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# PETRUS-III PROJECT

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Deliverable n° 6.45

## Minutes of 5<sup>th</sup> PETRUS III meeting

Nature of the deliverable		
<b>R</b>	Report	X
<b>P</b>	Prototype	
<b>D</b>	Demonstrator	
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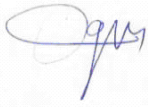
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Dissemination Level		
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<b>PP</b>	Restricted to other programme participants (including the Commission Services)	
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**ABSTRACT:**

Minutes of the 5<sup>th</sup> PETRUS III meeting held in Madrid on 8-9 October 2015

**Signatures**

	Name	Signature	Date
Prepared by	Alanah Reynor		03/11/2015
Revised by			
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Deliverable D6.45

Version n°1

Dissemination level: Pu

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**PETRUS III**  
**MADRID MEETING, Spain**  
**8 October – 9 October 2015 MINUTES**

*Participating members are first referred to in the Minutes by their full name and subsequently by their initials.*

**Introduction, Agenda Review and Project Management**

**Behrooz Bazargan-Sabet (BB-S), Université de Lorraine**

**Document – Petrus3\_Madrid\_Management.pptx**

**BB-S** – Following the change in EC officer from Georges Van Goethem to Christophe Davies, we need to start some discussions again. We should have a review point with him. I will have a meeting with him at the end of the month. I would like to discuss the progress of the project and the state of the project at that time.

BB-S shows the pending list of deliverables for each workpackage

**BB-S** – We will merge the “Learning outcomes” and “Programme units and associated credits” in WP1 as both of these deliverables are related to the job profile already presented.

**Jussi Leveinen (JL), Aalto** – We should have some sort of program agreement on WP2 on how we can calculate the ECTS. We need a common agreement on how to link ECVET and ECTS.

**BB-S** – I think a good link would be ECVT units and ECTS points. It makes it easier to assess a unit such as a course which could be counted as 10 or 20 ECTS. If we have equivalent points, some units can have different weightings such as lectures. If in the professional system we think about units and in the normal academic system we think about ECTS it could be a global aspect. The EC talk more about units than ECVET points now. The question is: Is it possible for you to produce a report on that before the end of the month?

**JL** – Yes

**BB-S** – I think the prototype of the PD programme is delayed. The first report of WP2 is needed by the end of the month and the second is delayed.

**Francisco Javier Elorza Tenreiro (FJET), UPM** – (Inter-university agreement for mobility) This has not been developed in a specific way but we have links with universities and we can produce a proposal.

**BB-S** – We should have a document that can easily be adapted for each partner who would like to do that.

**FJET** – We need to discuss whether we will use a multi-partner agreement or a bilateral partner agreement.

**BB-S** – Partner by partner seems to be more effective for my point of view.

**FJET** – A universal system would be difficult but I will send you a proposal that can be adapted.

**BB-S** – “Minutes of PETRUS-CMET exchange workshops” should be done now but nobody from CMET is present so it is a bit difficult, but there is a meeting in December so it can be done then.

**BB-S** – WP5, Pedro will be here tomorrow but he told me it is possible to do these two deliverables.

**BB-S** – WP6, the minutes will be produced by Alanah. A newsletter is ready for publishing, Alex sent it in September to our communications department. One problem is that Alex had not received 2 or 3 contributions from the WP leaders so he asked me to write something for the missing WPs. This is a problem with the production of the newsletter.

**BB-S** – I would like you to go to the EC Participant Portal to check the production of the different deliverables. The reports are related to our relationship with the EC but the deliverables are open to everyone. All of the documents that we have to produce are listed with the date we have to produce them by and who is responsible.

### **Financial Statement**

**Behrooz Bazargan-Sabet (BB-S), Université de Lorraine**

**Petrus3\_Madrid\_Financial.pptx**

**BB-S** – There is a small problem with the Linnaeus university report. But this can be solved in the next periodic report.

**Tommy Claesson (TC, LU), Linnaeus University** – I have spoken to the financial officer and it is being sorted.

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BB-S presents the summary of the financial statements.

**BB-S** – 100% in my table means that you have spent half of your allocated budget during the first period, so the normal amount in this table should be over 100%. Those presented in green means that there is hope that by the end of the project these partners should be at 100% or over. The concern is about the partners highlighted in yellow and red. If you stay at this stage, it means that you will have to reimburse the Commission at the end of the project. For the people in yellow, there is a possibility to readjust and you can add some expenses that were not declared in your first report. 50% is not a bad situation, you can produce an argument if your accountability does not take everything into account. The second period and adjustment can solve the problem for the yellow. However we have this red situation. Cardiff University has a projection of only 12% for the end of the project but they are one of the highest funded on the project. The first point is that we would have to ask partners to reimburse the money, the second point is that reimbursement would mean also that the project was badly managed. I personally ask all the yellow and the red partners here to produce a forecast of their expenses for the next period and to show us that they can use the money. If you can't, you need to tell us now so that we can transfer the money to other partners to do the expected job. We should produce an amendment **no later than December 2015** for the EC in this case, as the project will end in 2016. It is really important that we know the situation of each yellow and red partner.

**JL** - The current situation is that most of our deliverables are not until the second half of the project, so most of the money will be consumed in the second half of the project. If this changes, I will let you know.

### **PETRUS 2015 PhD Conference (outcomes)**

**Behrooz Bazargan-Sabet (BB-S), Université de Lorraine**

Document – Petrus3\_Madrid\_PhDevent.pptx

**BB-S** – I was prepared for 150-200 registrations so I was disappointed with the figure of 73 registrations by the end of the event. If you have any ideas regarding advertising, please let me know for the second event. However, we did have a real European event as these 73 people came from different countries, French participation was not too high.

### **PETRUS 2016 PhD Conference**

**Philip Vardon, TU DELFT (PV)**

**PV** – Annual event, the next one is to be hosted at DELFT. The idea is to have 50% of the research developed there and 50% of PETRUS data presented at the event.

The prospective date is the week beginning the 27<sup>th</sup> June. We anticipate a similar number of registrations.

The outline programme is similar to that of BB-S. Our concept is to make the teaching lectures shorter to have a wider range of subject areas. Do you think this is a good idea?

**Tom Clarijs (TC, SCK-CEN), SCK-CEN** – Presentations of 45 minutes could be a good idea.

**PV** – We would also do a visit of our reactor and the site where radioactive waste is stored, in order to mix the academic side with field trips. We need volunteers, please send me ideas and I would like volunteers to present at the event. We also need members of the jury. Please block out that date, even if you can't come for a whole week. Any suggestions as to the format?

**BB-S** – The conference is briefly mentioned in the newsletter but it will be covered in-depth in the next issue.

**Rosa Lo Frano (RLF), University of Pisa** – There is another conference in the US in that week.

**BB-S** – We will need some advertising text for the next newsletter. I also recommend having at least 2 lectures from the PETRUS side. I think Jenny's talk is really interesting and should be repeated. It was really appreciated by the students.

**PV** – Any other suggestions, please let me know.

**BB-S** – Also a strategy for advertising is needed. This is the big reason why we have so few registrations. For the students, it was really cheap compared to other conferences.

**RLF** – Some of my students were interested but couldn't attend. We need to make sure that it doesn't overlap with other events.

## WP1

### **Abdesselam Abdelouas (AA), École des Mines de Nantes (participation by video chat)**

**FJET** – Yesterday we looked at this and there were some comments made. First of all, the skills and learning outcomes have a high knowledge level. The courses are described and the outcomes are defined. If the level of the course is "understanding" it's difficult to have "perform" as output (for example "perform hydrogeological modelling"). There is a discrepancy between the description, the learning outcomes and the amount of hours dedicated to each course. Tom gave us an example of a specialised training module (ENETRAP model PDF) which is a lot simpler. We need to synchronize the level of the competence and the course.

The second comment made was from Enresa.

**Joaquin Farias Seifert (JFS), ENRESA** – Our comments are based on questions we made to people involved in licensing in the storage facility. Most people believe that the topics should be more specifically indicated. An engineer should be able to access this knowledge very quickly, very easily and this is not easy to understand.

**BB-S** – We have discussed this in past meetings. The thing is that we're not looking at someone who can do everything, the profile here is a safety engineer. He doesn't need to know how the whole system works in details but he needs enough skills to understand what the specialist is saying. He doesn't need to be a specialist in everything.

**JFS** – Basic understanding should be considered.

**JFS** – Seismic hazard has been a very important issue in Spain. This issue has taken more time than hydrogeological issues. For us this is very important, maybe we should focus on it more.

**BB-S** – Once again you're right, we can't have people who are knowledgeable about seismic hazard.

**JFS** – The ideas I have put in these slides are topics that we find are very important, such as spent fuel. Sometimes there is a kind of spent fuel which needs special care.

**JFS** – This idea should be considered. They were done by EURATOM and others on R&D projects. It is a big problem to repeat other activities or to ignore what they have done.

**BB-S** – This was a problem we had in ENETRAP, we need to consider what needs to be told, what needs to be written and what the candidate can be asked to do by themselves. Some things can be part of personal work.

**JFS** – They need to know that there is a body of knowledge there. Explicitly they have to know the main regulations, especially international regulations. Every country is different but they need the references.

**BB-S** – These regulations need to be considered as self-training.

**JFS** – The idea is not to read through all the documents but it should be considered.

**TC, SCK-CEN** – In unit 2, there is already some framework for the sub-course (Understand safety requirements for disposal of radioactive waste). It may need rephrasing but it can be included there.

**BB-S** – There are some problems with the presentation of these items. We need to be able to quantify the number of hours needed for each part. Coming back to the first question about methodology, modelling etc. I think at this level the candidate should be an engineer with several years of work behind him. If you take any engineer now, modelling is a part of the job. I don't know any engineer who can't do this.

**FJET** – I think it is a problem with the description of the different units. In unit 1 you say "understand ...", it's only understanding. It's important to follow direct methodology. There is something missing. We need to make this more easily understandable and more coherent.

**BB-S** – I understand that for this question we need to change the performance.

**FJET** – Particularly yesterday we were discussing certain parts such as "Uncertainties management", 25 hours is too short.

**BB-S** – Of course 25 hours is not enough if we want the guy to be able to carry out analysis.

**FJET** – The stakeholders must give their opinion.

**Bojan Hertl (BH), ARAO** – This is the goal of the end user council. As I said yesterday, the university is preparing a proposal to get feedback from end users. It is very important to get feedback. We now have feedback for a technical discussion on how we should adjust for end users and still be programming competences.

**JFS** – It's not easy for engineers to understand these courses.

**BB-S** – The guy we are discussing here is the manager of the scheme. He must be able to discuss with his team and understand what is produced. He cannot be a specialist in everything. That is why we chose a guy with hydrogeological background because it covers a large part of the skills needed.

**BB-S** – (to AA) We discussed WP1 yesterday but we would like to have your opinion on this excel file that you sent us. We have new comments on that. The first observation is that in unit 1 (basic knowledge) some other subjects have been identified and we would like to add them to the list. There is also a discussion about skills in unit 1, in particular the term “perform”. This is considered as being higher than the objectives of the courses. Regarding skills, you ask the guy to be able to perform rather than understand. Performing hydrogeological modelling seems to be a higher level, more difficult to do with only 30 hours of course.

**AA** – I sent this file a long time, of course everyone is busy but the only one who responded was Marjatta.

**BB-S** – Is it possible to change the word “perform” in this first unit and to use another word which is closer to the term of understanding which is the main subject of this basic knowledge? Perform means the mastery of everything in hydrogeological modelling.

**AA** – FJET, what do you think of the verb?

**FJET** – To use, to be able to use the results of the model. It's the same with another part later in the file. To perform again is not necessary as it could be the supervisor who needs to be able to use the results of his team, so he needs to be able to understand it. There's a lack of coherency between the verbs in the different documents. Some verbs need to be synchronised between the lessons and the learning outcomes.

**AA** – I also discussed this in Lisbon. You can add whatever you need. Maybe the learning outcomes of unit 1 are very short, you can add more and more.

**FJET** – Both JFS and BH said yesterday that we need to be more precise in this kind of commentary.

**AA** – What I'm doing here (Lisbon) is exactly that.

**BH** – Yesterday we also had an interesting discussion on ENETRAP concerning the learning outcomes. A common approach could be useful, to link this with ENETRAP. Also, ENRESA prepared some comments as the end user council should have done but this has not happened. We now have



some serious responses from the end user council which we have sent to you. This happened yesterday and they are good feedback results. You can go through it and see what should be taken into account.

**AA** – Indeed, this is teamwork and it can be improved. Most of this profile is based on my experience with Andra. Any input from end users is important for us.

**BH** – It is a good profile, but we need some adjustment.

**AA** – Is ENETRAP III radiation protection?

**TC, SKC-CEN** – Yes

**AA** – I don't agree with the way this radiation protection expert was written. As you can see in my file with the learning outcomes and skills. In the case of the ENETRAP II they wrote each line in knowledge, skills and competences so that at the end of the day you were just lost. You end up with 500 learning outcomes and skills. I tried to be more concise and I could have come up with 7 units, which is the problem. Yesterday we talked with Le Febvre, an ECVET expert: typically you should have no more than 5/6 units. Less is better. All of these profiles should not be wide, they need to be concise.

**BB-S** – Just to be precise, we are talking about ENETRAP III not ENETRAP II, we have sent you the details. I agree that the two ways of proceeding are different. In PETRUS III, we chose another method of description than ENETRAP. ENETRAP already have several years of experience in running these modules, unlike us. We need to describe the units in terms of different courses and not go into too many details. We need to decide on the size of these units. What is important is the description of the unit with the size of the unit. What we can learn from module 9 of ENETRAP III is the systematic approach. They have decided to follow exactly what is in the ECVET outline. We have not followed this approach, we have discussed what is needed in the different demos. We have looked at the best way to tackle these problems.

**AA** – I did it the way we do it here. We start with the job profile, then we break it into units and then each unit can be broken into learning outcomes, skills and competences.

**BB-S** – The difference is that with radiation protection, the job profile is already defined. We have started discussion with end users to discuss the job profile. They say that we need to begin with the outcomes and then go to the profile.

**AA** – We have tried this and it doesn't work. I didn't have any feedback from the end users, so what I did is based on my experience with the French agency. The head of this assessment team is in my Master programme, so I interviewed him and he had lots of job profiles within his team so I tried to include these. However the job profiles are not always the same.

**BB-S** – I'm underlining the difference between ENETRAP III and PETRUS.

**TC, SCK-CEN** – I see that the course content is written with action verbs and they're written for the outcomes. A few outcomes per unit would be sufficient. The course content is clear, so I think that we could leave out some action verbs.

**AA** – We can take out the verbs, this is the knowledge part. I put the subject in front of the line of each learning outcome. The learning outcomes that I have put in the table are the average learning outcomes from each sub-unit.

**TC, SCK-CEN** – You can derive the outcomes from the description. There are learning outcomes and attitude for each part of the course but sometimes there are not always these. Sometimes you just gain knowledge.

**AA** – Yes we also discussed this yesterday. So do you agree that we can have average learning outcomes and not split each line?

*General consensus*

**AA** – I need a written format of these comments.

**BB-S** – You will receive the PowerPoint prepared by ENRESA. It contains comments. We can't go into the details now.

**AA** – What I need are the comments. FJET, can you let me know about the learning outcomes for the modelling? I can work on them and then I will send it back to everyone. This is what I will detail in the final report from my side.

**BB-S** – We need this report by the end of the month. We will try to have a discussion and then we have to close the issue and send the deliverable.

**AA** – I will finish this report and try to get on with the second profile, which is the safety engineer from the facility operation point of view. It will be very different from what we're doing here and will involve lots of interaction with safety authorities. This is much more administrative work. It should be easier than this one.

**BB-S** – Let's close this discussion about WP1.

## **WP2**

**Jussi Leveinen (JL), Aalto**

**Document – Aalto\_WP2\_madrid.pptx**

JL proposes to write the deliverable 1.6 concerning the Memorandum of Understanding.

**BB-S** – So you will do the job regarding the memorandum.

**JL** – Yes.

**BB-S** – This was normally a part of WP1, but we can change it.

**JL** – The two packages need communication.

**BB-S** – Regarding ECVET and ECTS, we need to take into account the number of units needed. We can directly link the number of ECTS to the unit. For example, for unit 1, we have 70 hours of course which is equivalent to 7 ECTS. This unit can be thought of as 7 ECTS. We can propose this as a methodology between the size of the unit and the number of ECTS. The other point is the workbooks. This can be part of the evaluation situation, linking the ECVET to the ECTS. For example, if we ask a guy to do practical training, we can use the same system. These two things for me are the most important to link the ECVET programme and ECTS. If you can summarize this in a document, for me that would be enough.

There is also a question about the chance of finishing this WP with a proposal for the implementation. Is it possible to have this framework by the end of the project?

**JL** – The prototype of the outcomes should be ready now. We have very advanced (but not final) versions of the working profiles. We need to have course descriptions with the same terminology and an idea of where they are and how they are provided, which we don't have at this point.

**BB-S** – The prototype doesn't need to be detailed, but we need to know how we must proceed. We need to have the description, the number of partners who can provide this training, these lectures. We have to describe exactly what is needed, what is included and if someone can provide it, how the university can produce the framework to carry out this Master. We need a list of things to do, the consequences and how the university can use that to launch a qualification.

**JL** – After this last deliverable, I didn't get many comments from our legal department. This will be delayed.

**BB-S** – The important part of PETRUS III is the implementation. By the end of the project, we must produce some deliverables on this matter. "Regarding the implementation, we have done ....". We have put all of the pressure on you but there are many universities here. If you need some help from us, just ask, we can help. Aalto University seems to be the most advanced regarding the implementation of exotic ECVET systems so that's why it's better to ask you but if there are any questions or you need any input from us, don't hesitate.

**JL** – I have some doubts as to our capability and willingness to do this given the changes in the university right now. However, a proposal from outside would be more favourable.

**BB-S** – We can also come and discuss with the administration

**JL** – I will check some schedules so that we can have a joint meeting.

**FJET** – The implementation could be from an official Master or a private Master, but we don't need an official Master recognized. With this prototype we can start with a private one and then later work on an official one.

**BB-S** – To start with, you can work with 10-12 universities and then after a few years establish it on a national level. This can depend on the country.

**AA** – For WP2, we don't need much detail for the courses. From my point of view, the excel spreadsheet is enough. We're not preparing a syllabus for a Master's programme. We can not

describe a skill each time and assign knowledge on the university web. We should recognize that someone who worked in a company should be able to validate his competencies but the problem is how do we assess this?

**BB-S** – Before discussing the assessment, we need to solve several problems regarding the administration.

**JL** – In Finland we have had some professional development programmes, for example for mining engineers, so there are these kinds of alternatives. Preparation of those programmes is not my job, that's the responsibility of others. There's a department in my university and they don't respond positively when we ask them to invite outside lecturers.

**BB-S** – How this can be done correctly can be a matter of discussion with this department if you can ask them to participate.

**JL** – Or a higher level.

**BB-S** – One of Aalto's interests in this would be to register students in the new system. Aalto would receive the majority of the fees. It's in Aalto's interests to be the first ones to implement it.

**JL** – Participation from other universities would carry more weight with the higher levels.

**BH** –The steering committee can go and do that.

**JL** – The steering committee and the ministry of trade and industry who have been working on nuclear waste management. When would this be possible?

*A separate meeting between PETRUS and Aaltos administration has to be organized*

### **EURATOM call for proposals**

**Behrooz Bazargan-Sabet (BB-S), Université de Lorraine**

**Document – Petrus3\_Madrid\_Euratom\_Call.docx**

**BB-S** – There are two subjects in this call that could be addressed by our consortium:

- [Pan-European knowledge sharing and development of competence on radioactive waste management](#)
- Support for careers in the nuclear field

I would like some input regarding the first line of the proposal.

**Radek Vasicek (RV), Centre of Experimental Geotechnics, U Prague** – So it means that we need a consensus from some target countries. Which countries?

**BB-S** –At the general level, we must target not only countries with power plants, but all countries in Europe . I'm already in contact with some groups in Poland through other channel than PETRUS. Indeed, this cannot be a continuation of the PETRUS initiative but our experience within PETRUS could be an element of the response.

**BH** – Is this just for high-level waste or all waste management?

**BB-S** – It is for all waste management.

**BH** – In that case it would be very interesting for small countries. It's important in Europe to have some chances to connect on a common European level.

**Israel Cañamón Valera (ICV), UPM** – All countries need some sort of waste disposal.

**Mario Joao Capucho dos Reis (MJCR), UPM** – If we consider radioactive waste management as a whole, this is a good idea.

**FJET** – I support this idea. We have all kinds of waste and we can participate. AS BH said, it's important to have a European agreement on this in order to share knowledge and perhaps also territory.

**BB-S** – An important point to underline in this proposal, it's not about how to produce courses or training programmes but rather how to produce a common vision of what we need to share between countries. Are we able to propose something in this area or is it out of our target or competences?

**MJCR** – I don't think it is out of our scope.

**BH** – But we will have strong competition.

**RLF** – But we can maybe integrate them in the group.

It could be a way to follow up on this topic. It would be a good moment to profit from this given the change in radioactive waste levels.

**BH** – As the document says, it is important to start on the national level. We need these skills and competences that you can reach when you need it.

**TC** – It's difficult to predict in terms of knowledge transfer and how we can contribute. We could be a valuable partner in terms of knowledge transfer but from a practical point of view it's maybe better to use the platform.

**Pedro Dieguez Porras, ENEN (PDP)** – Practical question: This would be like PETRUS IV? I received an email from the CMET group saying that it wouldn't be supported. This is about national problems, who is in charge of these problems? It's more about companies.

**BB-S** – This is a good point. As I said before, this cannot be considered as a continuation of the PETRUS initiative. In the other hand, the lifetime of CMET is now reaching the end. The problem is that IGDTP is not very committed to making another CMET group, at least not in the same format. There would be no funds to have a CMET group as we have now. So I don't think we can ask CMET support for that. IGDTP is only based on geological disposal, so something specific. Many of the targeted countries are not members of IGDTP. Of course, we need a minimum of support from IGDTP but we need also support from ENEN and from other organisations for instance national organisations like ministries or regulatory bodies. We need to have a lot of involvement if we decide to launch a proposal.

**PDP** – The ENEN will provide support. Besides IGDTP, which other platforms can we talk to regarding these problems?

**BB-S** – If we would like to present a proposal, we should also discuss with national authorities and other structures and organisations involved and active in this field from different countries.

**PDP** – Are there other European platforms where radioactive waste management is involved?

**JFS** – There are some organisations which may like to get involved. They are involved in nuclear energy but a part of that is waste management.

**BB-S** – If we decide to do this, we have some lobbying to do. What about you KP?

**Karsten Pedersen (KP), Microbial Analytics Sweden AB** – I was thinking about the “Mind” project and what we have there. For us personally that would be possible.

**BB-S** – Do you think SKB would be interested in this?

**KP** – Maybe, but especially now we have the Mind project. The experience SKB have gained could be interesting.

**BB-S** – From the Swedish authorities would it be possible to bring support to the program?

**TC, LU** – I cannot see a clear link for Linnaeus University to take part, but I think that the SKB would be a very good partner in this project.

**JL** – In Finland the main partners would be Posiva but also geological surveys. They could be an interesting partner.

**Rodica Elena Ceclan (REC), University Politehnica of Bucharest** – We could involve the national authorities and the national regulatory authorities.

**PV** – IGDTP are moving toward implementation. I think we should follow that path. We have examples and pilots but I think we should have an implemented system even if it is at a lower scale than what we would like. The university would be interested. Also, we have the JOPRAD project that had some lines which were linked to the work of PETRUS.

**BB-S** – In order to be able to present something, we should also have a discussion with JOPRAD and find what we can bring through a new proposal.

**PV** – They are listing requirements so we can answer those requirements. It wouldn't be an overlap. At the moment, it's in the draft document in a vague way so I think it would be possible to link into that. For me I think we should focus on implementation.

**BH** – We have a product that we can work at implementing. We have something to offer. Maybe the problem is that we have focused on high-level waste and now we're going broader. Smaller countries have problems accessing knowledge and research on all types of waste. We could succeed in gathering these programs.

**RV** – We would like to participate.

**BB-S** – Josef Laboratory could be a good candidate for extending the aspect of waste management to other countries.

**RV** – The start and end point of everything is money. Everyone wants knowledge but is not willing to pay for it. We talked a lot about implementation but it always came down to who will pay.

**BB-S** – One of the weaknesses of the present project is how to ensure the financial aspects. We must include the mechanisms of funding in the next proposal. It's not just about the transfer of knowledge.

**Giovanni Pugliese (GP), University of Pisa** – In Italy, they are very sensitive to waste management so this project would be favourable in public opinion.

**BB-S** – Could you give support to this proposal?

**RLF** – I would have to talk to my colleague.

**BB-S** – We have some time to discuss as the call is not yet open but this discussion was good. We have to think about a possible proposal and bring an answer in our next general meeting.

**PDP** – I could offer a contact with a nuclear waste agency in Romania.

**BB-S** – Now regarding the second line, how can we proceed?

**PDP** – I think the budget was increased as they are also considering giving funds to students.

**BB-S** – Whatever the amount, this is a high-level project regarding funding. I think that the proposal should come from ENEN. My suggestion is that PDP prepare some meetings through ENEN on how to tackle this proposal and how to prepare it. We can use ANNETTE as a reference.

**PDP** – At ENEN we were discussing increasing the prices for the PhD event that we host, so we could align all the different activities between PETRUS and ENEN in this proposal.

**PDP** – What is the feeling of radiation protection regarding this?

**TC, SCK-CEN** – I think the radiation protection community would support a large integrated project for this call.

**BH** – Is it possible to include radiation protection in waste management?

**PDP** – That is my question.

**TC, SKC-CEN** – It's a bit confusing. Are we suggesting just something in radioactive waste or a bigger scale?

**PDP** – Would ENETRAP be willing to participate in a common proposal?

**BB-S** – I propose a project under the umbrella of ENEN including at least the 3 communities: geological disposal, engineering and radiation protection.

**TC, SCK-CEN** – I think the radiation protection community would join in this call.

**PDP** – There is a lot of budget for students which I think is very good.

### WP3

**Francisco Javier Elorza Tenreiro (FJET), UPM**

**Document – WP3 UPMMadrid.pptx**

**FJET** – We need to go ahead and provide more stable support to mobility.

**BB-S** – Is there this same structure in Aalto?

**JL** – Yes, it's very similar.

**BB-S** – We talk about the PETRUS training programme as a Master level so to reach a PhD level we need the applicants to have a Master level. This could be a good argument for you to reach an access level for an industrial PhD.

**FJET** – Industrial but supported by a lot of schools, for example in Catalunya.

**BH** – They also have a Masters?

**FJET** – It is doctoral.

**BB-S** – For this programme, you need to have a Master. We can propose the PETRUS programme as access for this.

**PV** – Does it need separate legal status?

**FJET** – Of course. You will have a diploma from the university and a diploma from PETRUS.

**PDP** – Yes there will be an endorsement from the doctoral school.

**PV** – So it doesn't need any official endorsement.

**PDP** – You can influence ENEN with proposals. Inside ENEN are working groups. There is a working group of PETRUS. After the conclusion of this meeting, BB-S can send a letter as a working group of ENEN demanding support of this initiative. They can say that ENEN members are asking for support, so we need an official document to ask for support. Then we can implement. This is to make it official. It's better to have a document from you as a working group rather than me just sending an email.

**FJET** – This could also be useful for other parts of ENEN.

**PDP** – If we decide to create another certificate for waste management, the working group is here and we need an official letter discussing the result of the working group. It would be internal communication.

**BB-S** – FJET and I can do that together.

**PDP** – I'm asking this because our website for example is quite old and to create this doctoral school we need to update the website to make it more flexible and modern.

**FJET** – This idea comes from Aalto and other universities so we can share between universities.



## WP4

**Bojan Hertl (BH), ARAO**

Document – Hertl ARAO WP4 PETRUS III MADRID 2015.pptx

**BB-S** – I agree that these three events can be organised at the same time in Ljubljana (PETRUS Project meeting 6, PETRUS extended end-user council meeting and IGD-TP CMET WG meeting 7). If some of you feel that other people are necessary in this discussion, they are welcome.

**FJET** – This will be the last end-user council meeting so we can perhaps invite other agencies for discussing also the next call for proposals.

**BB-S** – The important thing to know is the deadline of the proposal. I think we have to initiate the first contacts before our next meeting. But, indeed any external participations are welcome.

**TC, SCK-CEN** – I have seen on the EC that proposal submission opens on 11<sup>th</sup> May 2016 and the deadline is October 5<sup>th</sup>.

**BB-S** – This meeting will last a bit longer than a normal meeting. It could be three days or three and a half days.

## WP5

**Pedro Dieguez Porras (PDP), ENEN**

**PDP** proposes two options for the labelisation of the PETRUS programs by ENEN.

**BB-S** – In the report, I would rather you explain both systems. Regarding the Academic Master Program, we are closer to the first option, we have courses of a maximum of 120 hours and we are not able to present the full program every year to our students. If we go with the first option, students must come from other ENEN communities than waste management so we can give them up to 20 ECTS. This could be good as we have some difficulties in finding students for the program. We can hope to have more students from institutions other than my own. The second option implies to have a full program but it is not effective yet. To have this full program would be mostly possible through recorded courses such as a MOOC. This is what we are trying to do but it will not be effective during this PETRUS III project. We can work towards it later. In the short term we can implement the first one.

**PDP** – The idea would be to have 20 ECTS with PETRUS, 20 ECTS with another member (an exchange) and the last 40 ECTS could be taken from this list of topics. Should we make a list of topics outside of PETRUS?

**BB-S** – The problems for the participants in the Master program are generally related to waste management. The other courses aren't directly linked to nuclear activities. It cannot be considered as

a nuclear program. Some students would be interested in having courses on geological disposal so we can provide them with 20 ECTS through different courses.

**PDP** – We can have students who can have a certificate of 20 ECTS with PETRUS and another course. It would be good for students to be able to take more ECTS with a longer list of topics.

**BB-S** – We can establish such a list.

**PV** – Can that be taken from the work profile AA has been working on? We can base it on that.

**PDP** – Yes we can.

**BB-S** – Send us an e-mail as a reminder.

**PDP** – Yes I would like to have more opinions.

**BB-S** – So this is on top of a Master?

**PDP** – You can do a Master and then take 20 ECTS on top. I need information on the content of your Master programs to create a new list of topics.

**PV** – The Master thesis has to be on the topic of PETRUS or anything?

*Several* – It has to be related at least.

**FJET** – If we limit this to 20 ECTS, they could finish this in less than a semester.

**PDP** – It's at least 20 ECTS. I need the information from AA in order to start considering the other options.

**FJET** – It's much easier to work with the academic calendar so we need to have them there for at least 20 ECTS and a semester.

**PDP** – I will try to write a report that is as broad as possible so we can see if we need to make it more complex.

**BB-S** – This is the academic program. On the other hand we also have the professional program. Can we expect to have this qualification for both programs?

**PDP** – Yes

**BB-S** – So if someone already has a Master degree and then only does the 20 ECTS PETRUS....

**PDP** – No, this is a private diploma. In his syllabus he could have covered these ECTS. What is very important is the foreign institution to make it European.

## **IGDTP and CMET**

**Behrooz Bazargan-Sabet (BB-S), Université de Lorraine**

**BB-S** – I think that the working group within the IGDTP will stop at the end of the year. It will be interesting to know if they launch a new group. There is an IGDTP meeting on the 3<sup>rd</sup> and 4<sup>th</sup> November in London. This is mainly a technical meeting but it is possible that the situation with CMET will be covered. In December the CMET group meeting takes place in Prague. However the future of CMET is not dependent on CMET, it depends on IGDTP.

### Interaction with ENETRAPIII

**Tom Clarijs (TC), SCK-CEN**

Document – PETRUS III meeting Madrid\_TC.pdf

**BH** – Who will be the lecturers on nuclear waste?

**TC, SCK-CEN** – It depends... researchers, members of the authority and international lecturers as well. I will forward it to you ASAP.

**PV** – How many students do you think you will have?

**TC, SCK-CEN** – I don't know. I don't doubt that the courses will be popular.

**BH** – Nuclear waste or radioactive waste?

**TC, SCK-CEN** – Both.

**BB-S** – This program (module 9) is dedicated to radiation protection experts who would like some knowledge in waste area, rather than for experts in geological disposal. Within the PETRUS program, we should develop courses or lectures about radiation protection to include it in the program. I feel it is missing from many organisations. Most engineers working in this area don't have enough knowledge on this matter. It could be an interesting development for PETRUS.

**TC, SCK-CEN** – You will find the information on the academy website: <http://enetrap3.sckcen.be/>

### Miscellaneous – Next meeting Schedule

**Behrooz Bazargan-Sabet (BB-S), Université de Lorraine**

**BB-S** – BH suggests we have the next meeting in Ljubljana in March 2016. It will be a very important meeting because we need to discuss what needs to be done by the end of the project.

*General consensus*

(more details included in WP4)

*Minutes compiled by Alanah Reynor*

*Université de Lorraine.*