



PETRUS-III PROJECT

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Project meeting minutes
Kick-off meeting

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RESPONSIBLE:

Université de Lorraine (UL)

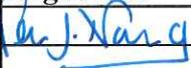
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Signatures

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PETRUS III
KICK-OFF MEETING 02-03 October, 2013
Mines Nancy, France.
MINUTES

Participating members are first referred to in the Minutes by their full name and subsequently by their initials, except in the cases of Tommy Claesson and Tom Clarijs who share the same initials.

Welcome

Michel Jauzein, Director of the École des Mines de Nancy

Introduction and Agenda Review

(powerpoint presentations: Coordination team, Agenda)

Behrooz Bazargan-Sabet, Université de Lorraine.

B.B.-S introduces the team working with him on PETRUS III.

Petra Norroy will be taking the Minutes at the biannual meetings and publishing them, she will also be editing the 6-monthly newsletter, which is new to the PETRUS III project.

Dr. Aline Marchetti will be helping with project administration and particularly financial aspects.

Isabelle Le May is head of industrial relations at Mines Nancy and **Philippe Sessiecq** directs the Lifelong Learning department, they will also be supporting the project.

Laure Bigeard is the technician at Mines Nancy who liaises with the PETRUS group to enable distance learning and video-conferencing among other technical needs.

Anne Galausiaux is **B.B.-S's** secretary for the project.

Members of the consortium at the meeting introduce themselves and the institutions they represent.

A minor amendment is made to the agenda (Thursday's meeting which was scheduled to start at 9.30 is brought forward by half an hour to 9.00).

Vision & Goals PETRUS III

(powerpoint presentation: Vision_Goals)

Behrooz Bazargan-Sabet

Twelve different countries are involved in the project, Italy and Holland are new partner countries.

Slide 3. The partners highlighted in yellow are university institutions. The distribution of academic institutions and end-users is equal, there being ten of each.

It is important for PETRUS to become self-sufficient and the major aims behind the project are the implementation of the E&T programmes according to ECVET principles. Work Packages 1 and 2 will concentrate on this at Master's level. Work Package 3 is directed at research and multi-disciplinary training for PhD students. Work Packages 4 and 5 are the two strategic WPs which will promote sustainability of the PETRUS programmes through collaboration with the CMET (**Competence Maintenance Education and Training**) Working Group of the **IGD-TP** and **ENEN** (who will manage WP5).

Slide 5. EUTERP refers to **Europe's Radiation Protection Education & Training**. The end-users council was set up during the PETRUS II project with **Marjatta Palmu** managing its activity. Newcomers are expected during this project, but **B.B.-S** expresses his strong desire that **Marjatta Palmu (PMP)** remain at the helm.

Slide 11. ENETRAP is the **European Network on Education and Training in Radiological Protection**.

Slide 12. The newsletter is a new development of the project. The aim is to publicise PETRUS activity and promote exchange with other interested parties. Some may be able to help thanks to any previous experience they have in any of the areas the project deals with; academic, technical, practical and so on. The newsletter will be published every six months and will rely on input from project members.

PMP raises several points.

Firstly, she requires that something concrete be produced in terms of implementing ECVET to the Professional Development programme.

She also remarks that there are several groups involved in WP4. She expresses concern that a multiplication of groups, councils, bodies, boards and so on will restrict the efficiency of the work involved and some streamlining may be necessary.

Finally, she asks how many times the end-user council is expected to meet.

B.B.-S Stresses the means available for communication. PETRUS III meetings, should, as far as is possible, be synchronised with IGD-TP meetings, in order to maximise the presence of members and outsiders.

Georges Van Goethem emphasises the need to focus on one or two job profiles related to GD, described as robust portfolios of learning outcomes, aiming at convincing the IGD-TP that PETRUS-III indeed provides the expected E&T support. Ambition is the key word, the world leading countries in GD (namely: Finland, France and Sweden) are participating in PETRUS-III. This is the first E&T project of its type world-wide and should become a flagship for the many countries interested in GD.

PMP acknowledges this, but also urges the consortium to remain realistic.

Nadja Zeleznik reminds members that the IGD-TP holds an Executive Group (EG) meeting twice a year, there are then working group meetings and an Exchange Forum (EF) once a year. She asks **PMP**, as leader of the CMET group, if it would be possible to know the dates of their meetings in advance in order to plan PETRUS III meetings in accordance.

PMP explains she is not a member of the Executive Group. CMET group meetings are held twice a year, one of which is intended to coincide with the EF. In 2013 the dates were already fixed by the EG and some overlap with other important commitments, making her presence impossible (as was the case with this particular PETRUS III kick-off meeting). Basically, the earlier meetings are scheduled, the better it is.

Outcomes of PETURS II

(powerpoint presentation: [Petrus2_outcomes](#))

Behrooz Bazargan-Sabet

Slide 4. The development of adequate E&T schemes and the delivery of courses within these schemes were achieved although training was not highly developed.

The development of a framework for the mutual recognition and accreditation of the E&T programmes was also achieved.

The development of a comprehensive database and its integration in the ENEN Web database providing up-to-date information on E&T provisions and other relevant data was also completed thanks to hard work on the part of ENEN and its third parties; CTU, Madrid and Aalto.

The establishment of the PETRUS end-user council for long-term collaboration between end-users and E&T providers was not an easy objective and much of its success was thanks to **PMP**.

Slide 5. The education programme not only corresponded to the initial objectives of the project, but managed to go well beyond.

Slide 6. A major concern for the PETRUS III project is how to attract students to these courses and how to overcome organisational problems, in other words this is an area that requires improvement.

Slide 7. Unfortunately, not all aspects of the PD programme were covered. A trainee profile and corresponding programme were not established.

Slide 9. This was the suggested structure for the qualification process in PD training (using ECVET) for the PETRUS II project. The following slide (**slide 10**) lists all the obstacles encountered.

Slides 13-16 show the model PETRUS III wishes to implement. This is a “step-by-step” approach and the principle of partnership is the core of the project.

Therefore, success of WP2 is essential. The evaluation of the PETRUS PD programme is based on learning outcomes and so feedback from the employer is crucial and an aspect that needs to be worked on.

PMP remarks that PETRUS II achieved very good results regarding Master’s level. The next step is to emphasise the importance of this work and the curriculum in the professional world. The students involved need to supply their feedback in order for PETRUS III to develop.

B.B.-S informs members that the students who graduated from the Master’s programme are now all working in nuclear waste disposal; two are continuing on PhDs, one works for ANDRA another is working in a Japanese research institution and another in Russian nuclear research.

G.V.G. recommends obtaining feedback from all the PETRUS II consortium members. He would like to know if they were satisfied and their expectations of the project met. The EC has been investing a considerable amount of financial resources in the PETRUS projects and therefore this project is required to be ambitious. He encourages those members present at the meeting who took part in PETRUS II to give spontaneous feedback.

N.Z. begins and tells the meeting that it was extremely useful. It was the first time the issue of disposal and professional development had been approached. In Slovenia at the time there was no recognition of its value and importance, there were no university courses available that were specific to this area. It also helped RAWRA in the area of job description. This work is unfinished and yet crucial.

Abdesselam Abdelouas says that PETRUS II opened the door in this area. Until that project waste disposal had been considered as one job profile, which is far from the reality of the situation, PETRUS II showed the diversity of the needs. The challenge now for PETRUS III is to list the whole variety of job profiles which interest the waste

management agencies. This is a huge challenge. All this forward momentum is thanks to PETRUS II, which was the first project to pose the question.

Peter De Regge says PETRUS II provided an excellent example of interaction between end-users, agencies and universities. It finally made academic institutions aware of the types of training necessary and what is really required. The work done by PETRUS II is now used in other projects. It was an example of a give-and-take procedure – ENEN was able to offer its database and publicity and will continue to do so, such is their belief in and commitment to the project.

Francisco Javier Elorza Teneiro says PETRUS II was extremely useful. Madrid was part of the distance Learning pilot, which was a first and the partners were successful. Now there are universities from different countries in Europe who can and do share courses, this is an immense step forward. A need has been identified and an economical answer provided. The multi-cultural classroom experience was not only successful, but also enriching.

Isabel Paiva - although we did not have many students attending the 1st module of the PETRUS Course in July 2013 (by videoconference and the first time for IST), people did not at first realise how important their knowledge in this area was. Now, thanks to PETRUS III, they do. The project has also helped interdisciplinary relationships and what they have to offer to meet the country's needs. While problems with E&T still exist in this area in Portugal, PETRUS II has provided a massive step forward to start solving them.

Tommy Claesson – Linneaus was not originally a member of the project and the approach adopted by PETRUS II was an eye-opener. Thanks to what we have learnt from the project we began developing a course this spring. We had thirty students enrolled from ten different universities for a course of around two weeks in length and it was successful. Now I feel confident of our ability to fully participate in PETRUS III.

B.B.-S expresses his hope that Linneaus will offer their piloted course to PETRUS III or at least their organisational experience.

T.C. says they will.

Jussi Leveinen – the biggest positive is the network of universities PETRUS II has provided. This really is non-negligible and must be mentioned. Thank goodness PETRUS III exists to broaden our scope and widen the context.

Dan Bennett I was a student who profited by the PhD training provided by PETRUS II. I look forward to PETRUS III providing professional development programmes to those who have graduated.

B.B.-S hopes that Cardiff will be able to provide the project with courses.

Radek Vasicek feels that the sharing of resources was the key element of the project. Czech Republic is a small country and their only chance is the ability to cooperate

internationally – PETRUS II provided this opportunity. PETRUS II started the very important work of defining needs and providing the corresponding strategies, this was vital work. PETRUS III is the necessary and logical continuation of all the work achieved, making it solid and sustainable.

B.B.-S thanks **R.V.** for his comment and emphasises the understanding that the project's goals are long term. Things always seem so much simpler on paper, but experimentation is necessary before anyone can be sure of what works best. He fervently hopes that the goals will be reached by the end of the project, but underlines the immensity of the task. More and more difficulties are encountered as the job progresses. Success depends on long term commitment from those involved.

Tom Clarijs says that SCK has developed a specific module around waste disposal for ENETRAP and while doing so discovered the lack of E&T in this area. He hopes that there will be mutual benefit from their inclusion in the PETRUS III project.

G.V.G. explains that there are eleven such projects running and he is asking everyone involved in them the same questions. PETRUS II was successful in its academic education programme, now it is time to concentrate on continuous professional development programmes. He maintains that the essential, initial work to be done is the establishment of job profiles. This will make the subsequent work far easier. **G.V.G.** believes the project should identify one job profile (or a maximum of two) and then decide on the list of learning outcomes to train personnel involved. He also expresses a desire for more consortium members on the demand side (i.e. end-users).

B.B.-S. repeats that there is an even balance of academic and end-user members as well as a connection with the IGD-TP.

G.V.G. underlines the need to identify one or two job profiles.

B.B.-S. & A.A. reply that they will do this.

G.V.G. recommends they use the experience of CEA and SCK-CEN in the ENETRAP-II project. In the ENETRAP project they identified the target and then built up the mosaic of learning outcomes.

Paul Livolsi concurs, but adds that the end-user need was previously identified, making the task far less complex.

G.V.G. gives the example of AREVA who decided on four job profiles, it took them three years to list the corresponding learning outcomes. PETRUS III should be aware of this and limit the number of job profiles in order not to lose valuable time and to ensure that the project reaches its goals in all areas.

He continues by warning consortium members not to consider ECVET in terms of “credit points”. It is a mistake to want to quantify the learning outcomes. The focus should be on qualifications expressed in units of learning outcomes to which credits (and not points) are attached.

I.P. tells members that she sees the issues from both the point of view of the end-user (which her institution was initially in PETRUS II) and as a university (present situation, despite the fact that IST still has end-user responsibilities, a legacy from former ITN). In her opinion, academic institutions are still rather slow to be convinced of changing needs, their courses are fixed and inflexible. While end-users know what they want, universities need job profiles and it is the business of the end-users to provide them. They should not forget that universities are in the business of knowledge.

A.A. says that during his presentation the following day he will explain an approach that has existed for forty years and can be used by both parties.

B.B.-S. agrees that it is difficult to persuade universities to accept new ideas. Tools have always existed, but universities are nevertheless reluctant to welcome change. End-users adapt more easily as they are face-to-face with the reality of a situation. However, for lasting, mutual, European recognition the universities are essential. It is their diplomas that provide worldwide recognition. We insist on academic qualifications, because they are the universal validation of a person's training and experience.

Tom Clarijs believes there are other options. When linked to job profiles, learning outcomes can be recognised by other bodies than universities, in the area of professional development regulatory boards have an important role to play.

B.B.-S. insists that the situation is slightly different in the area of nuclear waste disposal due to there being no clear set of European laws or regulations. There are fifteen to twenty disciplines which interact.

G.V.G. reminds members that they need to anticipate and think five to ten years ahead. European legislation will appear where regulators within the EU will be inspecting neighbouring countries.

Project Organisation, Contractual Commitments.

(powerpoint presentation: Contractual_information)

Behrooz Bazargan-Sabet

This is administrative information for partners.

B.B.-S. asks **G.V.G.** about how to declare the subcontracting costs for video-conferencing, as this is not now listed in the original DoW as subcontract as required in the new reporting format (ref. also the "Notes for beneficiaries - annexe" provide by the coordinator). The changes to the forms for the declaration of costs were made after the original project plan for PETRUS III, so he is unsure of how to deal with this problem. He asks if it can be considered as minor subcontracting. He also asks what is considered as minor and major subcontracting. Approval for such subcontracting costs not stated in the DoW and the related clarification is required from the EC.

B.B.-S. reminds work package leaders that they must submit their deliverables on time. Any delay has a domino effect on other work packages. The EC is now stricter and will not accept any delay.

If, for unavoidable reasons, delay does occur, warning must be given to the coordinator, so that the schedule can be adjusted.

E&T in Geological Disposal: EC expectations European Master's courses in Geological Disposal

(powerpoint presentation: EC GeorgesVanGoethem)

Georges Van Goethem, European Commission.

The main objective for the EC is to match supply and demand in nuclear expertise by providing the framework for competence building. Members should be aware of the legal, political and economical background. They should also note the EC's more bottom up (responding to demands) approach as opposed to the top down (stating requirements) approach used in the past.

Slide 4. "Nuclear Safety Directive" (EU Council, Brussels, 23 June 2009) and 2013 revision. This is the first important legal document and provides a binding, legal framework. "Mutually recognised expertise and skills" must be key for the PETRUS III project as this requirement is aligned with the general EU strategy for lifelong learning and cross-border mobility.

Slide 5. "Waste Directive" - Directive 2011/70/EURATOM on the management of spent fuel and radioactive waste (EU Council, Brussels, 19 July 2011). This (Article 8) shows how the context is now one of continuous professional development and not simply a matter for the academic world.

Slide 6. BSS - "Basic Safety Standards" - Proposal for a COUNCIL DIRECTIVE laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation (Brussels, 30.05.2012) - final approval expected end of 2013. While this is not yet a key concern for the GD community, this proposal clarifies the need for PETRUS III to anticipate. It is extremely important that PETRUS III places E&T high on the agenda of the IGD-TP. Radiation safety and, specifically, related competences are now central and must be incorporated into the project – PETRUS II was successful with regard to education (academic level), now the key issue is training (professional level). One or two jobs must be defined in this area and specific training programmes created.

America and Russia are in discussion with the rest of the world over the closed fuel cycle including the security of high-level waste disposal sites (IFNEC initiative). The

process is likely to take many years. EURATOM is involved in similar discussions and needs input, in particular, on low dose effects: are there any risks? If so, what are they? Could they be positive? This is as yet an unknown and open domain (Slide 15).

The EC would like PETRUS-III to work outside of the EU-28 as well and work with countries such as China and Japan (e.g. in collaboration with IAEA).

Slide 20. IGD-TP: A Vision Report (November 2007). PETRUS end-user council work must be continued and include the IGD-TP vision report as it is the only one that states a clear and ambitious target. It is a key document and should be a driving force.

Slide 23. “EUROPEAN HUMAN RESOURCE OBSERVATORY IN THE NUCLEAR ENERGY SECTOR” – EHRO-N. Waste disposal management specialists (except PMP) are missing from the project. **G.V.G.** urges the GD scientific community to become involved in EHRO-N by nominating someone to participate in their Senior Advisory Group's biannual meetings. Their work revolves around the supply and demand of nuclear expertise in various domains and their studies will ultimately be supplied to the universities.

Slide 24. Only the top of the pyramid is made up of pure nuclear experts with specialised academic backgrounds. All the rest of the people involved need training and special training is needed to “nuclearise” these employees and provide them with a safety culture.

Slide 26. “ERASMUS for all” is now called “ERASMUS Plus”. There is a great deal of funding available in these programmes. Members of PETRUS III must also inform and be informed of their national ECVET experts of what the project is doing and of their needs.

Slides 38-41. The consortium must take a performance quality approach and not a quantitative approach with regards to ECVET and PD training. ECVET is a cycle based on learning agreements between the end-user and the trainer. Each job should have a portfolio of learning outcomes.

Slide 41 KSC= Knowledge-Skills-Competence

Slide 42 PETRUS III must decide at which EQF -level they wish to provide training.

PMP. agrees that the Nuclear Safety Directive is binding, but its method of adoption is up to each member state. In Finland national provision for E&T has been made, it is a national matter.

She also remarks that the definition of job descriptions and their related learning outcomes should be based on operational experience, but as there are no working, high-level waste geological repositories yet, this is impossible. In PETRUS II choices were based on R&D work needs and the profile of a Safety Analyst was selected from the two alternatives discussed. With regard to ECVET, it would be more logical to concentrate on (a set of) units of learning, which would be more versatile than a job

profile. It has to be realised that any one person does various jobs, and the units of learning can be packaged up to fit different jobs (and functions).

She informs the consortium that within the EURTOM fission programme the ARCADIA project has one work package dedicated to management and socio-economic issues for Generation 4 and awareness of what they are doing would be useful to PETRUS III.

Marc Poumadère of the Institut Symlog is working on the topic of social skills and competence (managerial and communication) for the GEN IV prototype and has offered to come to the next CMET meeting in Madrid to present the project.

A.A. agrees that there is a lack of experience in high-level waste disposal, but project members do have experience in low and mid-level waste storage and the packages required are virtually the same.

N.Z. offers the information that ARAO and REC can provide a link in the socio-economic area, as they are both involved in projects concerning these issues (ARCADIA, PLATENSO, EAGLE).

Work Package 1

Elaboration of the Professional Development Training Programme Using the ECVET Model

(powerpoint presentation: WP1, WP1-DACUM)

Abdesselam Abdelouas, Ecole des Mines de Nantes.

Emphasis is now on training (no longer education, as in PETRUS II) and learning outcomes are key to the project. Decisions have to be made regarding the units corresponding to the chosen job profiles. The specific needs and requirements should primarily be expressed by the end-users. Measuring the units in points must be forgotten; it is necessary to concentrate on content and size. The project also has to decide on the level of competence it is aiming at (cf. slide 42 of **G.V.G.'s** previous presentation). The need for level 8 (i.e. PhD level) is to be discussed.

A.A. remarks that many partners are involved in WP1 and asks how their participation can be organised efficiently and economically.

B.B.-S. replies that initial technical meetings to organise partners' contributions should be via email or video-conferencing.

A.A. explains the DACUM (Developing a Curriculum) method, predominantly used in North America. He asks **PMP** the number of job profiles that WP1 should keep in mind,

or whether this should remain open – **G.V.G.** has stated during the meeting that the project should focus on one job profile, or a maximum of two.

PMP replies that in Posiva she worked with a similar process on defining the job profiles and the of listing job profiles was used for work (among with other End-user input) both by PETRUSII and ENENII projects, however, profiles have changed since. She asks whether the financial means are available to accomplish such a heavy task as carrying out the DACUM process and how WP1 will gather the necessary experts to do the work required – unless only French experts are used.

A.A. understands the difficulties, hence his question. It is possible for him to interview people at ANDRA at very little cost, but this will be an individual initiative.

I.P. reminds **PMP** that considerable work was accomplished with NDA, while things may have changed, surely it would be possible to use some of this work.

B.B.-S. believes that it would be useful to update this work and this would provide a number of job profiles, thus implicating the majority of needs of end-users. In depth work may then be carried out on one or two of the profiles. This would be a considerable achievement. Step one is for end-users to give their view regarding the priority profiles.

A.A. says he will, therefore, proceed with an interview approach. There may, however, be a subsequent problem prioritising the job profiles. There are more areas involved than safety, this might not be a priority for all.

PMP agrees that trying to find a common denominator is most definitely a problem and that it is true needs are not necessarily the same for all end-users. She reminds the consortium that in the previous project, the learning outcomes were defined for a safety analysis coordinator, however, these outcomes were never broken down into knowledge, skills and competence. This would be a good starting point for WP1.

A.A. gratefully accepts this suggestion.

Slide 14 (ppt. WP1) **A.A.** suggests using the learning agreements currently used by Nantes under the ECTS as inspiration for the PETRUS III learning agreement.

G.V.G. thanks the consortium for insisting on the definition of one or two job profiles as portfolios of learning outcomes. The decision on which is extremely important and should not be rushed.

A.A. believes everyone agrees on the Safety Analyst as a starting point and says he will speak to ANDRA. He is also aware of the need to look to the future and the requirements for the deep disposal sites; a geo-disposal engineer will be required in the next fifteen to twenty years.

B.B.-S. returns to **I.P.**'s point. There are two things to be done: first a decision on what type of person is needed by the majority of end-users and a general vision obtained. Secondly, how do we adapt people's training to enable them to do this job? ECVET

proposes a direct solution. If safety is the first profile to determine, then end-users must supply the complete vision.

N.Z. agrees that a more global vision of profiles (as in PETRUS II) should be produced and this will help WP4. As **PMP** said various units should be produced and fitted together in different ways to cover multiple jobs/tasks. As the nuclear field is a small community, the knowledge needs to be more general.

A.A. says this is true for a smaller organisation, but for larger establishments such as ANDRA the problem is the reverse, they need many specialists in one single area. This is quite a problem.

B.B.-S. believes that whatever the size of the organisation **N.Z.**'s point is true and ANDRA is also asking for people who have a global understanding.

PMP. tells members that this was discussed at a CMET Working Group meeting and it was established the competences in safety are required by many, there is less need for individuals with specific in-depth expertise. There is a clear demand for global knowledge, transversal safety competence and this provides a common ground for European exchange. PETRUS III is ideally placed as a European project.

Rosa Lo Frano agrees with this and emphasises that a common ground for European exchange is the focal point.

G.V.G. asks members to focus on safety level jobs, as this is the area affected by legislation. European peer reviewers will visit neighbouring countries to verify safety levels. He expresses the desire for the consortium to concentrate on one or two (preferably safety related) job profiles while bearing in mind a common interest for European countries.

Work Package 2

Actual Implementation of the Professional Development Training Programme

(powerpoint presentations: WP2 Aalto)

Jussi Leveinen, Aalto.

This WP builds on WP1, so the outcomes of WP1 will crucially influence the work. The development of ECVET is also essential to WP2. The deliverables of this WP are the core of the project and vital to its success.

However, before work can begin a decision has to be made concerning the level of training. EQF Level 7 is targeted.

Aalto does have experience in this type of programme (for Nokia) and extremely positive feedback was received.

If the programme is to be sustainable, students coming from outside of the consortium members need the necessary status to be accepted by the universities. This is another problem that needs addressing.

Slides 14 & 15. The BE-TWIN guidelines (a result from one ECVET pilot project) seem to be suggesting exactly that which the EC is warning members against (the idea that each ECVET unit be attributed a certain number of points to correspond to ECTS), but ECTS are mandatory for universities and so this problem cannot be ignored. A more flexible approach is obviously required and maybe PETRUS III will have to develop its own model, which is a huge challenge. Aalto has already worked on something similar, linking learning outcomes to job profiles, however this is a visualisation tool and Aalto first needs to check that its use is technically possible.

J.L. warns members not to be seduced by the deadlines for the deliverables belonging to WP2 and although they rely on the work from WP1, work must begin as soon as possible, it is not possible to wait twelve months.

B.B.-S. underlines this point, saying the deadlines simply take into account the necessity for certain data and results from WP1 before the WP2 work can be completed.

G.V.G. is pleased that level 7 (i.e. master level) has already been decided upon. He would like to check everyone's agreement and their awareness of the requirements in terms of knowledge, skills and competences. He repeats that the consortium must not become involved in establishing a quantitative representation of ECVET (no points!).

B.B.-S. explains that level 7 corresponds to Master's level and that most of the academic members of the project are already involved with training at this level.

G.V.G. feels that there should be more discussion with the end-users, the project has to be sure this is what they want and need - otherwise the universities are wasting their time.

PMP states end-user needs for professional development centre around levels 5 & 6 as levels 7 & 8 are too specialised - the staff already have a Master's degree in some disciplines as a result of their basic education

She returns to the earlier point made by **J.L.** and asks how a student who has acquired learning outcomes outside of a member academic institution are integrated and accessed to the programme. This is a very real problem, especially in Finland as one needs to be signed on at the university for getting credits.

B.B.-S. reminds everyone that he presented some models that may provide a solution during his presentation the previous day (cf. [Petrus2_outcomes](#) powerpoint presentation, [slide 16](#)). However, these models are intended as academic solutions and may not solve the administrative issue. The problem must, indeed, be addressed.

Work Package 3

Addressing the Challenge of Multi-disciplinary Skills at PhD Level (powerpoint presentation: WP3 UPM)

Francisco Javier Elorza Teneiro, UPM.

This Work Package relies on the results of WP2 and will support WP4 & WP5. It also aims to develop synergies outside the PETRUS III consortium – both European and worldwide.

The Work Package will develop courses that can also be integrated into WP1 and WP2 (professional development programme) and organise a minimum of two annual PhD workshop events. It would be desirable to publish the proceedings of the events in a scientific journal yet to be decided on.

G.V.G. asks if skills and competence could also be introduced into the approach (e.g. what skills and competence are necessary at PhD level?) as knowledge is already spoken of.

F.J.E.T. replies that nowadays all learning has to be expressed in terms of competences. PhD studies are level 8, which is the highest level, and must possess all the skills necessary to lead and communicate. He agrees that these skills need to be defined in detail and expressed in terms of learning outcomes. This is the approach WP3 will follow.

G.V.G. explains that at Imperial College, London, all PhD students must publish at least once in a national newspaper. This idea should be included in the PETRUS programme as nuclear scientists must be able to communicate effectively with the general public.

B.B.-S. adds that this is also required of Mines Nancy PhD students, who are required to publish at least once in a scientific journal and once in layman's terms for the general public.

He stresses the desire that members should closely collaborate to produce the PhD events. These events should not simply be presentations of research, but must be high-level activities with multi-disciplinary objectives. They should involve renowned personalities and have a worldwide impact.

F.J.E.T. adds they will be advertised in the national press of the different countries.

Peter De Regge explains the content will be entirely different from the ENEN event. The ENEN event is a contest. Students present their work and respond to questions from specialists and the audience. There are three winners who all receive 1000 euro.

PETRUS members' students are welcome to participate. The event is always linked to a major international conference, ensuring a huge attendance.

B.B.-S. requests ENEN's assistance by sharing their experience concerning the organisation and advertising of such an event.

G.V.G. suggests it be called the PETRUS Doctoral Programme (or School) in order to advertise the ambition.

A.A. says this requires more thought as it must be special and have impact, something that sets it apart from all the other "Schools".

PMP presents a Finnish Doctoral programme YTERA – "Doctoral Programme for Nuclear Engineering and Radio-Chemistry" which includes various events, courses and activities complementing the doctoral studies. It is co-funded by the Academy of Industry, three major nuclear sector related universities and by industry. She recommends **F.J.E.T.** contact the YTERA coordinator regarding coordination of activities and content organisation. In YTERA there are four calls per year when the doctoral students can apply for travel grants and for funding for foreign research work periods. There is potential here for collaboration with the PETRUS III framework.

F.J.E.T. says he will make an inventory of the different doctoral programmes and events and explore the possibilities for the PETRUS III project.

Work Package 4

Think-tank activities and the link with IGD-TP (powerpoint presentation: WP4ARAO)

Metka Kralj, ARAO.

This work package is the pivotal point in the project and although the deliverables seem rather administrative in their titles the content of and discussion behind these documents and the meetings necessary to produce them, are vital to the project.

This work package has two main activities. One is the evaluation of the quality of the E&T programmes. This will involve both the academic and the end-user points of view and relies on close collaboration between the two. This work package will, therefore, provide a constant flow of information. The ultimate objective is, of course, to develop strategies for sustainability and that via the IGD-TP.

The work package will set up a steering board of six members. Four members were already suggested in the preparation stage of the project, they are Mines Nancy (UL), Aalto, UPM and ARAO. We now need proposals for the two remaining members.

PMP. repeats that she feels the work package and the work programme contain at least one group or steering committee too many for one project.

B.B.-S. reminds members that this was **Tommy Claesson's** suggestion at the end of PETRUS II and agreed to at the time by the then consortium. It was felt that an advisory and evaluation committee was needed for the E&T programmes to handle organisation and promote and improve them with time. The committee is a long-term partner for the universities and its life extends beyond the length of the project.

PMP. demands a clear title and role definition for each group and committee in the Petrus III project from the coordinator to prevent confusion and to be clear on their tasks prior any work on assembling the groups is continued.

G.V.G. returns to the idea of the Think-Tank, which he considers as an excellent idea and wonders if there are already ideas on the issues to address.

B.B.-S. explains that the Think-Tank is related to the project itself and specifically the collaboration and exchange of ideas between PETRUS III and the IGD-TP on the subject of E&T. It will establish the long-term road map.

I.P. considers the role of the Think-Tank as being more far-reaching and believes that it should include more people – specifically outsiders to the project. Ideally, this would be an excellent pressure force.

G.V.G. adds that the Newsletter would be a good means of triggering discussion on hot issues (e.g. in view of Think Tank discussions).

Metka Kralj continues the presentation and asks for members' input on when to organise the meetings that are instrumental to the work package and on which the deliverables depend. She emphasises the need to meet face-to-face at least once a year and not to rely purely on e-contact.

B.B.-S says that **PMP** has indeed identified a potential problem – the potential confusion due to the number of sub-groups involved in the project. However, the end-user group needs to be separate as was proven by the PETRUS II project. It is a valuable group within the project and provides much needed input, its existence is vital to the success of the project as a whole. CMET/IGD-TP will provide the all-important vision for the future, but they are not so directly linked to the current development of the project.

B.B.-S would like **PMP** to lead this end-user group once again. IAEA and ANDRA are not currently part of PTRUS III for reasons not linked to the project, but they can be members of the end-user group.

M.P. replies that she does not intend to make any such decision until she has in her possession a written document clearly defining these different groups and their roles. Her role in PETRUS III is limited; her current involvement is in CMET activities. In order to work efficiently, the project needs a concrete, short (two-page) document that lists all

the groups operating under the PETRUS III umbrella. This will allow a clear vision of any overlapping and make it possible to streamline the groups and their activities.

N.Z. says that stakeholders' commitment is a key issue and believes there is a need for interaction beyond the project. It is important to gain full benefit from all the parties coming together and the discussion should go beyond E&T to other key issues.

G.V.G. agrees and underlines the fact that academic institutions can help answer a number of strategic questions in relation to the general public. It is not possible to involve industry in such activities as their answers are often considered as biased by the public.

Rosa Lo Frano also agrees and underlines the fact that the transparency of information coming from universities is considered at European level as more reliable, more accurate and free from self-interest.

B.B.-S concludes on WP4 by saying that it makes financial sense for PETRUS meetings to be synchronised with other group meetings (specifically CMET). During PETRUS II, end-user meetings lasted half a day or less and were incorporated into the biannual general meeting schedule, which was a highly efficient system. It also meant that participants outside of the consortium were able to attend providing them with a window onto the project's work. The next PETRUS III general meeting will probably last two to two and a half days, due to the amount of work to be covered, and it would be ideal if it could be scheduled to synchronise with the next CMET meetings.

Work package 5

Sustainability, External Collaborations and the Link with ENEN

(powerpoint presentation: WP5 ENEN)

Petra De Regge, ENEN.

Slide 6. There are 20 tasks within the ENEN organisation, the PETRUS III consortium should come together and take charge of one. **P.D.R.** suggests someone from the consortium may like to become a member of the board.

P.D.R. stresses that everything needs to be discussed, decided and agreed upon together in order to reach mutual satisfaction.

Slide 7. One requirement of the European Master's is 20 ECTS from a university abroad.

PMP asks if the 20 ECTS from a university abroad can be obtained (partly) by distance learning.

P.D.R. replies that this is not satisfactory. The idea is not just that a student should receive knowledge from a foreign source, but that he/she gain from the full experience (cultural and linguistic) of living and studying abroad.

B.B.-S. stresses WP5 is crucial to the survival of the initiative beyond the EC sponsored project. ENEN is the current solution to the problem of sustainability.

G.V.G. supports **B.B.-S.** and **P.D.R.** in their desire to impress on the consortium the importance of WP5. He explains there is a need for a common data bank with a powerful search engine to optimise the management of the many learning outcomes that will be produced by all Euratom Fission Training Schemes. He asks those members involved in ENETRAP about their experience and the problems they have faced.

Paul Livolsi replies that a tool (a database) with a large amount of information was created with the help of **Tom Clarijs** from SCK-CEN using ACCESS to describe learning outcomes for ENETRAP. PETRUS III may be the opportunity to contribute to a similar tool with adjustable levels.

B.B.-S. says that a first idea was to share a common budget (PETRUS and ENETRAP) to do just this. Unfortunately, the budget from ENETRAP was not forthcoming and despite the need for such a tool, PETRUS cannot support the cost alone.

A.A. asks if there is a report available on their procedure.

P.L. replies that there is.

PMP responds that multiple competence management software systems (tools) exist within the HR-domain, but they need to be adapted to the K-S-C approach (some programming is needed). This can be done, but it is not the objective of PETRUS III. EHRO-N is ideally situated to do this and it should be recommended that they set up such a database with open access for the developed information and for its use in the nuclear sector. EHRO-N has been discussing the collaboration on the databases in general with ENEN, specifically concerning the avoidance of overlapping course databases and this work could be extended. **G.V.G.** could encourage EHRO-N to take on this new task.

G.V.G. agrees and promises to forward **PMP**'s idea.

Tom Clarijs adds that soon the project will have many learning outcomes to deal with and ENETRAP can share their experience on how to deal with this. He continues by saying that no decision on the used taxonomy appears in the ECVET discussion in Petrus III. The Bloom taxonomy has been mentioned: should the project move forward with that?

B.B.-S. reminds members that he has included it in WP1.

A.A. says this depends on the number of job profiles to be worked on. He reminds everyone that it has been decided one or two would be best – safety and another more

general radioactive waste management engineer - involving many transferable learning outcomes in order not to waste time.

P.D.R. maintains the Bloom taxonomy should be integrated into the database and used as a basis.

PMP believes this is not realistic to use the full Bloom taxonomy as it is very extensive. It needs to be summarised.

P.L. suggests Anderson's taxonomy, which is adapted to technical jobs and is based on Bloom. It uses a basic twenty action verbs.

Work Package 6
Project Management
(powerpoint:WP6)
Behrooz Bazargan-Sabet

In one month a template will be sent for the Newsletter and we will require your input. Content does not have to be directly related to the project. Contributions may concern participation in or attendance at meetings or a summary of an interesting article, for example. **G.V.G.** has suggested members' feedback on PETRUS II project would be an interesting starting point for the first issue.

The first issue will be published towards the end of January/beginning of February – generally the date of publication will be around three months after a meeting. Members' contributions should be sent to **Petra Norroy** who will be in charge of editing the newsletter.

G.V.G. asks what type of royalties the project expects in case of commercial exploitation.

B.B.-S. says there are two elements to be aware of in relation to the IPR:

1. The courses belong to their provider and cannot be taught by anyone else, thus there is no problem of author's rights.
2. Little by little the project is collecting a bank of courses, discussion is necessary on access rights to this bank, always remembering the courses remain the property of their respective professor.

G.V.G. states this problem must be solved quite urgently and the common agreement should be documented in the consortium agreement (updated version later on?).

B.B.-S. reminds members that materials have to be shared with students coming from in and outside the consortium, however, those from within the consortium do not pay fees.

I.P. also reminds members that students usually sign a confidentiality agreement; they can receive the course material and use the content, but they are not allowed to transfer it to third parties.

B.B.-S. says this would be possible.

Rodica Elena Ceclan says that open resources have the advantage of there being no legal problems.

Consortium Agreement

Behrooz Bazargan-Sabet

The feedback from members is that the Agreement is generally acceptable. There are some minor modifications to be made, all of which are acceptable to the UL legal team. However, there are three points to be made:

1. Ownership of material.

There is some confusion regarding the use of PETRUS II courses for PETRUS III. The projects have no funding to produce courses. Partners can declare certain lectures and courses as background.

2. Role of the coordinator, especially regarding financial aspects.

The coordinator is in charge of funds distribution. If a partner does not fulfil its commitments, the coordinator is within his rights to freeze the funds. Aalto did not accept this clause, but the University de Lorraine's legal team maintain it must be included.

3. All partners do not seem entirely clear on what is considered as "background".

The legal department will prepare a new amended agreement incorporating all the other remarks and comments supplied by partners.

PMP would like to see the new consortium agreement version and proposes it be sent soon so that the signing can proceed. Posiva is in agreement with the changes discussed. She reminds **B.B.-S.** that the use of Posiva resources is limited to WP4 and there are some other minor inconsistencies regarding Posiva compared with the proposal DoW and the final annex I. PMP will send the coordinator a list of the discrepancies for clarification. One of these has already been corrected by the coordinator, i.e. the responsibility for the end-user council deliverables.

Next Meeting – date and location.

It is agreed the next meeting will take place mid-end March 2014, hopefully in **Cardiff** (pending their agreement to host the meeting), or if this is not possible, in **Prague**. Radek mentioned that CTU is ready to host the meeting at any time needed.

PMP states that dates between 10th-21st March 2014 would be the most suitable, where she and the CMET working group activities are concerned.

Members suggest the September 2014 meeting be held in Finland (either Helsinki (Aalto) or Eurajoki and the following March 2015 meeting in **Lisbon**.

PMP suggests the period 8th-19th September 2014 if the meeting is held in Finland.

*Minutes compiled by **Petra Norroy***

Mines Nancy, Université de Lorraine.

7th October, 2013.

Action List – subsequent to Kick-off meeting

WP	Action	Person Responsible	Deadline
	Approval for subcontracting costs not stated in the DoW and the related clarification is required from the EC.	Behrooz Bazargan-Sabet	
All WPs	Sufficient prior warning of delay in meeting deadline for any deliverable to be given to the Project Coordinator.	All WP leaders	
WP1	A.A. to proceed with an interview approach regarding job profiles. There may, however, be a subsequent problem prioritising the job profiles. There are more areas involved than safety, this might not be a priority for all.	Abdesselam Abdelouas	
WP1	A.A. will use the learning agreements currently used by Nantes under the ECTS as inspiration for the PETRUS III learning agreement.	Abdesselam Abdelouas	
WP2	Regarding accreditation methods, Aalto has already worked on something similar, linking learning outcomes to job profiles, however this is a visualisation tool and Aalto first needs to check that its use is technically possible.	Jussi Leveinen	
WP3	F.J.E.T. says he will make an inventory of the different doctoral programmes and events and explore the possibilities for the PETRUS III project.	Francisco Javier Elorza Teneiro	
WP4	The work package will set up a steering board of six members. Four members were already suggested in the preparation stage of the project, they are Mines Nancy (UL), Aalto, UPM and ARAO. We now need proposals for the two remaining members.	Metka Kralj	
Project Coordinator	PMP. demands a clear title and role definition for each group and committee in the Petrus III project from the coordinator to prevent confusion and to be clear on their tasks prior any work on assembling the groups is continued.	Behrooz Bazargan-Sabet	
WP6	In one month a template will be sent for the Newsletter.	Behrooz Bazargan-Sabet	November 2013
	Input required for the Newsletter	All members	January 2014 for 1 st edition

[PETRUS-III]