



## **2<sup>nd</sup> JRC-IET Workshop on Nuclear Job Taxonomies-ECVET**

IET - JRC, Petten (The Netherlands)

20<sup>th</sup> – 24<sup>th</sup> Feb 2012

### **1. INTRODUCTION AND OBJECTIVES**

The ECVET (European Credit System for Vocational Education and Training) has the aim to facilitate the validation, transfer, recognition and accumulation of learning outcomes, obtained in the different types of learning (formal training, informal training, experience and non formal) considered as part of a long-life process.

Therefore in the ECVET system it is necessary a common language for recognition and harmonization, throughout EU-27 and other ECVET partners (Copenhagen process has been signed by 33 countries).

The Institute for Energy and Transport is engaged through its action CAPTURE and EHRO-N, which it is managing the analysis of the present and future needs in terms of human resources in the nuclear area with the purpose to support, in cooperation with stakeholders and institutions, actions oriented to the preservation and development of the necessary competences. In this frame the activities to contribute to the implementation of ECVET in the nuclear area have been initiated with the initial goal of the development of a harmonised European nuclear job taxonomy which might serve as base for the further definition of learning outcomes, units and qualifications.

In October 2011, the IET-JRC organised a workshop in Bergen (The Netherlands) to initiate the development of the nuclear taxonomy

Taking into account the results of this first meeting the Institute for Energy and Transport (JRC-IET) has organised a second workshop with experts in human resources, training and education and/or operational experience within the nuclear area with the purpose of continuing with the preparation of the job taxonomy. The present document reports on the activities carried out during the workshop and the actions derived from the outcomes achieved and the general issues discussed.

### **2. PARTICIPANTS**

The Workshop has been held at the Institute for Energy and Transport in Petten (The Netherlands) with the attendance of the following participants:

The invited experts

- Bogdan BUHAI, from AREVA (France/Germany)
- Mihail CECLAN, from University of Bucharest-UBA (Romania)
- Jesús IGLESIAS MORÁN, from TECNATOM (Spain)
- Izabela KULPA, from PGE (Poland)
- Paul LIVOLSI, from CEA/INSTN (France)
- Marjatta PALMU, from Posiva Oy (Finland)
- Lyubomir PIRONKOV, from Kozloduy NPP (Bulgaria)
- Heleen VAN ELSÄCKER-DEGENAAR, from NRG (The Netherlands)

The internal experts

- Borislava BATANDJIEVA, from JRC-IET F.05 (The Netherlands)
- Manuel MARTIN RAMOS, from JRC-IET F.05 (The Netherlands)

The organizers

- César CHENEL RAMOS, from JRC-IET F.04 (The Netherlands)
- Bianca HIRTE, from JRC-IET F.04 (The Netherlands)
- María Alicia LACAL MOLINA, from JRC-IET F.04 (The Netherlands)

### **3. SESSIONS**

The workshop consisted of three types of sessions:

- Opening session held on day 1
- Parallel Work sessions held from day 2 to day 5.
- Plenary Work session held on day 4 afternoon
- Closure debate held on day 5.

#### **3.1. Opening session**

The participants introduced themselves, explaining their professional background, their familiarity with ECVET and their preference regarding the NPP life-cycle area in which they would contribute.

As foreword the organisers made two presentations:

- Definition of an ECVET-oriented Job Taxonomy: objectives, overall goals, competence typology.
- ECVET within CAPTURE and EHRO-N: ECVET introduction, keywords, key concepts, tools, methodology, planning.

Two of the participants, Mihail Ceclan and Paul Livolsi, presented also their work in relation to ECVET. Both are working in the Euratom FP-7 Project ENETRAP II in which some deliverables are developing an ECVET system as pilot project, and explained the conceptual principles they use and their proposed pathway from job contents to required learning outcomes.

Following, a common discussion was initiated in order to explain the status of the activity and to meet common agreement and understanding on the basic concepts, the methodology and the work tools -KSC list, job template, criteria for the application of the EQF descriptors, job profile list, etc. The organisers, based on the experience and conclusions from the first meeting and within the guidelines given in the ECVET reference documents, presented their proposals for these aspects, which were generally agreed by the experts.

### **3.2. Workshop sessions**

According to the plan in the agenda and considering the fields of knowledge of the experts and their preferences, the workshop was split up into two teams. M. Ceclan and P. Livolsi, both belonging to a cross-cutting discipline –radiation protection-, gently accepted to join the decommissioning team, where the number of experts was smaller and there was a stronger need due to the fact that no profile had been developed yet.

#### **3.2.A. NPP CONSTRUCTION-OPERATION TEAM (BLD. 325 – MEETING ROOM)**

Moderated by C. Chenel

- Bogdan BUHAI
- Jesús IGLESIAS MORÁN
- Izabela KULPA

- Marjatta PALMU (till 3<sup>rd</sup> day morning)
- Lyubomir PIRONKOV
- Heleen VAN ELSÄCKER-DEGENAAR

During the first sessions a big part of the discussion kept attached to methodological issues such as the convenience of working on the word template or preparing the job profiles by marking the relevant items in the excel KSC spreadsheets, or theoretical debates about the inclusion of new concepts in the behavioural competences.

At some point it was decided to prepare standard job templates that could be used as starting point for completion of the specific jobs. Some examples were made following job categories. The convenience of a similar exercise for functional areas was considered too. For the last part of the workshop the method used in the other team was adopted, with individual preparation of the profiles combined with common subsequent review.

Despite the discontinuity in the progress of the preparation of the taxonomy caused by the conceptual and methodological discussion, by the end of the workshop the following profiles were produced and reviewed

- Construction Project Manager
- Chemistry Manager
- Electrical Construction Engineer
- Electrical Commissioning Engineer

And the following ones were prepared but not reviewed:

- Electrical Discipline Engineer
- Mechanical Commissioning Engineer
- I&C Commissioning Engineer
- Licensing Manager – Commissioning
- Maintenance manager

Of those, the first four were reviewed during the meeting.

Additionally two templates were created for generic manager and engineer positions.

### 3.2.B NPP DECOMMISSIONING (BLD. 309 – ROOM 015)

Moderated by M. A. Lacal Molina

- Borislava BATANDJIEVA

- Mihail CECLAN
- Paul LIVOLSI
- Manuel MARTIN RAMOS
- Marjatta PALMU (since day 3 on)

Considering that NPP decommissioning phase had not been developed in the first meeting, in this team the discussion started with the review and modification of the initial job profile list.

Once having a draft document (open for modifications during all the meeting), the team discussed the working system regarding their different background and expertises.

The team agreed to work individually on selected profiles and to put in common their work in several moments of the working sessions, mainly at the beginning of the day.

Therefore, regarding this system, the results of these common working sessions would be presented as a result of this team to the other participants at the end of the meeting.

During these sessions four positions were fully completed and reviewed:

- Radiation Protection Manager (RPE)
- Radiation Protection Supervisor (RPO)
- Radiation Protection Worker
- Dismantling Worker

The following profiles were drafted but not reviewed:

- Licensing Manager - Decommissioning
- Decontamination Supervisor
- Dismantling Supervisor
- Site Engineer - Decommissioning
- Engineering Support/Modification Manager
- Decommissioning Worker
- Dismantling Planner
- Dismantling Supervisor
- Radioactive Waste Manager
- Radioactive Waste Engineer
- Radioactive Waste Engineer
- Radioactive Waste Worker
- Industrial Safety Engineer

Additionally several changes of the job profile list were adopted as reflected in the Annex I.

### **3.3. Closure session**

The proposal of P. Livolsi for a hierarchical organisation of the taxonomy by means of a digital tool was presented by M. Ceclan.

B. Buhai presented a general overview of the work in which he has been involved within the ENEN III FP-7 project, showing a proposed model for the achievement of qualifications, stepping from identification of learning needs to validation. He also illustrated some examples of the deployment of job profiles into learning outcomes.

Finally several issues were proposed for discussion by the organisers for discussion in order to tune up the approach and to define further actions.

## **4. MATTERS OF DISCUSSION**

In the course of different sessions several issues related to terminology, definitions, improvements of the methodology and work tools were brought up to debate:

**JOB TITLES:** During the first meeting there was agreement on the convenience to include different possible names for the same position with the aim to avoid confusions due to the different denominations depending on the country. In a later stage the ambiguous denominations could go through some proposal for harmonisation. This approach has been maintained. From the profiles prepared it is ascertained the need increase the consistency between the job titles in the job list and in the profiles.

**COMPETENCE DEFINITION:** Due to the common use in the nuclear area of the term "attitude" for what the ECVET literature refers to as the behavioural dimension of competence –usually named also "competence"- the discussion on this wording is recurrent. The organisers stressed the need to follow the definitions and terminology given by the ECVET documents, and explained their view of "competence" as a comprehensive concept which would encompass knowledge, skills and behavioural competence (attitudes).

**COMPETENCE FORMULATION:** The modification in the template to note separately knowledge, skills and competences/attitudes was found suitable. Despite having in mind the idea of competence in the broad sense, containing all three aspects, for practical purposes and to facilitate the later definition of learning outcomes, the definition of K, S and C separately is

found more suitable. The profiles developed during the first workshop should be checked over to fill in their items corresponding to skills and competences.

On the other hand it was found advisable to establish a limit for the number of items under competence for every profile, making a difference between those desirable –virtually all– and those really relevant for the specific job.

**KSCS CATALOGUE:** The enlarged catalogue of KSCs, split now in knowledge, skills and competences, was found a largely improved tool with regard to the initial version. It has facilitated the preparation of much more comprehensive job descriptions.

Nevertheless further modifications are needed, such as avoiding redundancies, including new items (especially those entered in the profiles but not present in the catalogue), detailing items and enhancing the structure.

**QUALIFICATION LEVELS AND EQF DESCRIPTORS:** Given the correlation between the EQF levels 5 to 8 and the corresponding qualification levels of the EHEA, some experts tended to apply the descriptors as a translation of the qualification level (ISCED) required for the post.

The organisers proposed to establish the levels for each particular competence solely in view of the definition in the descriptor, and setting just the level that is considered necessary in the specific competence for the functions associated to the job. This means that levels that could be assumed from the educational entry level should not be transferred to the qualifier of the competences as long as it is not required for an appropriate performance. Nonetheless the job profiles are expected to consistently contain a significant number of KSCs in accordance with the required academic level.

Another issue detected related to the application of the EQF was the difficulty to apply them to some items or of behavioural competence.

**TAXONOMY STRUCTURE:** Paul Livolsi proposed a hierarchical structuring of the job list, using a digital template that splits from the main three categories of jobs down to the items within every profile. Similar articulation could be applied also to the KSC Catalogue, facilitating the quick transfer of the items into the profiles. The implementation of this type of layout was found potentially useful. Besides using it in future workshop sessions, there is also the possibility to shape it as a database or another digital format that could be uploaded and allow online input.

**WORK METHODOLOGY:** The individual drafting of the profiles followed by common review was more effective to advance with the taxonomy. The preparation of templates with the basic contents for job families, either per post category or functional area, is advised to facilitate

the drafting. Moreover, for an optimisation of the outcome of future meetings, is necessary having previously drafted versions of the profiles, if possible already peer-reviewed. In this way the meeting could be dedicated to final revision and homogenisation of the taxonomy. Several participants expressed their willingness to contribute to this preparatory work.

**QUALITY ASSURANCE:** The need to undergo a quality assurance control was ascertained essential to validate the final job taxonomy. Several participants pointed out the importance of involving industrial stakeholders in this validation, signalling the nuclear industry trade associations as representative agents.

**PARTNERSHIPS:** It is known that several organizations and platforms have undertaken activities for the creation of nuclear training programs or nuclear job taxonomies, in some cases adopting ECVET-oriented approach. On the other hand, within the European institutions there are institutions –namely CEDEFOP and DG EAC- which could provide an important input, giving guidelines for the better application of the ECVET specification to the job taxonomy and envisaging the further route map for a nuclear ECVET. The JRC-IET ECVET team is prompted to initiate or increase contacts with those actors in order to establish punctual or stable partnerships, and to foster the ECVET awareness among the nuclear platforms in the area of training and human resources.

## **5. PROPOSED ACTIONS**

- 1/ Initiating practical arrangements for a third workshop, seeking for the involvement of CEDEFOP to provide logistic arrangements and general ECVET expertise and trying to broaden the representation of industrial stakeholders and relevant institutions and platforms.  
Resp.: B. Hirte and A. Lacal.
- 2/ From the initial pool of participants in both ECVET meetings, gathering a panel of contributors committed to regular collaboration in the production of work documents for the 3<sup>rd</sup> nuclear ECVET workshop –i.e. draft and review of job profiles.  
Resp.: JRC Team
- 3/ Based on the profiles developed so far, drafting templates for the different job categories and functional areas and, as far the examples available make it possible, preparing first versions of specific profiles.  
Resp.: JRC Team
- 4/ Advance further in the reformulation of the KSC catalogue: redundancies, missing items,



detailing specific items.

Resp.: C. Chenel

- 5/ Considering and if required implementing the adaptation of the contents of the job taxonomy –job list, profiles and KSC catalogue- into a digital hierarchy-organised format (master document, database or other) which can streamline its handling and modification.

Resp.: C. Chenel and A. Lacal

- 6/ Studying the suitability and resources available in-house to upload contents or work documents to the web, either public or with restricted access, in order to gain visibility and/or provide online tools to the possible contributors.

Resp.: JRC Team

- 7/ Establishing contact with different institutions involved in the nuclear training development and/or competent for implementation of ECVET to explore possible ways of cooperation, by mean of long-sustained contribution or for specific joint activities: OCDE-NEA, DG EAC, CEDEFOP, nuclear platforms.

Resp.: A. Lacal

## **6. ACKNOWLEDGMENTS**

The organisers would like to express their gratitude to the participants in the workshop for their committed and cooperative attitude and for their willingness to make possible the development of this activity with their expert contribution.

Annex: Updated List of Job Profiles

