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CETRAD
**Coordination Action on Education and Training in Radiation
Protection and Radioactive Waste Management**

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Deliverable 6
Integrated Proposal Report

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PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the partners of the [CETRAD] project	
CO	Confidential, only for partners of the [CETRAD] project	

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CHAPTER 1: INTRODUCTION

The Integrated Proposal Report (Deliverable 6) as outlined within the CETRAD Project Plan (Deliverable 1) presents the integrated proposals for education and training developed during the CETRAD project. This report presents a proposal for implementation of a scheme as an outcome of the CETRAD project and a worked example of an education and training course that might be developed and delivered within the proposed structure.

CHAPTER 2: PROPOSAL FOR IMPLEMENTATION OF CETRAD

2.1 Introduction

The key action coming from the Internal Project Meeting (Deliverable 4) was for the CETRAD Secretariat to develop a draft outline proposal to CETRAD partners for a future initiative. It was agreed that this proposal would then be distributed to the project partners and the European Commission for comment and discussion. The following proposal is the outcome of this process.

2.2 Proposal

An umbrella organisation (nominally called ‘CETRAD’) be established which will facilitate the delivery of European education and training in radioactive waste management to meet the needs of the key stakeholders.

2.2.1 Proposed mission statement

To create a stakeholder-driven European education and training infrastructure for geological disposal in radioactive waste management.

2.2.2 Proposed objectives

The objectives of the CETRAD organisation would be:

- i. To meet European stakeholders’ strategic European education and training needs at the highest international quality. To be achieved by the use of accredited centres of excellence.
- ii. To coordinate the delivery of such needs via the linkage of providers and clients.
- iii. To ensure that the EC’s fundamental objectives of quality, recognition and mobility are met.
- iv. To influence policy and planning for future needs.
- v. To promote European excellence in this area throughout the rest of the world and attract non-European students to the European courses.
- vi. Via the above mechanisms, promote European skill, expertise and technology transfer to provide a European competitive advantage in emerging world markets in this area.

2.2.3 Organisation

An outline of the structure of the proposed organisation is presented in Figure 1.

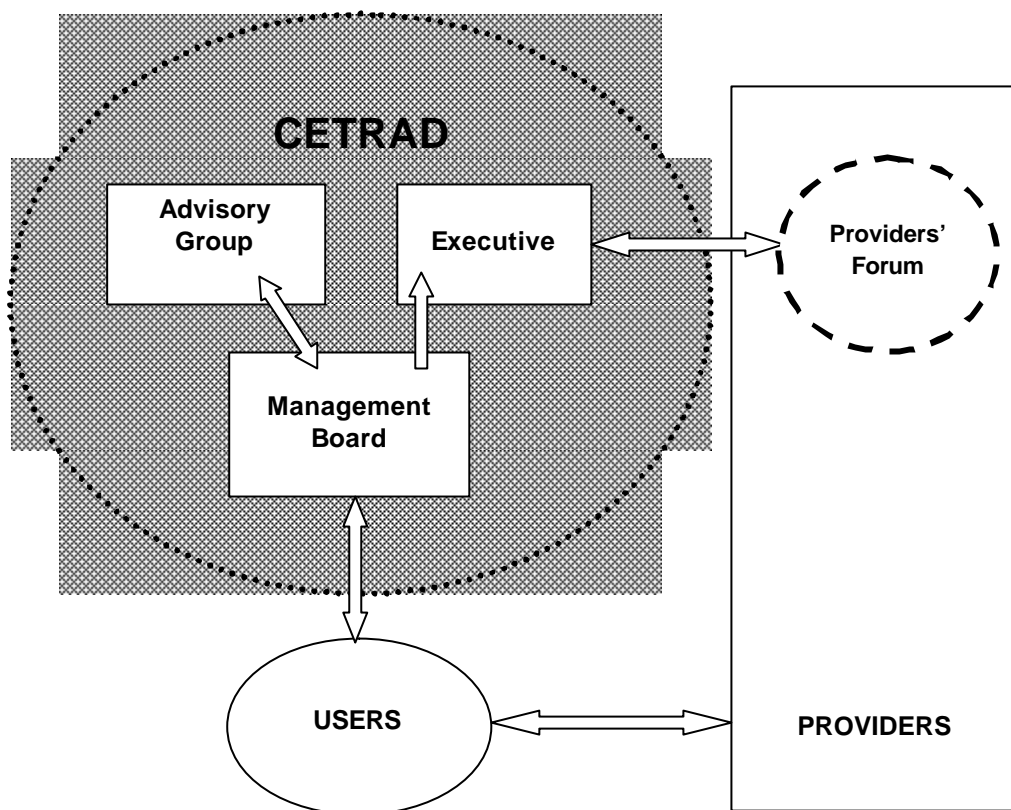


Figure 1: Proposed structure of CETRAD organisation

The essential components of the organisation are:

- a. A Management Board
- b. An Executive
- c. An Advisory Group

These three components will constitute CETRAD.

The Management Board will represent the stakeholders requiring provision of education and training and will be responsible for all aspects of CETRAD's activities. In particular the Management Boards key task will be to define the education and training **REQUIREMENTS**.

The Executive will be responsible for implementing the activities defined by the Management Board and will report to the Management Board. The Executive will be the primary interface with the Providers of education and training.

The Management Board will take advice from an Advisory Group which will act as the primary control and audit of **QUALITY**.

In addition to this a Providers' Forum would be constituted to allow providers of education and training in this area to meet, exchange best practice and provide feedback to CETRAD via the Executive. A complementary web-based virtual forum would also be established.

It is proposed that the Management Board should consist of National Correspondents representing the key stakeholders using education and training (in the same manner as the current CETRAD project).

It is further proposed that the Chair of the Management Board should be from a major stakeholder. We envisage that the Management Board would meet at six monthly intervals.

The executive arm will consist of a Director, as a senior officer, plus at this stage two other members of staff. The director will be responsible for the delivery of CETRAD's activities on a day to day basis, reporting directly to the Management Board via the Chair. It is anticipated that the post of Director may be of interest to a well established member of the RWM community with good contacts and considerable experience of industry and regulatory needs in this area.

The Advisory Group will be constituted to ensure an appropriate range of expertise is available for the benefit of the project. It is anticipated that this will include individuals with high level experience in: education, training / CPD provision, e-learning and accreditation.

Representatives of relevant initiatives, such as ENEN, will be invited to join the Advisory Group to ensure full and effective coordination between the initiatives.

2.2.4 Funding structure

The long term goal is to form a sustainable not-for-profit organisation.

It is proposed that a proposal be submitted to the EC to fund establishment of this initiative.

The proposal will be submitted according to usual EC processes.

The project coordinator will be the Chair of the Management Board and the partners will be the members of the Management Board.

Funds will be sought for: *i)* Salary costs of the three members of the Executive. *ii)* Travel costs for Management Board and Advisory Group members' attendance at meetings and *iii)* Facilitation, organisation and logistics of Providers' Forum.

It is proposed that a three year project, as stated previously to be funded by the EC, a key task will be to ensure sustainability of funding beyond 3 years, hopefully, via direct subscription of the stakeholders.

2.2.5 Activities

The following suggestions for a possible direction for the initial activities of CETRAD were proposed as a starting point for discussion.

We envisage that the early part of CETRAD activities would focus on training and not education or research. This is reflective of the main needs identified in the CETRAD education and training needs review.

By training we mean specifically:

- a) "Stand alone" training courses
- b) Training courses which are part of an MSc course – e.g. a module of an MSc course.

- c) On the job training.
- d) Conferences and seminars.
- e) Training related to EC projects, for example IP's training needs and whatever comes out in FP7.
- f) Component parts of a wider training course, covering a wider remit.

It is envisaged that the Executive would ensure education and training needs, identified by the Management Board, are addressed via i) working with providers of existing courses, ii) development and delivery of new courses in partnership with established providers and iii) direct development and delivery of courses.

CHAPTER 3: WORKED EXAMPLE OF EDUCATION AND TRAINING COURSE

In order to develop the ideas of the CETRAD proposal further this chapter presents a worked example. This is based on an existing course organised by ITC School of Underground Waste Storage and Disposal, to give hypothetical details and practicalities of how a typical specific training course might be developed and delivered via the proposed structure outlined in Chapter 2.

In this example elements of a course organised by ITC School of Underground Waste Storage and Disposal on “The fundamentals of geological disposal” have been used to provide a realistic setting. The hypothetical example consists of a residential five day training course giving a broad range of training covering key aspects of topical issues concerned with managing a geological disposal programme.

In the sections below the functions of the various components of the proposed CETRAD initiative are discussed in relation to development and delivery of the example course.

3.1 Identification of course requirements

The development and delivery of a course would begin with the identification of education and training needs and course requirements based on user needs. The Management Board and Executive would work to identify and target specific needs obtaining advice and information from the Advisory Group and Providers’ Forum.

3.1.1 Management Board role

To identify course requirements, the Management Board would identify specific areas of training needs, creating a prioritised list of target needs to be fulfilled by the executive.

In particular, the Management Board would aim to specify objectives and outcomes in line with user needs, estimate levels of demand, specify format of delivery (guidance on course length, the value of distance learning, practical learning) and identifying requirements for testing and examination.

Overall the Management Board would provide clear guidance, clear programmes and continuity allowing adequate preparation time (specifically three year cycles) for providers.

3.1.2 Executive role

The Executive would act as the driving force behind the proposed initiative, and although the Management Board would be responsible for producing a list of training areas (as identified above), with regard to the identification of course requirements, the Executive would assist in the development of options for the Board to consider, and assist in developing the overall plan, both strategically and detailed.

In relation to the development of a specific course, the executive would look to define the aims, objectives and target market.

3.1.3 Advisory Group and Providers Forum roles

The Advisory Group and Providers Forum would feed into this process, providing information on course requirements.

3.1.4 Example

The hypothetical example course identifies the target market as;

“professionals working in the implementation, regulation or technical support areas in national programmes at any of these stages”

The example suggests that the course would be of value to;

“those who may be just starting on disposal projects and who need to see underground work in its widest context, together with those whose responsibilities are specifically focused on underground projects.”

The example course would aim to;

“provide training to give a broad range of training covering key aspects on topical issues concerned with managing a geological disposal programme”.

3.2 Development and delivery of course

Development and delivery of education and training provision would involve close liaison between the Executive and Providers where the Executive would fulfil administrative and logistical functions. In addition to this the Providers Forum would make information available and generally assist in generating added value to users.

3.2.1 Executive role

The Executive would identify which organisation(s) would be able to provide the training course. The Executive would develop a database of providers covering areas of expertise, facilities and experience, this combined with information made available by the Providers Forum would enable the Executive to ensure only appropriate providers are involved in the development of a specific course. The Executive would then liaise with each Provider to ensure targets set by the Management Board regarding control and audit of quality are adhered to.

The Executive would also work with the Providers to fulfil those needs identified by the Management Board and develop details such as:

- Financial management and support
- Logistical and organisational arrangements (venue etc).

3.2.2 The Providers' Forum role

With regard to the development and delivery of courses, the Providers' Forum, acting as a core group representative of the different types of providers, would work closely with the Executive to support the development and delivery of courses.

The Providers' Forum would make information available to the Executive such as;

- the areas of expertise of providers and possible presenters,
- new developments in delivery and content of training provision,
- course content
- access to facilities

In general, the Providers' Forum would assist the Executive in adding value to users.

3.2.3 Example

The hypothetical example course is part of a modular scheme and designed so that participants can choose the structure and content that best fits participant circumstances and interests. In this case the course is developed by ITC School of Underground Waste Storage and Disposal, and conducted in Switzerland where presenters are experts from a variety of international organisations involved in geological disposal. Each day is conducted from 9am to 9pm and split into a morning and afternoon session by lunch and a three hour afternoon study break with approximately five hours of lecture and seminar sessions providing an intensive week long course. The following course structure could be imagined:-

1. Orientation: the concept of geological disposal
2. Waste types, origins and inventories
3. Geological Environments for Underground Disposal
4. Repository designs and safety concepts
5. Engineering, constructing and operating a repository
6. Staged repository development programmes
7. How a repository evolves over time
8. Safety standards and regulations
9. Objectives, structure and implementation of safety assessments
10. Gathering data for design and safety assessment
11. Selecting a repository site
12. Repository site characterisation: hard rocks (& generic strategies)
13. Repository site characterisation: sediments
14. Building trust and confidence
15. Strategic issues facing new programmes: structuring a disposal programme
16. Problem wastes
17. Geological disposal, past and future

With regard to financing of the course at typical fee for a week long course, such as discussed here might be in the region of 3-5K Euros. Provision of lecturers by collaborating organisations following an additional cost method (i.e. paying cost of travel and subsistence only) would allow for a significant reduction in the costs.

3.3 Marketing and promotion

The Executive would perform the main administrative duties of marketing and promotion of courses provided, utilising the contacts of the Management Board, Advisory Group and Providers Forum to ensure courses are advertised as extensively as possible.

3.3.1 Executive role

Responsibility with marketing and promotion of the course would lie with both the Executive and the Providers of any specific course.

Direct advertising and marketing would involve:

- Ensuring the course is added to any relevant databases
- Ensuring courses are advertised online
- Advertising in relevant academic and industrial publications

The Executive would also carry out marketing and advertising of the proposed initiative as and when the Executive and Board deem fit. This would be done by

- Ensuring the initiative has an online presence
- Exhibiting at relevant events
- Developing further contacts within the industry

5.3.2 Role of Management Board, Advisory Group and Providers' Forum

The Executive would also seek the support of the other components in ensuring that courses are advertised as extensively as possible. Thus the Management Board, Advisory Group, and Providers Forum would be requested to advertise the course by distributing promotional material to established contacts.

3.4 Accreditation of course

Accreditation would involve the setting of standards and specific targets by the Management Board and administrative implementation by the Executive to ensure the highest of standards.

3.4.1 Management Board role

With regard to accreditation of courses, the Management Board would agree standards and assessment protocols, perhaps adopting schemes used by alternative initiatives.

Two types of accreditation would be available:

- University courses would be based on the ECTS model and have the initiatives branding.
- Non university courses would have the initiatives branding and consider developing mechanisms to link with university MSc delivery to allow the ECTS model to be utilised.

3.4.2 Executive role

The Executive would be strongly involved in this process, administratively implementing the decided accreditation scheme and achieving targets developed by the Advisory Group.

3.4.3 Advisory Group

The Advisory group would help develop specific targets which the Executive would have to work to achieve, so as to ensure the control and audit of quality.

3.4.4 Example

In terms of the example, the course would be branded as an approved CETRAD training module and each participant would receive a certificate confirming satisfactory completion of the course.

3.5 Feedback from course

In order to ensure the course delivery of the highest standards, feedback from individual participants and employers will be sought thereby contributing to continuous improvement of the proposal scheme. The Executive would actively seek feedback from individual participants, participating organisations and Providers which would be fed to the Management Board acting as the prime control and audit of quality.

3.5.1 Management Board role

The Management Board. would evaluate the feedback and also ask the national representatives on the board to obtain national level information. The Management Board would also ensure that the Advisory group is aware of feedback obtained by the Executive.

3.5.2 Executive role

With regard to the quality of courses provided, the Executive would actively seek feedback from participants and their organisations:

- Participants would be requested to complete feedback forms immediately after the event identifying immediate perceived user benefits.
- A telephone survey 12 months after the event would be conducted identifying professional feedback (i.e. benefits to career and promotion, identification of learning, benefits of skills obtained such as networking etc) could be performed.
- Participating organisations and managers of individuals attending the course would be approached to obtain views of the positive and negative impacts of attending such course to the organisation as a whole.
- On the identification of groups of several attendees from one organisation, a senior member of staff be approached for feedback on the changes noted on the group as a whole.

The executive would also use feedback as an opportunity to obtain insight into perceived needs to attend at the time and identify any potential future needs.

3.5.3 Advisory Group role

The Advisory Group would provide advice to the Management Board and Executive based on the feedback received from users and providers.

3.5.4 Providers' Forum role

Feedback would be sought from providers, particularly the individuals presenting the course by the Executive via the Providers Forum.

3.6 Conclusion

This chapter has presented a worked example in order to develop the ideas of the CETRAD proposal identified in previous chapters further. Based on an existing course organised by ITC School of Underground Waste Storage and Disposal, hypothetical details and practicalities of how a typical specific training course might be developed and delivered via the proposed structure have been given. In particular,

this chapter has presented the functions of the various components of the proposed CETRAD initiative in relation to development and delivery of the example course.

CHAPTER 4: SUMMARY AND CONCLUSIONS

This report has presented an integrated proposal for education and training developed during the CETRAD project. A proposal for implementation of CETRAD was detailed in Chapter 2 and Chapter 3 provided a worked example of an education and training course.

The main conclusion of the report is that an agreement has been reached to develop an initiative in this area using the proposal presented. The proposal has been accepted by the partners of the CETRAD project as a way forward and as such is presented here as the integrated proposal of the CETRAD project. Although it should be noted that suggestions have been made to address three key issues, namely;

Governance

Issues related to the governance of any initiative still remain, including representation of each country's interest. It is anticipated that this will be resolved through direct discussion with National Correspondents.

Integration with existing related projects

The identification of levels of association or collaboration with existing Integrated Projects (IPs), and the classification of appropriate IPs are outstanding issues. These will influence details and specific issues such as accreditation and quality assurance, the development of pilot courses and so on.

Scope

The technical scope is currently focused on geological disposal of radioactive waste, again there is some variance in opinion on this with some feeling of a need to widen the scope of the initiative. It has been recognised that the technical scope should be developed further.