EUROPEAN COMMISSION
Community Research

SEVENTH FRAMEWORK PROGRAMME

CINCH

CINCH-II

Project Number: 605173

DELIVERABLE D4.1

Project Presentation

Lead Beneficiary: **EVALION**

Due date: 30/06/13 Released on: 26/06/13

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		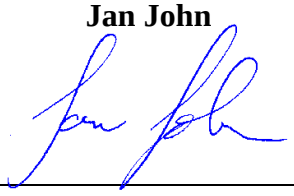

Start date of project: **01/06/2013** Duration: **36 Months**
Project Coordinator: Jan John
Project Coordinator Organisation: CTU in Prague VERSION: 1.0

Project co-funded by the European Commission under the Euratom Research and Training Programme on Nuclear Energy within the Seventh Framework Programme		
Dissemination Level		
PU	Public	**X**
RE	Restricted to a group specified by the partners of the CINCH project	
CO	Confidential, only for partners of the CINCH project	

Version control table

Version number	Date of issue	Author(s)	Brief description of changes made
1.0	30/06/2013	Kořán	Draft version

Relevance

This deliverable contributes to the following Work-Packages and Tasks:

☐ ALL

WP 1
☐ Task 1.1 ☐ Task 1.2 ☐ Task 1.3 ☐ Task 1.4

WP 2
☐ Task 2.1 ☐ Task 2.2 ☐ Task 2.3 ☐ Task 2.4

WP 3
☐ Task 3.1 ☐ Task 3.2 ☐ Task 3.3 ☐ Task 3.4 ☐ Task 3.5

WP 4
☐ Task 4.1 ☐ Task 4.2 ☐ Task 4.3 ☒ Task 4.4

WP 5
☐ Task 5.1 ☐ Task 5.2 ☐ Task 5.3 ☐ Task 5.4

Project information

Project full title:	Cooperation in education and training In Nuclear CHemistry
Acronym:	CINCH-II
Funding scheme:	Coordination Action
ECGA number:	605173
Programme and call	FP7 EURATOM, FP7-Fission-2013-5.1.1
Coordinator:	Jan John
EC Project Officer:	Georges Van Goethem
Start date – End date:	01/06/13 – 31/05/16 i.e. 36 months
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EXECUTIVE SUMMARY

The report includes short publishable presentation of the CINCH-II project. It includes basic information about the project scope and objectives, activities, impacts and societal impacts as well as basic project information and the list of Beneficiaries. Project graphics is included in Annex.

CONTENT

1 INTRODUCTION

The OECD/Nuclear Energy Agency's report, "Nuclear Education and Training: Cause for Concern?" (2000), demonstrated that many nations are training too few scientists to meet the needs of their current and future nuclear industries and authorities. Additional studies undertaken by different European governments to determine the health of their national nuclear education programs confirmed the OECD/NEA findings. Consequently, the European educational skill base has become fragmented to a point where universities in many countries lack sufficient staff and equipment to provide education in all, but a few, nuclear areas. Of particular concern, to the European Commission (EUTURP, 2004), authorities, industry and professional, university based scientists are special skill-based deficits within nuclear chemistry at masters and doctorate levels. It is accepted that skills in these areas are of strategic, as well as immediate, importance for the maintenance of European nuclear operations and options within the evolving EU economy.

The skills in nuclear areas are also important for meeting the challenges presented by beyond design basis nuclear accidents caused by human failures, natural disasters, terrorist and sabotage activities (e.g., the Windscale fire, the Chernobyl accident, or Fukushima Dai-ichi NPP accident) where not only handling the technical situation but also making sure that information and recommendations to the public are correct and relevant is of key importance. As an example of the importance of the skills in nuclear chemistry, the on-going treatment of the vast volumes of water contaminated in the Fukushima Dai-ichi NPP during the accident may be listed. Several of the processes and materials used in Fukushima have been developed by nuclear chemists from the partner institutions of CINCH-II project – University Helsinki or CEA – Commissariat à l'énergie atomique et aux énergies alternatives.

2 NATURE AND SCOPE OF THE PROJECT

In order to mitigate the effects of the decline of number of staff qualified in nuclear chemistry, the CINCH-I project http://www.cinch-project.eu) aiming at the Coordination of education In Nuclear CHemistry has been supported within FP7 Euratom from February 2010 to January 2013.
The CINCH-II project - Cooperation in education and training In Nuclear Chemistry – is a Coordination Action and it will be a direct continuation of the CINCH-I project. The CINCH-II project aims at mobilization of the identified existing fragmented capabilities to form the critical mass required to implement the courses and meet the nuclear chemistry postgraduate education and training needs of the European Union.

The project is built around three pillars - Education, Vocational Education and Training (VET), and Distance Learning - supported by two cross-cutting activities – Vision, Sustainability and Nuclear Awareness that includes also dissemination, and Management.
The main objectives of the project are:

- To further develop and implement the plan for the European master's degree in nuclear chemistry (NRC EuroMaster). This relates to the requirement for a common mutual recognition system development addressed by the Call.
- To complete a pan-European offer of modular training courses for the customers from the end-users, including the accreditation issues. The work will consist in implementation of the course system developed in CINCH-I. This relates to the requirement for the modularity of courses and common qualification criteria development addressed by the Call.
- To develop a Training Passport in Nuclear Chemistry and prepare the grounds for the European Credit system for Vocational Education and Training (ECVET) application in nuclear chemistry.
- To implement modern e-learning tools developed in CINCH-I and to further develop new tools for the distance learning aiming at enhancement of the teaching in nuclear science. Introduction of such systems substantially decreased demand for actual travel of trainers and trainees across the EU while enabling to achieve the results expected from a complex system including extensive mobility. This relates to one of the requirements of the Call, it is one of the expected components of any EFTS, and it significantly increases effectiveness of investments into education and/or VET.
- To lay the foundations of a Nuclear Chemistry Education and Training Platform as a future sustainable Euratom Fission Training Scheme (EFTS) in Nuclear Chemistry, based on the already established CINCH consortium and its Associated Partners.
- To develop a Sustainable Systems for Mobility securing mechanisms for an efficient mobility program of trainers and trainees within the Nuclear Chemistry Network. This directly relates to the requirement for the facilitation of mobility of trainers and trainees across the EU addressed by the Call.
- To develop methods of raising awareness of the possible options for nuclear chemistry in potential students, academia and industry. This relates to the requirement for a feedback from the ‘employers’ from public or private sectors addressed by the Call.

3 ACTIVITIES

The objectives described above will be achieved by the following activities:

- Making full use of the knowledge and experience gathered and tools developed and demonstrated in CINCH-I project
- Gathering in the Consortium representatives of both the Suppliers (academia) and End-users (future employers). This will enable to design a syllabus responding not only to the current but also to the future nuclear chemical education and training needs, such as e.g. pyrochemistry for the future nuclear fuel cycles.
- Assembling, comparing and evaluating approaches to, principles of, and experience with the education and training existing in various EU countries, such as e.g. PhD student coaching, mentoring of new professionals, internships / apprenticeships at end-users, Post-doc positions, regular and virtual classroom training, face-to-face and distance learning, etc.
- Putting enough stress on practical education, aiming at, e.g., a database of practical exercises in nuclear chemistry, or simulations, RoboLab (remote controlled laboratory experienced with video feedback) and hands-on components in all relevant courses developed.
- Developing new common study materials in the areas where such need was identified in the CINCH-I project.
- Development and/or adaptation of courses for electronic educational platforms and making them accessible for teachers and institutions either for free (through NukWik) or based on individual agreements (CINCH e-learning platform).
- Making full use of the existing knowledge and expertise, especially that gathered by:
  - ENEN association.
  - Division of Nuclear and Radiochemistry of EuCheMS (DNRC).
  - IAEA
  - Training modules of the earlier and parallel EURATOM “chemical” IPs and NOEs, namely that of TALISMAN, SACSESS, SKIN, ASGARD or FAIRFUELS.
  - Transforming and extending the CINCH Advisory Board into End-users and Advisory Group (EAG) and making full use of its feedback emanating from the interaction of the end-users, academia, and NGO (such as ENEN association) represented in this body.
  - Utilizing the experience of the CINCH Associated Partners.
  - Making full advantage of the well-proven five-phase (Analysis, Design, Development, Implementation, Evaluation) Systematic Approach for Training (SAT1) developed by IAEA and used in all other EFTSs of EURATOM FP-7. This also relates to the requirement for a feedback from the ‘employers’ from public or private sectors addressed by the Call.

The proposed activities have been organized into 4 technical and one management work-packages.
The technical WPs are:
WP1: EuroMaster in Nuclear Chemistry
WP2: Completing a pan-European Offer of Training Courses for the Customers from the End-users
WP3: Using Modern E-learning Tools to Enhance Teaching in Nuclear Science
WP4: Vision, Sustainability and Awareness.

4 EXPECTED RESULTS

Foundations of a permanent Nuclear Chemistry Education and Training Platform as a future sustainable Euratom Fission Training Scheme (EFTS) in Nuclear Chemistry, will be laid by the CINCH-II project. This permanent EFTS will, among other, provide a platform where the courses developed within the training packages embedded in the on-going or recent EURATOM "chemistry" IPs and NOEs (e.g. ACTINET, ACSEPT, TALISMAN, SACSESS, SKIN, ASGARD, FAIRFUELS, etc.) will remain available to several generations of students and research workers.

Implementation and further development of modern e-learning tools, and especially making them available to a broader public, will offer a unique distance learning opportunity to students as well as young and experienced research workers from the nuclear chemical community. The use of e-learning will also develop the internet culture and its social and economic acceptation among the target group.

The following tools will be developed:

- NukWik - an open platform for sharing teaching material
- e-leaning course modules on the existing CINCH e-learning platform
- problem solving sets for "Computers in Education"
- "RoboLab" remote controlled exercises
- simulation exercises

In addition to the transfer of high-level competences, this will:

- Increase cohesion and international cooperation both within the nuclear chemical community and with other players in the nuclear energy field.
- Help the professionals of nuclear sectors to join the process of vocational education and training and to be able to remain competitive within the labour market.
- Create a tool, which is accessible to all European parties (e-inclusive) thus help bridging universities, research centres and nuclear industries with SMEs and contributing to future cooperation between them.
- Promote the use of Internet and new IT based technologies.

5 SOCIETAL IMPACTS

It is accepted that skills addressed by the CINCH-II project are of strategic, as well as immediate, importance for the maintenance of European nuclear operations and options within the evolving EU economy. They are also important for meeting the challenges presented by unpredicted nuclear events (e.g., the Windscale fire, the Chernobyl accident, natural disaster triggered Fukushima accident, terrorist and sabotage activities). In such situations, handling the technical situation is of the same key importance as making sure that information and recommendations to the public are correct and relevant. Further, it should not be forgotten that the demand for the skills in nuclear chemistry would increase rather than decrease if Europe decides not to further develop its nuclear energy fleet. The reason for that is that decommissioning the nuclear installations, especially facility and/or land decontamination, requires even more (nuclear) chemistry than their operation.

In line with the objectives formulated in the Call under the topic Fission-2013-5.1.1: Euratom Fission Training Schemes (EFTS) in 'Nuclear Fission, Safety and Radiation protection', the Consortium will create a basis of private-public partnerships that will have all the prerequisites to further expand and to spread over many years. Through this partnership, the transfer of higher level knowledge and technology will be maximized; young students as well as experienced research workers will be addressed. As it was demonstrated in CINCH-I, the opportunity to meet with colleagues from the entire Europe during the joint modular courses developed in the project and delivered by the leading experts in the field can increase the attractiveness of research careers in nuclear chemistry across the EU.

6 INFORMATION ABOUT IMPORTANT PUBLIC EVENTS

The public will be continuously informed throughout the project via website and press releases to publicise the projects key events such as, lectures, trainings, courses, open seminars, summer schools and international conferences organized in order to share the knowledge gathered in the frame of the project.

The project outcome will be of generic value and can be exploited by other communities. The optimized international blend of e-learning, joint modular courses, common databases of teaching aids, etc. with the parallel education and training at national level may be useful namely in the fields with low numbers of learners for making the education and training more effective and attractive. Therefore, it is of strong interest to the project and its partners to disseminate its ideas and results to a community as wide as possible, not limiting itself to the nuclear chemical one.

7 PROJECT INFORMATION

Website address: www.cinch-project.eu
Project type (funding instrument): Coordination Action
Project start date: 01/06/2013
Duration: 36 months
Total budget: 2.151.535 EUR
Maximum EC contribution: 1.164.966 EUR
EC project officer (name, address, email):
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List of Beneficiaries:

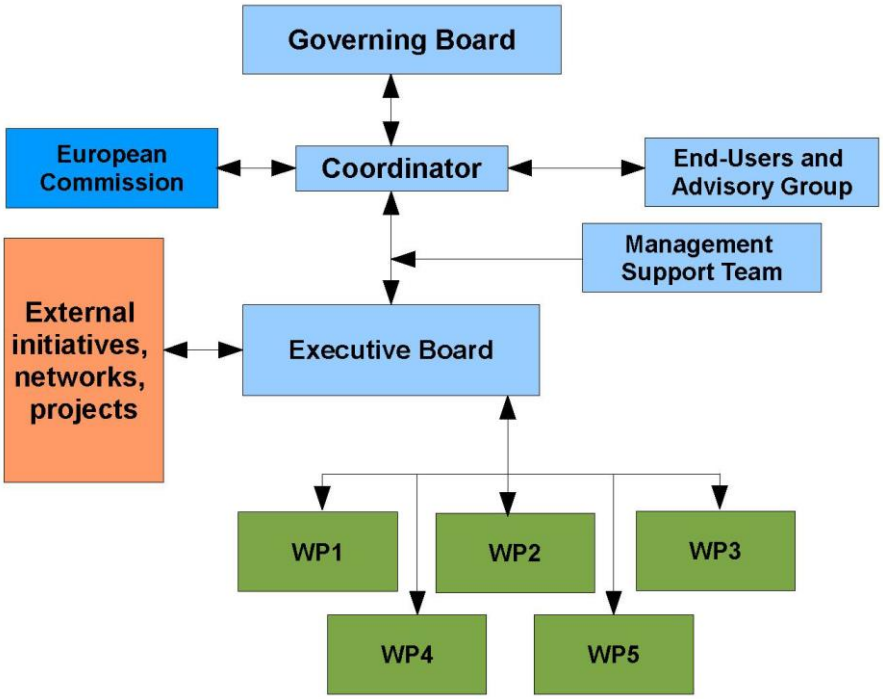
Partner number	Partner full name	Short name	Country code
1	Ceske Vysoke Uceni Technicke v Praze	CTU	CZ
2	Chalmers University of Technology	CHALMERS	SE
3	Helsingin Yliopisto	UH	FI
4	National Nuclear Laboratory Limited	NNL	UK
5	Gottfried Wilhelm Leibnitz Universitaet Hannover	IRS	DE
6	Loughborough University	LU	UK
7	Evalion s.r.o.	EVALION	CZ
8	Commissariat a l´énergie atomique et aux energies alternatives	CEA	FR
9	University of Leeds	UNIVLEEDS	UK
10	Universitetet for Miljo og Biovitenskap	UMB	NO
11	Universitetet i Oslo	UiO	NO

8 ANNEXES

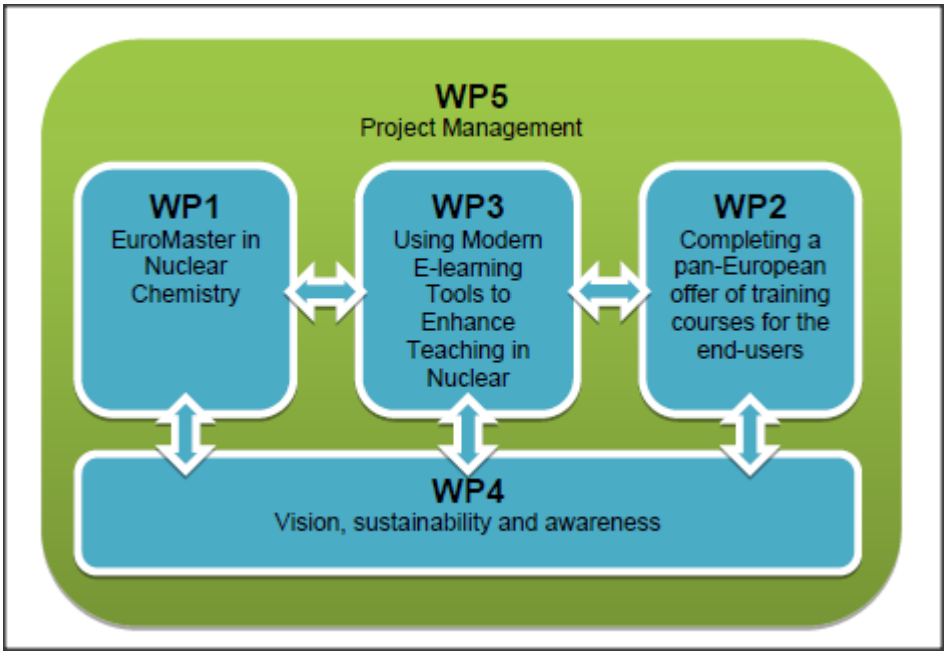
8.1 Project logo

The CINCH-II project will continue with using the original CINCH logo.

8.2 Project organisation



8.3 Project Pert diagram



8.4 Photos