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SEVENTH FRAMEWORK PROGRAMME

WP2: Second Report

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1. Introduction

The primary focus of the wider ENETRAP II project is the development of European reference standards for education and training in radiation protection. However, there are a number of subsidiary objectives within the project relating to issues associated with mutual recognition between Member States of, not only education and training, but also any status conferred(in part) by that training; specifically the status of Radiation Protection Expert (RPE) and Radiation Protection Officer (RPO)

The requirements for formal recognition of Radiation Protection Experts (RPEs) and the development of methodologies for both national and mutual recognition is being addressed within Work Package 2 of ENETRAP II.

The specific objectives of WP2 are:

- To define the requirements for national and mutual recognition of RPEs within EU Member States.
- To provide guidance with respect to national schemes for recognition of RPEs.
- To develop a mechanism for the mutual recognition of RPEs between Member States

These objectives to be met by the following work programme:

(i) On the basis of the outcomes of ENETRAP FP6 and on outcomes and recommendations from EUTERP, establish the key requirements for the recognition of RPEs.
(ii) Develop guidance with respect to the essential components of national schemes for RPE recognition.
(iii) Establish required criteria for the mutual recognition of RPEs between Member States.
(iv) Develop a mechanism (based on the established criteria) for mutual recognition of RPEs.
(v) Provide guidance with respect to the application of the developed mechanism.

Proposals for the key requirements for RPEs along with guidance for the essential components of national schemes for RPE recognition (task (i) and (ii) above have been presented as the first deliverable of WP2 (Interim report March 2010). This report addresses the second deliverable of WP2 – proposed criteria for the mutual recognition of RPEs between Member States and guidance (based on these criteria) as to how mutual recognition could be achieved in practice (tasks (iii) – (v) above).

2. Mutual Recognition

2.1 Concept

A general system for the mutual recognition of professional qualifications within the EU has been established by Directive 89/48/EEC (supplemented by Directive 92/51/EEC). It is aimed primarily at those who are qualified to practice a profession in one Member State and wish to have that qualification recognized in another in order to practice that same profession there. It applies when a Member State requires a qualification (or specified status) in order to practice a profession on its territory.

The following definition for the RPE has been included in the current working draft of the revised BSS Directive :

> "*Persons having the knowledge, training and experience needed to give radiation protection advice in order to ensure effective protection of*

individuals, whose capacity to act as radiation protection expert is recognized by the competent authorities."

During the course of work programme for WP2 there was nothing to indicate that this definition is likely to change significantly. As such, proposals and guidance developed by WP2 has been made on the basis of this text. Inherent in this definition is that the RPE is and individual whose capacity (ability) to undertake the role effectively is "recognized" - or endorsed and acknowledged – by the national Regulatory Authority. Considered from a wider perspective, in practice this means that each Member State requires a qualification/status for any individual wishing to practice this profession on its territory.

On the basis of the above, the concept of mutual recognition is clearly applicable to RPEs within the EU.

2.2 Value

It is perhaps important to re-iterate the objective of RPE recognition on a national basis. Put simply, the objective is to provide the employer/licensee with confidence that the expert he chooses to consult with has the necessary core competence to give advice over a wide range of radiation protection issues. This being the case, the recognition process – however it operates- should seek to ensure that competence is adequately and appropriately assessed so that the status of RPE, once gained, need not be questioned.

With respect to RPE recognition on an international basis, the primary objective of "mutual" recognition of RPE status between Member States must be to facilitate the movement of RPEs between countries. This being the case, the process of mutual recognition should, as far as is practicable, be pragmatic and straightforward.

2.3 Specific Objectives

The two key tasks for this first phase of the work programme of WP2 were a) to establish the key requirements for recognition of RPEs and b) on the basis of these requirements develop guidance with respect to the implementation of national recognition schemes.

It was important, when undertaking this first phase, to bear in mind that the next phase in the work programme would be to establish criteria for "mutual recognition" between Member States. It is clear that if effective mutual recognition is to be achieved then there must be a good degree of commonality with respect to the key elements of, and criteria applied to, the various national schemes. It was also important to respect the fact that the majority of EU Member States have well established radiation protection infrastructures and any models or mechanisms for recognition should reasonably be expected to fit into those existing infrastructures. The overarching objective, therefore, was to work towards an outline model for national recognition schemes which, if adopted by Member States would not only:

- Ensure sufficient flexibility for Member States to establish systems for RPE recognition that can be readily accommodated within national infrastructures, but also

- Ensure a degree of commonality sufficient to facilitate mutual recognition of RPE status between Member States.

This objective was achieved. The two outputs from Phase I of Work package 2 were

- A proposal for criteria for RPE core competence, and
- A proposal for how national schemed for RPE recognition could operate

These are presented in Figs 1 and 2 respectively for information

Fig 1: Criteria for RPE Core Competence

An individual may be deemed as having the core competence necessary to act in the capacity of a Radiation Protection Expert, and be formally recognized as such by the national Regulatory Authority if he/she is able to satisfy the following criteria:

(i) An education to:

Bachelor degree level either specifically in radiation protection, or in a physical/engineering/mathematical discipline

OR

An academic equivalent

(i) Knowledge and understanding of each of the topics in the basic/reference syllabus

(ii) Knowledge of operational radiation protection methods

(iii) The ability to develop and provide appropriate advice with respect to

Legislation ***Hazard/Risk Assessment*** ***Optimization***

Area Monitoring ***Personal Dosimetry***

Classification of Areas ***Categorisation of Workers***

(iv) A minimum of 3 years experience working in radiation protection environment

Note: With respect to (iii) and (iv) above it is considered to be the responsibility of the Regulatory Authority, or a 3rd party operating with the approval of the Regulatory Authority to establish any further detailed criteria that may be deemed necessary

Fig 2: National Schemes for RPE Recognition*

Establishment of overall framework	Requirement for RPE Recognition to be **established in national legislation** ↓ **Basis on which RPE Recognition will be awarded** (ie criteria for core competence) to be established ↓ An appropriate number of assessors/assessing bodies to undertake the **assessment of core competence** should be identified. Regulatory Authority to establish criteria that assessor(s) must satisfy. ↓ Individuals/organizations with **authority to award recognition** of core competence should be identified by the Regulatory Authority
Operation of scheme	Once eligible, prospective RPEs submit required **documentary evidence** to the assessor(s)/assessing body. ↓ Assessors consider evidence and conduct **interview** with prospective RPE. ↓ Outcome of assessment notified to those with responsibility for **awarding recognition**. If criteria if competence satisfied, individual is awarded RPE status, **valid** for not more than 5 years. ↓ At end of period of validity RPE should apply for **re-recognition**

***** Expanded guidance with respect to each specific component of the scheme (denoted in bold) is given in appendix 1.

As noted in the discussion above, mutual recognition for RPEs will only operate effectively if the models used for recognition within participating Member States are broadly similar. It is assumed, for the purposes of the discussions and proposals put forward in the following sections that the national model as outlined is that used by Member States .

3. Criteria for RPE Recognition: Analysis

In very simple terms "mutual recognition" means that RPE status gained in one country is accepted by another country - and the individual in question does not have to go through the full process of RPE recognition again in order to practice in the new country. In the following sections each of the criteria in Fig 1 are considered with respect to the validity (in practice) of that approach.

3.1 Education

An individual may be deemed as having the core competence .....subject to the following criteria...

(v) An education to:

Bachelor degree level either specifically in radiation protection, or in a physical/engineering/mathematical discipline

OR

An academic equivalent

An RPE who has been recognized within his/her home country will, by definition have satisfied the above criteria. This basic educational foundation for RPE status is one of the first steps towards RPE development; once achieved it is not revisited. This aspect of competence is transferable to another Member State; evidence of educational level actives will be have been provided at the time of first recognition further investigation or requests for evidence/proof are not necessary.

3.2 Basic/Reference Syllabus

An individual may be deemed as having the core competence .....subject to the following criteria...

(ii) Knowledge and understanding of each of the topics in the basic/reference syllabus

The "basic/reference syllabus" referred to here is the proposed European reference syllabus for RPE training (post degree). Further development of this syllabus (a first draft was developed under ENETRAP FP6) is being undertaken in WP 5 of ENETRAP II , the objective being that this becomes the standard reference for RPE training, acknowledged by and reflected in the courses offered by training providers within Europe.

Again, this is a transferable component; the topics covered within the syllabus are, in the main scientific and/or technical and the acquired knowledge and understanding valid irrespective of where the training was obtained. Evidence of training undertaken will have been provided at the time of first recognition; further investigation or requests for evidence/proof are not necessary. (Note : see discussion in section 4.3)

3.3 Competence/experience in operational radiation protection

An individual may be deemed as having the core competence .....subject to the following criteria...

(iii) A knowledge of operational radiation protection methods

In order to gain national recognition, the RPE will have had to provide evidence that he/she has a good understanding of operational radiation protection and can use this to formulate appropriate advice. For anyone holding RPE recognition, this is one of the key components of core competence.

There is no reason why this should not be a transferable component. However, those undertaking the assessment of evidence provided during any initial assessment will have had the advantage of judging the validity and quality of the evidence produced in context. That is, they will have seen where and how experience was gained, information which does assist with the assessment process. An assessing body being asked to confer mutual recognition on a visiting RPE is perhaps at a disadvantage. It is suggested that while the core competence is accepted, the prospective RPE should be required to provide a resume of experience gained as a recognised RPE.

3.4 Development & Provision of Advice

An individual may be deemed as having the core competence .....subject to the following criteria...

(iv) The ability to develop and provide appropriate advice with respect to

Legislation Hazard/Risk Assessment Optimization

Area Monitoring Personal Dosimetry

Classification of Areas Categorization of Workers

There are two issues with respect to this component.

i) *The topic areas*

Having a good understanding of the operational "basics" of radiation protection, ie hazard/risk assessment, optimization, area monitoring, personal dosimetry, classification of areas and categorization of workers is a fundamental skill for an RPE. An RPE having gained recognition in his/her home country will have provided evidence to demonstrate competence in this area and there is little need, or value, in an assessing body in re-assessing this evidence.

However, "legislation" is clearly a country-specific issue; any RPE advising within a country must have working knowledge of the national radiation protection legislation and be able to interpret, and advise in accordance with the various requirements. This being the case, an RPE wishing to practice in a country other than the country in which initial recognition was obtained should only be permitted to do so once he/she is able to demonstrate an appropriate level of knowledge and understanding of relevant national legislation to the RPE assessing body in that country.

ii) Ability to provide advice

The primary function of the RPE, inherent in the RPE definition[1], is to "give radiation protection advice in order to ensure effective protection of individuals". It follows that, in order to fully execute this role, RPEs must be able to communicate effectively with those to whom they are providing advice. In this respect, for RPEs moving between Member States there is the very basic issue of language; any professional will have difficulty communicating effectively with those to whom advice is to be provided if a common language isn't shared. In practice, this is an issue of "suitability" rather than core competence but it is a relevant consideration with respect to mutual recognition.

For example, if an RPE from the UK wished to work at CERN in Switzerland but did not speak any other language than English then that probably wouldn't be a problem. However, if UK RPE wished to provide advice within the NDT community in Switzerland then the lack of local language would be a significant impediment to effective communication to the extent that he/she would not be considered a suitable choice.

3.5 Experience

An individual may be deemed as having the core competence .....subject to the following criteria...

(v) A minimum of 3 years experience working in radiation protection environment

Anyone already recognised as an RPE will have at a least 3 years experience working in a radiation protection environment. However, as noted above, for the purposes of mutual recognition, it would probably be appropriate for the RPE to provide the assessing body with a summary of professional experience.

3.6 Summary

The conclusions of the above discussion are summarised in Fig 3 overleaf. In effect, this establishes the criteria for mutual recognition in practice.

[1] Revised working draft of the BSS: "Persons having the knowledge, training and experience needed to give radiation protection advice in order to ensure effective protection of individuals, whose capacity to act as a Radiation Protection Expert is recognised by the competent authorities".

Fig 3: Aspects of mutual recognition

Component of Recognition	Transferable (Y/N)	Further Evidence Required by Assessing Body?	Further Action Required by RPE?
(i) An education to : Bachelor degree level either specifically in radiation protection, or in a physical/engineering/mathematical discipline *OR* An academic equivalent	Yes	No	No
(ii) Knowledge and understanding of each of the topics in the basic/reference syllabus	Yes	No	No
(iii) A knowledge of operational radiation protection methods	Yes	Summary of the disciplines/sectors in which experience was gained would be of value.	No
(iv) Ability to develop and provide appropriate advice with respect to legislation, hazard/risk assessment, optimisation, area monitoring, personal dosimetry, designation of areas, classification of workers	Yes – with exception of "legislation" In addition, fluency in languages of the "new" country must be considered	Yes	RPE to gain knowledge/understanding of national legislation – as directed by the assessing body. (May wish to improve language skills)
(v) A minimum of 3 years experience in the radiation protection environment.	Yes	Summary of the disciplines/sectors in which experience was gained would be of value.	No

4. Mechanism for Mutual Recognition

In Fig 2, section 2, the model for national schemes for RPE recognition was outlined. The recognition of RPEs form *other* Member States should be able to be readily accommodated within such schemes; it should be remembered that the objective of "mutual recognition" is that it should be a process that facilitates the movement of radiation protection professional within European Member States. In practice the same general process would be followed - an application is made, the evidence is assessed and then recognition (in effect, authorisation to practice) is/is not awarded on the basis of the assessed evidence. The only difference would be with respect to how the evidence is assessed**.**

The proposed framework of operation of national RPE recognition schemes is reproduced as Fig 3 for clarity. The proposed operation of each individual aspect of the scheme with respect to the recognition of applicant RPEs from other countries is discussed below.

Fig 3 Framework of operation for RPE recognition

Operation of scheme	Once eligible, prospective RPEs submit required **documentary evidence** to the assessor(s)/assessing body. ↓ Assessors consider evidence and conduct **interview** with prospective RPE. ↓ Outcome of assessment notified to those with responsibility for **awarding recognition**. If criteria if competence satisfied, individual is awarded RPE status, **valid** for not more than 5 years. ↓ At end of period of validity RPE should apply for **re-recognition**

i) Submission of documentary evidence

It is proposed the applicant RPE be required to supply -

- Evidence of RPE recognition in home country. This may be in the form of a certificate, letter of recognition etc but it should provide proof that recognition has been awarded by (either directly or via an approved assessing body) the relevant Regulatory Authority.

- A resume of RPE experience. This need not be overly detailed but should include an overview of where (what sectors) advice has been provided and to whom.

- A statement of language ability, ie level of writing/reading/ proficiency in languages other than mother tongue.

- Evidence sufficient to demonstrate knowledge and understanding of radiation protection legislation in the country where the application is being made. Note *the required level of knowledge/understanding should be specified by the Regulatory Authority*

ii) Interview

The assessing body should conduct an interview with applicant. With respect to mutual recognition the primary objectives of the interview are considered to be :-

- To assess knowledge and understanding of national legislation

- To gain an appreciation of level and areas of expertise/experience, and

- To assess communication skills.

iii) Awarding recognition

Within the context of mutual recognition it may be more appropriate to consider this stage as "authorisation to practice as an RPE " in the country in question. Clearly, if the assessing body is not content with any of the information gained in either of the two preceding steps then this authorisation/approval would not be given. However, if all is in order then authorisation should be granted although it may be prudent for the assessing body to include a statement to inform "suitability" in the formal authorisation. For example:

- a list of sectors/applications that the RPE has gained experience in
- any limitations on language skills.

iv) Validity

Validity of any authorisation to practice in a country other than the RPE's home country should be co-incidental with the period of validity of the original recognition; it would not be appropriate for any advantage to be conferred in the process of mutual recognition.
For example, a recognised RPE from the UK wishes to work in and is successful is gaining recognition in the Republic of Ireland (RoI):

UK recognition awarded 1/12/08 - valid until 31/11/13 (5 years)

RoI recognition awarded 1/06/10 - would only be valid until 31/11/13

v) Re-recognition

When the period of validity of an RPE's authorisation to practice in another country has, or is about to, expire then there are two options.

- The RPE seeks re-recognition in home country following the process specified in that country then re-applies for mutual recognition in the other country (countries),going though the steps outlined above. This option is probably most appropriate when the manner in which the RPE works tends to be peripatetic in nature.

OR

- The RPE seeks re-recognition of RPE status in the country in which mutual recognition was awarded following the same process as any other RPE from that country. If successful, then in effect this transfers the "home" status of the RPE to the "new" country. This option would probably be appropriate where the individual in question has in effect permanently moved or transferred to the other country.

5. Summary: Framework for operation of Mutual Recognition of RPEs between Member States

The RPE wishing to practice in a European Member State other than his/her own submits required documentary evidence to the assessor(s)/assessing body of the country in question. That is:

- Evidence of RPE recognition in home country
- Resume of RPE experience
- Statement of language ability
- Evidence of knowledge/understanding of radiation protection legislation of new country

↓

Assessor(s)/Assessing Body conducts an interview with the applicant

↓

Approval to practice as an RPE in the new country awarded. Information sufficient to inform with respect to consideration of suitability to be included with formal approval. Approval to run co-incidental with RPE's original recognition.

↓

At the end of the period of validity RPE required to apply for re-recognition.

Appendix I

Guidance on National Schemes for RPE Recognition

SCHEME COMPONENT	GUIDANCE
Foundation in Regulation	There should be a requirement in national legislation for those wishing to act in the capacity of Radiation Protection Experts to have that capacity to act recognized by the relevant Regulatory Authority
Basis on which recognition is awarded	The criteria on which national recognition as an RPE will be awarded should be established. The following broad criteria are considered to be prudent : ❖ An education o to Bachelor degree level either specifically in radiation protection, OR, in a physical/engineering/mathematical discipline OR o an academic equivalent ❖ Knowledge and understanding of each of the topics in core modules of the European reference syllabus[2] for RPE training ❖ Knowledge of operational radiation protection methods (nature of competence given in footnote 1) ❖ Competence to give appropriate and relevant advice in each of the following key areas : Compliance with national legislation Hazard/risk assessment Optimization Area Monitoring Personal dosimetry Designation of Areas Classification of workers ❖ Eligibility to apply for formal RPE recognition
Assessment of Competence	The Regulatory Authority should authorise a sufficient number of individuals and/or organisations to undertake the assessment of competence of those seeking RPE recognition. These "assessors" may or not come from within the

[2] Under development

	Regulatory Authority, but all assessors should satisfy the following criteria: ❖ be able, themselves to satisfy the specific criteria for RPE recognition ❖ be active in the field of radiation protection, with a minimum of 10 years operational experience ❖ be a member of a recognised professional society ❖ able to act independently and remain impartial ❖ be an active contributor to the radiation protection profession either nationally or internationally
Authority to award RPE Recognition	The Regulatory Authority should clearly establish where responsibility for awarding recognition (subsequent to the criteria for competence being met) lies. One of the following 3 options is preferred : ❖ The Regulatory Authority undertakes both the assessment of competence and the subsequent awarding of recognition ❖ The assessment of competence is undertaken by a 3rd party acting in accordance with criteria specified by the Regulatory Authority; the outcome of that assessment is forwarded to the Regulatory Authority for consideration and subsequent awarding of recognition. ❖ The assessment of competence and awarding of recognition is undertaken by a 3rd party acting in accordance with criteria specified by the Regulatory Authority.
Evidence required to demonstrate competence	The nature and format of the evidence that prospective RPEs (once eligible) are required to submit to those assessing competence should be clearly stated and understood. The following protocol is preferred: ❖ **Documentary evidence** should be submitted in support of each of the 3 key aspects considered in the recognition process. The evidence should be sufficient to demonstrate that the specified criteria for competence have been satisfied o Education : proof of academic qualifications o Training: attendance certificates, syllabi, proof of exam passes, evidence of on-the-job or mentored training etc o Experience : evidence of advice given, details of situations analysed, reports provided etc ❖ Following consideration of the documentary evidence the assessor(s)/assessing body should conduct an **interview** with the prospective RPE. The objective of this interview being to Confirm understanding of underpinning principles and the wider factors influencing radiation protection, and Assess verbal communication skills.

Period of validity of RPE Recognition	Once awarded, the period validity of RPE recognition should not exceed 5 years. Re-recognition via the approved mechanism and within a specified window of time (+/- 6 months of the 5th anniversary of awarding of the original recognition) should be required if the individual wishes to continue to practice as an RPE.
Re-recognition	In order to obtain re-recognition and RPE should be required to submit evidence of continuous professional development (CPD) to the assessor(s)/assessing body. (It is expected that the submission of documentary evidence only should be required for the purposes of re-recognition). Specifically, this evidence should demonstrate : ❖ A clear understanding of the role of the RPE ❖ Detailed understanding of relevant national legislation ❖ General awareness of any legislative developments ❖ Continued awareness of operational radiation protection methods and any technological advances relevant to radiation protection. Agreed criteria that RPE must be meet in order to satisfy each of the above will need to be established by the assessor(s)/assessing body. The period of validity of any re-recognition should be the same as that specified for first recognition.

Footnote 1:

Brief description of nature of required operational competence

Topic Area	Nature of Required Competence	Topic Area	Nature of Required Competence
Legislation	The ability to interpret regulatory requirements in practical situations.	Area Monitoring	The ability to interpret radiation and contamination measurements in order to identify necessary control procedures.
Hazard & Risk Assessment	The ability to identify and assess risks of actual and potential exposure to ionizing radiation. Must include the ability to calculate projected exposure.	Personal dosimetry	The ability to interpret personal dosimetry data in order to identify necessary control procedures.
Optimization	The ability to interpret and apply radiation protection data. For example, - decay and emission data, source outputs, dose histories, monitoring results, manufacturer data, shielding calculations. The ability to identify and propose appropriate control procedures to restrict radiation exposure in accordance with the ALARA principle	Designation of Areas	The ability to identify the need for area designation (supervised or controlled). The ability to identify appropriate access control measures for designated areas.
Classification of Workers	The ability to identify the need for classification and personal monitoring of workers		