Brief report on the current situation of the Cherne Network

Isabelle Gerardy
HE2B-ISIB (Brussels)
Secretary of the Cherne Network
What is the CHERNE Network

- Open network bringing together academic institutions involved in education in Nuclear Engineering and Radioprotection (www.cherne.ntua.gr)
- 19 partners representing 8 countries
- Created in 2005
- Allows the sharing of large experimental devices and specific competences of teaching staff
- Organizing different learning/research activities:
  - Specific course of an Institution open to students of partners (increase the teaching offer)
  - IP courses (with the support of the European Lifelong learning program)
  - Erasmus exchanges
  - Access to PhD
A minimal administrative organisation.

**Secretary** elected at the annual meeting.
- Helped by an advisory committee

**Web page** through which the activities of the network are communicated: [www.cherne.ntua.gr](http://www.cherne.ntua.gr)

**Bulletin** (Agnès Peeters)

**Databases** for Erasmus placement and skills (Caroline Licour)

**Annual Meeting** to evaluate the activities of the network and discuss new proposals.

**Annual Workshop** open to non-members.

For the moment no fee is foreseen for CHERNE membership.
CHERNE membership

- Academic institutions,
- research institutions,
- companies or
- individuals

- are accepted as members on presentation by two members, including at least one European academic member.

- Documents for this presentation as well as the list of partners can be found at the platform

- According to the declaration voted during the 11th council, Associated members who didn’t participate in any CHERNE activity during the last 5 years or were not present at any yearly CHERNE workshop during the last 5 years will not remain a member of the CHERNE network
MEMBERS according to the last council

Full members
- Universidad Politécnica de Valencia (UPV), Valencia (Spain)
- Institut Supérieur Industriel de Bruxelles (ISIB) - (Belgium)
- Hasselt University, Diepenbeek (Belgium)
- University of Applied Sciences Aachen, Jülich Campus (Germany)
- Czech Technical University in Prague (Czech Republic)
- Facoltà d’Ingegneria, Alma Mater Studiorum - Università di Bologna (Italy)
- National Technical University of Athens (Greece)
- Aristotle University of Thessaloniki (Greece).
- Università degli Studi di Catania (Italy)
- Universidade da Beira Interior (UBI), Covilhã (Portugal)
- Universidade de Coimbra (Portugal)

Associated members
- Instituto Superior Tecnico (IST), Lisboa (Portugal)
- Nuclear Engineering Department, Politecnico di Milano (Italy)
- Department of Nuclear Engineering of Università degli Studi di Palermo (Italy)
- Department of Physics, Università degli Studi di Messina (Italy)
- Escola Tècnica Superior d’Enginyeria Industrial (ETSII), UPC, Barcelona (Spain)
- Department of Physics, Università degli Studi di Milano (Italy)
- Universidad de Salamanca (Spain)
- Belarusian State University, Minsk (Belarus).

Individuals
Dr. Dieter Hennig, Berlin (Germany)
Prof. Francois Tondeur, Brussels (Belgium)
Prof. Herwig Janssens, Diepenbeek (Belgium)
cherne activities

- A priority is given to teaching activities for students of member institutions.
- Research, organized in the framework of master/PhD thesis or in a research project has to be enhanced.
- Teaching activities should include at least a one-week/2 ECTS module.
- Practical training, including when possible access to large facilities.
- English is used in CHERNE activities.
- No cost, or very low fee, for students coming from partner institutions.
- Cheap accommodation for students coming from abroad.
- When possible, organisation of CHERNE activities will be included in ERASMUS exchanges.
- Partners are encouraged to sign bilateral ERASMUS agreements.
Professor exchanges

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Professor exchanges

- Isabelle Gerardy [ISIB ➔ UPV, AcUAS]
- Patricia Vanden Cruyce [ISIB ➔ AcUAS]
- Sergio Gallardo [UPV ➔ ISIB]
- Alexandra Ioannidou [UPV ➔ Universita degli studi di Milano, Italy]
- Enrico Zio [Politechnic Milano ➔ UPV]
## Students exchanges

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The table shows the number of student exchanges between universities. For example, there are 2 exchanges between Salamanca and Catania.
### Bilateral agreements

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Past Intensive Programs

- **PAN**: Practical Approach to Nuclear techniques
  - From 2002 to 2004

- **SPERANSNA**: Stimulation of Practical Expertise in Radiological And Nuclear Safety
  - From 2006 to 2008

- **JUNCSS**: Jülich Nuclear Chemistry Summer School
  - From 2008 to 2010

- **ICARO**: Intensive Course on Accelerator and Reactor Operation and applications
  - From 2009 to 2011

- **SARA**: Safe Application of Radiation and radionuclides
  - From 2012 to 2014 (2015)

- **MANTRA**: Medical Applications of Nuclear Techniques and Radiations
  - In 2014
International Courses organised in 2016-2017

Organised without European grants; use internal funds, support from companies, regional grants

- **RADAM**
  - Radiation Detection and Measurement; organised by AcUAs, 1 week
  - Participants from AcUAS, Bologna NTUA

- **Monte Carlo method applications to Laboratory, Industry and Medicine**
  - Organised in ISIB, students from ISIB, Uhasselt, 3 days

- **Environmental radioactivity**
  - Seminar organised by UPV and given by Isabelle Gerardy (HE2B-ISIB using STA)
  - Participants from UPV, CTU

- **Soft Computing**
  - Seminar organised by UPV and given by Enrico Zio (Politecnica de Milano)
  - Participant from UPV but open to others
Strategic partnership

Blended Learning in Radiation protection and radioecology

from September 2015 to August 2017

first intermediate report sent 30 June 2016 and approved by ERASMUS

oral presentation of one training module “MARAWAS” during the Etrap congress (beginning of June 2017)

Objectives:

- Development of a blended learning program in radiation protection and radioecology
- Continuous education program for people already involved in radiation protection
- Acquisition of specific competences in the nuclear field for those who were not involved in nuclear and radiological techniques during their studies
- Contribution towards standardization of the knowledge across Europe in radiation protection and safe use of radioactive materials
Partnership:

- Academic Partners (from the CHERNE network) representing 7 countries:
  - HAUTE ECOLE BRUXELLES BRABANT (ISIB) – BELGIUM
  - UNIVERSITEIT HASSELT (UHasselt) - BELGIUM
  - FACHHOCHSCHULE AACHEN (FH Aachen) - GERMANY
  - UNIVERSITA DI BOLOGNA (UNIBO) - ITALY
  - UNIVERSIDADE DE COIMBRA - PORTUGAL
  - CZECH TECHNICAL UNIVERSITY IN PRAGUE (CTU) – CZECH REPUBLIC
  - NATIONAL TECHNICAL UNIVERSITY OF ATHENS (NTUA) - GREECE
  - UNIVERSITAT POLITECNICA DE VALENCIA (UPV) - SPAIN

- Non-academic partners to add value to the partnership:
  - a research institute: NATIONAL RADIATION PROTECTION INSTITUTE (SURO) – CZECH REPUBLIC
  - a regulatory body: GREEK ATOMIC ENERGY COMMISSION (EEAE) - GREECE

The non-academic partners have been chosen according to their competence in a specific field and their possibilities to promote the program during and after this project.
Intellectual outputs: deliverable proposed

- O1: Analysis of the present situation in radiation protection and radioecology within the European countries
  - Leader Uhasselt
  - Report presented during the previous workshop
- O2: Implementation of course modules on an e-learning platform
  - Leader EEAE
  - Some modules are in finalization phase and will be presented during the workshop
- O3: Training in Radiation Protection and Radioecology
  - Leader CTU
  - All module were done during this academic year 2016-2017
## O2: E-learning modules

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<th>Basics nuclear and radiation physics</th>
<th>Basics of measurement and dosimetry</th>
<th>Radiation protection</th>
<th>General safety principles</th>
<th>Basics radiochemistry</th>
<th>Medical applications</th>
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<td>UPV, EEAE</td>
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## O3: Training modules

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<th>Environmental measurements</th>
<th>Safe industrial applications of radiation and radionuclides</th>
<th>Radio-chemistry</th>
<th>Radioactive waste management</th>
<th>Practical radiation protection in medical field</th>
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First reflections about this year (1)

- About seminars, courses
  - 4 courses organised
    - This workshop is the best place to share idea and to develop courses....
  - Reliability is increased ➔ more course seems to be possible to organise each year
  - Some students seems to have more facilities to move...
  - SP was very time consuming for all the partner involved....no more time to do other things
    - But we have to think about sustainability of the module

- About partners
  - Always some inactive partners since a (very) long period; will be excluded after 5 year of total absence of activity

- About students
  - Always really enthusiastic about meeting other students, acquiring new knowledge
First reflections about this year (2)

- About tools
  - bulletins to share experiences, announcement of activities, ...
  - Platform quite used
  - E-learning platform used mostly to prepare training modules

- About money
  - Still mostly related to short term mobility of students (more possibilities for short term mobility of staff like STA...)
  - Help for student mobility possible in some institutions if related to some research project
  - Difficult when no possibility of European funds
  - Need to obtain some financial support of companies but also national or regional fund; but how to do it?
Thanks for your attention