very important in the current economic reality.

The partnership consists of **four Higher Education (HE)** partners (the Universities of Salamanca, Udine, Cyprus and Bolton) and **four SMEs** working in the field of open development (OpenDirective, RayCom, OSS Watch and Mindshock). The HE are seeking opportunities to enhance the preparation of their students for professional life, and all run courses which can be enhanced by virtual placements. The synergy with the SMEs involved in the project, not only do they find opportunities for placements of their students, but they also achieve an excellent understanding of what is required of student or professional who participates in the development of OSS solutions for business. This has been valuable input into the **design of VALS processes and pilots**.

An **Open Innovation Process Model** has been designed with the description of the innovation model that is used in Virtual placements and guidelines for the possible applications in Higher Education institutions. VALS project is now developing and piloting the **Semester of Code**. It has just begun (October 2014) and will be developed till the end of the project in a two-round project application process, one just started other around February 2015.

HE staff and students, Open Source Software Foundation and the business sectors in general can find all the information about VALS project at <http://virtualalliances.eu/>.

FOSS projects, HE Institutions and students that'd like to take part in Semester of Code, can still sign up. Simply by heading over to <http://semesterofcode.com> for more details about the SoC or directly to <http://vps.semesterofcode.com> to register the organisation and join the initiative.

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1. Project Objectives

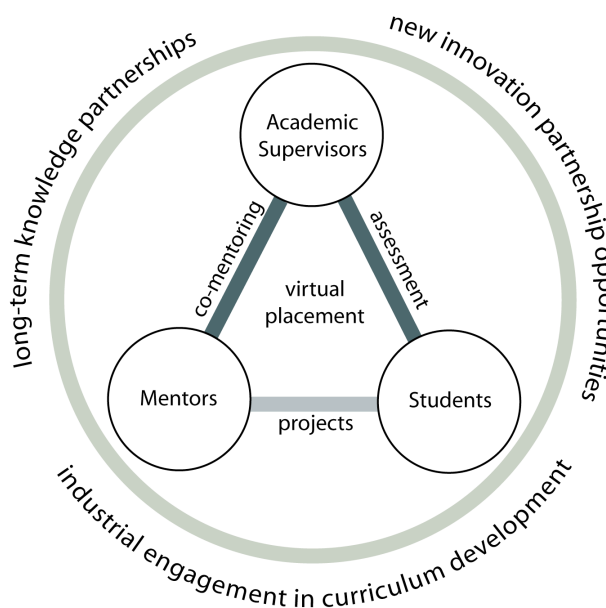
The **aim of the project** is establish sustainable methods and processes for virtual placements, which bring together higher education and companies to collaborate on resolving authentic business problems.

Its intervention is to align and address the needs of the stakeholders involved:

1. **Software companies engaged in open source and OSS foundations** need to actively solicit contributions from new contributors, including students, in order to remain viable and compete with closed-source offerings.
2. The current level of engagement between universities and the software industry is recognised as being insufficient by:
 - a. **Universities**, who want to offer authentic teaching and assessment opportunities using current industry best practices.
 - b. **Students**, who want to obtain relevant experience and to make contacts in the industry that they can use to help start their career after graduation.
 - c. **Employers**, who are seeking graduates with real-world programming experience and related soft skills such as communicating in distributed project teams and working with contemporary development tools and practices.

VALS creates the Semester of Code (SoC), bringing together Academic Supervisors from Higher Education (HE), mentors who are problem owners at enterprises and foundations, and students. Preparation for the Semester of Code, and integration of outcomes into the academic process, mean that each iteration takes place over a full academic year.

Their relationships and the benefits accruing are shown in the following diagram:



2. Project Approach

The **motivation behind the VALS project** has its origin in a need, shared by all partners, to **forge greatly improved links** between **higher education** students and their teachers, and on the other hand the **businesses** where those students will find employment.

The partners share an understanding of how this need can be addressed.

Large sector of the European economy are now mediated by online communications and collaboration, both within a single company, and in the collaboration between organisations. Nevertheless, mobility of students in placements and internships in companies relies on the local connections, which higher education institutions have developed, and the location of placements is restricted by the high costs of relocation and living expenses at any significant distance from the home institution. **The solution is to create virtual placements.** These will make use of the technology, which drives the professional environment to organise and carry out placements.

The consortium believes that the reason this potential has not been exploited is that virtual placements have not **to date offered experience of an authentic business environment and business problems.** We conclude that for the approach to be successful, these aspects need to be replicated in a virtual placement.

To achieve this, VALS will **build knowledge partnerships** between higher education (HE) and companies who will work together on **resolving authentic business problems through open innovation.** The innovative approach of VALS is to leverage virtual placements of students in companies in order to **foster entrepreneurial skills and attitudes**, and to make use of the results to **establish new learning and teaching methods.** This will result in the Semester of Code methodology, a **sustainable set of methods and processes for creating and managing virtual placements**, and for integrating these into **innovative teaching and learning strategies.**

Our **focus** is, on the one hand, **real world business problems**, and on the other, **education that involves programming.** These may be from a wide variety of areas of study, not only ICT. This is a promising area for establishing industrial/educational collaboration, because there is:

1. **established practice of external participation** in business, in which software artefacts are developed outside a business, and then applied within it,
2. a very **wide range of real world business problems can be addressed.**

Within this context, we make use of **open source software (OSS) as an enabling technology.** This has a number of significant advantages, but nevertheless, the VALS method is extensible to any innovation, which is mediated by software, so long as the legal and organisational barriers created by licensing terms can be overcome. OSS provides the means whereby HE institutions, students, businesses and foundations can all collaborate to resolve authentic business problems. Firstly, OSS provides the necessary shared infrastructure: it is accessible to students, and

businesses are not constrained by intellectual property or commercial interests, which prevent them engaging with educational placements. Secondly, OSS provides a context of well-established collaborative practice within which authentic business tasks are shared remotely, and beyond the confines of an individual organisation.

Moreover, the foundations that manage the software are also hubs, which channel the operational challenges of their users through to the people who can solve them. This has great potential for enabling students and supervisors to collaborate in resolving the problems of businesses, but is constrained by the lack of support for managing and promoting collaboration across the two sectors.

3. Project Outcomes & Results

VALS will:

- Provide the **methods, practice, documentation and infrastructure to unlock this potential through virtual placements** in businesses and other public and private bodies
- Pilots and **promotes this as the “Semester of Code”**

In particular the major achievements and results of the project expected are the following:

1. Create a VALS Open Innovation Process methodology and guidelines.
2. Establish an online system (VALS Virtual Placement System) to manage virtual placements for student developers to work on real-world business problems, with appropriate mentoring.
3. Run a pilot programme (VALS Semester of Code SoC) to demonstrate the effectiveness of this approach, open to non-partners.
4. Design an Evaluation Plan, with guidelines and tools to evaluate the results of the virtual placement programme.
5. Establish long-term alliances between universities and companies in Open Source development.
6. Initiate mainstreaming of the project approach, with the provision of persuasive evidence, materials and resources with which to carry the work forward.

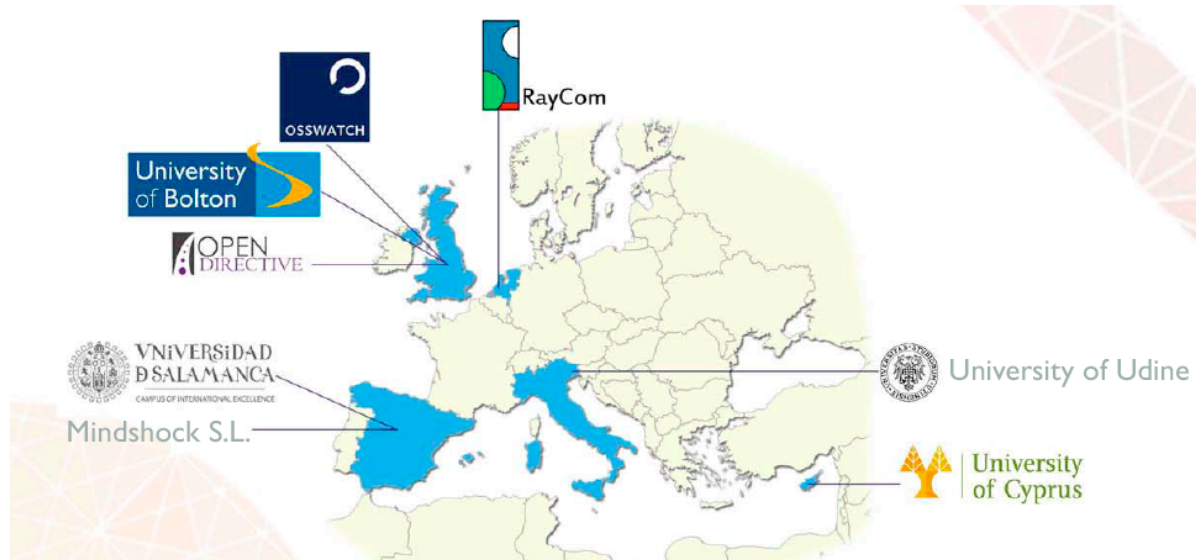
Right now, after 12 months of work, the methodology (1) and the online system (2) are ready to start the virtual placement piloting procedure (3), with 62 companies and 233 placements proposals registered in the Virtual Placement System.

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4. Partnerships



[University of Salamanca](#) (Spain)
[OpenDirective Ltd](#) (United Kingdom)
[RayCom B.V.](#) (Netherlands)
[University of Bolton](#) (United Kingdom)
[University of Udine](#) (Italy)
[University of Cyprus](#) (Cyprus)
Mindshock S.L. (Spain)
[University of Oxford - OSS Watch](#) (United Kingdom)

The consortium of eight is composed of equal numbers of HE institutions and SMEs who have a focus on OSS, and is completed by a number of OSS foundations and HE institutions who have committed to collaborating in the Semester of Code by providing access to problems and problem owners and engaging students.

The VALS partnership is a network in which all partners have collaborated with at least one other member in previous projects. Much of this has dealt involved the development of products and services using OSS which have bridged the academic and business contexts. **In the course of this work they have become aware of the potential of collaboration in** open innovation addressing authentic business challenges **as a means of** overcoming the separation between formal education and the domains in which it can be applied.

5. Plans for the Future

The main activities to carry out in the second year of the project are:

Running of the Semester of Code SoC

- **First phase:** This first phase is intended mainly to test both the Innovation Process Model and the Virtual Placement System. The time frame for projects registration is between September-October 2014. The frame for students' application for projects is between October-November 2014, and the timeline for developing the project is fixed between the student and the Company/Foundation that propose the placement. For many Universities, this first phase fits perfectly with the academic timeline for the registration of thesis subjects and thesis degree at the beginning of the academic season.
- **Second phase:** This phase (to start on January – February 2015) is intended to use the knowledge achieved in the first iteration of the Semester of Code, improving the virtual placements and the process followed to get the placements. Also it fits with many other Universities schedule for placements and their academic timeline.

Evaluation of the virtual placement programme results and revision of the Open Innovation Process Model and of the Virtual Placement System

- **Report on the virtual placement programme:** This report will gather the information about the virtual placements carried out and especially the results achieved following the evaluation plan. Some corrective actions for future virtual placements will be proposed according to the report results.
- **Upgraded version of OIPM and VPS:** based on the feedback achieved by the academic partners, companies and students that participate in the virtual placements in the SoC, a final version of the innovation process model and of the platform will be delivered, including recommendations for future applications.

Dissemination and mainstreaming actions

- **Dissemination activities, online and off:** The aim is to raise awareness in specialized environments, to publish about the activities undertaken with the intention to enhance the exploitation and improvement of the system and to engage potential partners and experts.
- **Mainstreaming actions:** The aim is to review and adapt project outcomes to maximise prospects for sustaining and expanding knowledge partnerships using the Semester of Code. In particular the objective is to prepare a second iteration of SoC after the end of the project.

6. Contribution to EU policies

The practice of industrial placements is well established in Europe. Many major corporations and leading universities offer placements, and these are also supported by the Commission through the Erasmus and Leonardo programmes. This has been largely coordinated through bilateral links between HE institutions and business, developed over the years. **While successful, current practice has limitations.**

As Professor Kate Purcell of Warwick University, an expert in the graduate labour market, recently stated "Work placements are very difficult for universities to set up and they're expensive for to run – departments have to arrange visits by academics, and mentoring, to ensure students are having a rewarding experience." ¹ This problem is common across Europe, and a concerted European effort is required to address it. This is recognised by the European Commission, and in Supporting growth and jobs – an agenda for the modernisation of Europe's higher education systems (2011²) it is stated that **"internships and placements today do not always provide the right conditions for students to develop their skills and receive appropriate recognition for experience gained. More needs to be done to improve the quality and relevance of traineeships."**

The cultural contexts, practices and understandings of education vary greatly between the member states, and in order to produce robust, sustainable outcomes that are usable throughout the European Union it is necessary to take into account the range of different environments and the specific situation in each country.

To achieve this it is necessary to have **a project, which operates across the educational systems in a number of member states**. This enables the methods and systems to be designed and evaluated within a wide range of education systems, so that they are applicable across the European Union.

Moreover, the VALS methods and systems are particularly appropriate to an intervention at a European level. This is because they leverage the methods and practice of OSS foundations, which is based on **bringing together contributions from participants in different countries to work on common problems, which can be applied internationally**. The virtual placement method, which could be extended to other collaboration around artefacts, **can create a step change in practice by greatly expanding the pool of potential links between student recruits and placement contexts**. In order to realise this potential it is important to have project partners from a wide range of cultural contexts, who are able to both adapt the VALS methods and systems to local conditions, and to lead a pan-European mainstreaming effort.

¹ Cited in The Guardian, 30th April 2012. *Why aren't more students doing sandwich courses?*
<http://www.guardian.co.uk/education/mortarboard/2012/apr/30/students-sandwich-course>

² European Commission, Brussels, 20.9.2011 COM(2011) 567 final

7. Dissemination and Exploitation Activities-Tools

The following table defines the list of dissemination tools and the partners that contributed to their definition and development.

Activity – Tools	Contributing partners
<i>The branding of the VALS project</i> that will be used for the definition of the logo, formatting of documents (e.g. deliverables), project websites and social media.	University of Salamanca
<i>The VALS project flyer</i> (http://virtualalliances.eu/wp-content/uploads/2014/07/VALS_Flyer_Final.pdf) that defines clearly the motivation, concept, core objectives, pilot information, partners and contact information.	University of Cyprus
<i>A project mailing list</i> (https://www.jiscmail.ac.uk/cgi-bin/webadmin?SUBED1=VALS-SOC&A=1) that allows industry mentors to denote interest in submitting projects for the pilot of the VALS project.	University of Salamanca University of Oxford – OSS Watch
<i>The VALS Semester of Code industry-specific flyer</i> (http://virtualalliances.eu/wp-content/uploads/2014/07/VALS-Flyer-Industry_Final.pdf) that defines clearly the VALS project concept and calls for statement of interest in submission of projects by industry mentors which subscribe to the project mailing list.	University of Cyprus
<i>VALS project website</i> was developed and hosted at University of Cyprus servers and can be accessed via the following URL: http://www.virtualalliances.com . It contains information on the VALS project motivation, concept, objectives, etc.	University of Cyprus University of Salamanca
<i>Semester of Code website</i> was developed and hosted at University of Cyprus servers and can be accessed via the following URL: http://www.semesterofcode.com . It provides information on the pilot of the project, including timeline of the project pilot execution, answers to frequently asked questions and a mailing tool that can be used by mentors and academics to subscribe and receive information about the pilot.	University of Cyprus University of Salamanca University of Oxford – OSS Watch
<i>A professional LinkedIn group</i> (https://www.linkedin.com/groups/VALS-Virtual-Alliances-Learning-Society-8130621/about) was created as another dissemination channel that allows generating interest and provides the means to join the project community and get information on the project and the pilot (not so actively used at present but intention is to use it for the second year of the project).	University of Cyprus

