

DRAG: A CLUSTER OF SPINOFFS FOR GRID AND CLOUD SERVICES

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Introduction

The offering of services to Research and Higher Education (HE) Institutions is increasingly becoming an important activity for Virtual Research Communities (VRC) of the European Grid Infrastructure (EGI) in particular for its associated partner the European Chemistry Thematic Network (ECTN).

Among the services offered by ECTNA through its standing committees, the most consolidated one is the Label Committee. The Label Committee (LC) is a Standing Committee which deals with the **EUROLABEL**[®] (a certification of the level of knowledge) such as the **CHEMISTRY EUROBACHELOR**[®], **CHEMISTRY EUROMASTER**[®], **CHEMISTRY DOCTORATE EUROLABEL**[®] and similar activities. The LC has developed in the previous years accreditation procedures based on a Syllabus of the knowledge of Chemistry taught in Europe assembled by ECTN. On this ground LC analyses a self evaluation report, inspects laboratories and evaluates the coherence of practices with the University project for the involved disciplines. The structure of the LC consists of a Chairman, a vice-Chairman, an Executive Secretary (non-voting) and a maximum of seven ordinary members. The Chairman and Executive Secretary are nominated by the Administrative Council. The ordinary members are elected by the General Assembly according to guidelines established by the Administrative Council (AC). The Label Committee maintains a Register of Experts who carry out the processes of accreditation for the award of **EUROLABEL**[®], and similar activities.

Parallel to the above mentioned certification activities, ECTN has undertaken important activities open and distance e-learning initiatives whose coordination is guaranteed by the the Virtual Education Community (VEC) Standing Committee. The VEC deals with several virtual community educational activities among which the most important is **EChemTest** that is managed centrally with the local help of **Test Centres**. **Test Centres** are National structures devoted to dissemination and publications of the Self evaluation sessions aimed at evaluating the different levels of knowledge of chemistry. A companion activity of **EChemTest** is the creation of a distributed repository of **Learning Objects** designed and developed as a support to educational activities. The VEC consists of a Chairman and an Executive Secretary (both appointed by the Administrative Council) and 9 members who have the following responsibilities:

- Member responsible for dissemination and publications (appointed by the Administrative Council)
- Member for distributed LO repository (appointed by the AC)
- Member responsible for Testing Centres (appointed by the AC)
- Member responsible for commercialisation (appointed by the AC)
- Member who is the Manager of Level 1 and Level 2 libraries (group leader of these tests)
- Member who is Manager of Level 3 libraries (appointed by the AC)
- Member who is Manager of Level 4 libraries (appointed by the AC)
- Two members who represent the users (elected by the ECTNA members).

The two user representatives are elected by the General Assembly according to guidelines established by the Administrative Council. The appointments and election is initially for a two year

period. The Chairperson can be confirmed in office by the Administrative Council for one further two-year period. The Executive Secretary can be confirmed in office by the Administrative Council for an unlimited number of further two-year periods.

Towards sustainability

Both Standing Committees are at present intensively working in order to make the related initiatives sustainable before the life of the funding EU project comes to an end. The LC has made the most important advances along this direction by signing a franchising MoU with some national Agencies (among which ASIIN (DE), SC (IT), UKA (PL)) which will assure the regular provision of the associated services. The VEC too is moving along the way of offering its own educational services through franchised Agencies. For this contacts with some private partners are being taken and the way for assuring stable support to the already established Test Centres is being investigated. This is aimed at providing the level of technological support and competences necessary to assemble and manage self-evaluation sessions, prepare the support materials, take care of language translations and national events. Self evaluations EChemTest sessions (at present offered for free mainly to ECTN member institutions for academic use) are candidate to become the second sustainability pillar of the ECTN Association. As a matter of fact, the VEC SC has been already enabled by a formal decision of the ECTN AC to release EChemTest certificates for private use to individuals, companies and HE Institutions. Other lines of activity have not yet found their way to regular service like the maintenance of the questions/answers libraries, the production of supplementary materials, on-line assistance to students, the development of specialized libraries of job selection, etc..

The pursuit of more market oriented objectives will necessarily prompt on the side of ECTN the development of new services and of a new “modus operandi” that will make it necessary to establish links with specific spinoffs and start-ups able to operate in a market oriented context. This has led, within the activities of the work-package 3 (WP3) of the EC2E2N2 project (coordinated by the author of the present contribution), to the clustering of some European spinoffs operating in the field of knowledge management systems for chemical research based education. Among the members of WP3 (Antonio Laganà (University of Perugia, Italy), Reiner Salzer (University of Dresden, Germany), Walter Zeller (Astyle, Austria), Peter Gartner (Technical University of Vienna, Austria), Heinz Krebs (Krebs Inc, Austria), Sophie Wilmet (CEFIC, Belgium), Nineta Majcen (EUCHEMS, Belgium), Anthony Smith (ECTNA, France), Noelia Faginas Lago (Master-Up srl, Italy), Francisco Gavilanes (INBEA Sensores, Spain)) the Krebs Inc and the Master-UP srl have already agreed, in fact, to establish a consortium for joint operations.

The agreement was discussed in a wide European context during the joint ECTN, COST and EUREKA Strategic Event "COST Actions – A Great Opportunity as Incubators for Molecular Science and Technology" held in Brussels (March 26-28, 2014) and further consolidated at the annual ECTN conference held in Madrid (April 24-26, 2014) and the VEC training event held in Genoa (May 29-30, 2014). Following that event, eXact Lab srl (Trieste, IT), Arctur d.o.o (Nova Gorica, SL) and Polymechanon (Thessaloniki, GR) have also expressed their wish to join the original cluster and to identify the ECTN VEC as the European cooperative umbrella infrastructure based on grid and cloud technologies for their operations.

This infrastructure will refer to the EGI Chemistry, Molecular, Materials Science and Technology (CMMST) Virtual Research Community (VRC) and the related Competence Centre proposed at the Community forum held in Helsinki on May 2014. In this way the ECTN VEC will be enabled to operate with the support of a robust technological ICT partner not only to consolidate its EChemTest activities but also to help the mentioned spinoff cluster to run and sell related ICT services, exploit the educational outcomes of modelling molecular structures and processes, develop and use networked knowledge management tools and systems to the end of carrying out networked training.

A draft of the agreement

Dr. Tomi Ilijaš acting as the CEO of Arctur d.o.o (Nova Gorica, SL)
Dr S. Cozzini acting as the Director of eXact Lab srl (Trieste, IT) a spinoff company of the Democritos INAF Laboratory, Trieste
Dr Kreinz acting as the owner of the Krebs Inc (Vienna, AT)
Dr Noelia Faginas Lago acting as the President of MASTER UP, a spinoff company of the University of Perugia, Via Elce di Sotto 8, Perugia (Italy)
Prof. Evangelia Varella acting as Director of Polymechnon

All parties, aware

- a. of the potential characteristics of their organisations
 - b. of the possible synergies that could be obtained as fruit of cooperation,
 - c. of the recommendations made by the European Initiatives COST, ECTN and EUREKA in their joint strategic initiative held in Brussels, on March 27-28, 2014 on innovation incubators
 - d. of the support either already given or planned by the European projects EC2E2N2 (WP3, of 526259-LLP-1-2012-1-FR-ERASMUS-ENW Sustainable entrepreneurship) and EGI-Inspire (<https://www.egi.eu/about/egi-inspire/>), consider of great interest to set up and sustain the present agreement of cooperation intend to cooperate in:
research based education based on multimedia and networking, in general, and in particular the activities of the Virtual Education Community of the European Grid Infrastructure (EGI) and of the European Chemistry Thematic Network (ECTN),
promotion of entrepreneurship and support to its sustainability, in general, and in particular that related to the activities of the Workpackage3 (WP3) of the EC2E2N2 project (526259-LLP-1-2012-1-FR-ERASMUS-ENW Sustainable entrepreneurship), ECTN and EGI
accomplishment of the goals of distributed Competence Centres (CC) providing ICT services to Science and Technology communities, in general, and in particular to the Chemistry, Molecular, Materials Sciences and Technologies (CMMST) Virtual Research Community (VRC),
participation to bids related to European Projects, Institutions and Companies addressed to spinoffs, start-ups and SMEs, in general, and in particular to the calls of Horizon 2020
- commit themselves to** undertake joint operations in the field of:
- *organizing and supporting meetings* and related registration and management of participants (online registration, payment, handling, communication), abstracts management (online tools for submission, reviewing, book editing and publishing);
 - *running (and selling) IT-services* as a provider (like Domain-Management, Web- and Mail-Hosting, TYPO3-Hosting, Database-Hosting, VMWare, etc.);
 - *organizing* course programming and webpage-development including european accreditation certificates;
 - *modelling molecular structures and processes* by designing, implementing, developing, running and maintaining on the grid related programs and tools;

Virt&I-Comm.5.2014.16

- *developing and using networked knowledge management systems* by using grid based content management systems specialized for chemical problems with particular focus on eLearning-activities like EChemTest, distributed repositories, Learning object management;
 - *carrying out networked training and assessment* by using remote and face to face techniques including crossed placements of young researchers and electronic self assessment sessions;
 - *managing grid and cloud systems* by utilizing academic and commercial platforms as well as open source and commercial tools;
 - *offering high level consultancy for analytic problems* by utilizing know how and competences of University and research centre laboratories to the end of solving the practical needs of the market;
 - *acting as local agent* for the other members of the consortium
- as a consortium named **DRAG (Distributed Research Applications in Grid-Cloud)** by sharing the know how, programs, services, opportunities to the end of promoting the offer to the market of collaborative applications on grid and clouds over a Europe wide geographical area and accepting the ECTN VEC community as an umbrella EU organization.