

Co-funded by the



CEBAMA

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Minutes from 2nd Annual Workshop

Editors: Alba Valls, Lara Duro (AMPHOS21)

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Project co-funded by the European Commission under the Euratom Research and Training Programme on Nuclear Energy within the Horizon 2020 Framework Programme		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the partners of the CEBAMA project	
CO	Confidential, only for partners of the CEBAMA project	

ABSTRACT:

The 2nd Annual Workshop of the collaborative project Cebama was held in Espoo (Finland) on May 16th – 19th 2017. The workshop was hosted by VTT. There were 66 attendees, including beneficiaries, End-User-Group members and project external organizations.

The workshop was organized during four days including different sessions:

- a) oral presentations on WP level where beneficiaries describe the progress achieved in each workpackage,
- b) specific talks on Finland profile and Safety Case,
- c) individual WP sessions focused on enhance the interaction between beneficiaries,
- d) scientific-technical poster session,
- e) stakeholder panel,
- f) PhD session,
- g) optional visits to VTT Lab and Olkiluoto.

The workshop also included the ExCom and EUG meeting and the General Assembly. The minutes of this meetings are described in a different document available in the intranet of the CEBAMA project

The main scientific outcome of the workshop will be reported in the 2nd Annual Proceedings which will be available to the open public at the Project Website, as a KIT scientific report and as a deliverable.

RESPONSIBLE:

Alba Valls (AMPHOS21)

MAIN TEXT: Minutes of the 2nd Annual Workshop of Cebama

Event: 2nd Annual Workshop

Date and place: May 16- 19th 2017, GTK (Finnish Geological Survey) building in the neighbourhood of Otaniemi, city of Espoo (Finland).

Participants: 66, representing Beneficiaries, EUG and project external organizations.

A detailed list of participants, is given in the of this deliverable.

The 2nd Annual Workshop of Cebama was a cluster of the following meetings, sessions and visits:

- ExCom meeting,
- EUG meeting,
- Individual Workpackage meetings,
- Plenary sessions (presentation of workpackage outcomes),
- Scientific-technical poster session,
- Specific presentations on Finland profile and Safety Case,
- Stakeholder panel,
- PhD session,
- Optional visits to the GTK, VTT underground Lab, Olkiluoto site,
- General Assembly.

The general Workshop agenda is presented in Figure 1. The detailed agenda is included in **Appendix 1**

Specific minutes for the ExCom meeting, the EUG meeting and the General Assembly are prepared separately to the Workshop minutes (this document). The minutes are available at the intranet of the project (www.cebama.eu). Their intranet location depends on who is allowed to read the minutes (see Table 1).

Table 1: Minutes prepared additionally to this Workshop minutes

Meeting	Addressee	Intranet location
ExCom	Restricted to members of the ExCom (Coordination Team and WP leaders)	<i>Files/ExCom/Minutes</i>
EUG	Restricted to members of the EUG and the ExCom	<i>Files/End Users Group/Meetings</i>
General Assembly	Restricted to beneficiaries	<i>Files/General Assembly/Meetings</i>

Agenda (16th–19th May 2017)

Tuesday 16 th May 2017		Wednesday 17 th May 2017		Thursday 18 th May 2017	
09:30-11:00	1 st ExCom meeting (restricted to ExCom members)	08:30-09:15	Associated Groups & Safety Case presentations	09:00-10:30	WP2 plenary session
13:00-14:00	Welcome + Presentation by the Coordination Team	09:30-11:30	WP1 plenary session	11:00-12:00	EUG feedback + General Assembly
14:00-16:00	Individual WP sessions		LUNCH		LUNCH
16:00-16:30	1 st EUG meeting (restricted to EUG/ExCom members)	12:30-14:30	WP3 plenary session	Optional sessions:	
16:30-18:00	Finland Profile: Posiva & Finland's Geological Survey. Guided visit to the Geological Museum.	14:30-17:00	Socio-political Stakeholder panel discussion (public event)	13:30-14:30	VTT Underground Research Lab tour
	-- Workshop DINNER --		POSTER SESSION	13:30-16:30	PhD and young researchers session + VTT lab tour
		18:00-19:00	2 nd ExCom meeting with EUG (restricted to ExCom/EUG members)	Friday 19 th May 2016	
				07:00-18:00	Posiva site excursion: Olkiluoto Visitor Centre, Low & intermediate level repository

Figure 1: General agenda of the 2nd Annual Workshop of Cebama.

The following texts provide an overview of sessions and events held during the Workshop.

Welcome and Presentation by the Coordination Team (16.05.2017)

Satu Helynen, Vice President of Nuclear Safety Research and Erika Holt, on behalf of the host organization, VTT (Technical Research Centre of Finland), welcomed the participants and gave an insight of VTT and its Nuclear Energy Competences.

Marcus Altmaier (project coordinator, KIT-INE) proceeded with the presentation of the Coordination Team, mainly focussing on managing and coordinating aspects of the project as well as on Knowledge Management and dissemination actions. The corresponding transparencies are given in **Appendix 2**.

Individual WP sessions (16.05.2017)

After the Coordination Team presentation, the individual WP sessions took place in parallel (WP1, WP2 and WP3). These sessions were devoted to internal discussions on the progress of each WP and to agree on the data exchange between work-packages in order to achieve the following milestones:

- M1.5: 1st WP1 data freeze of experimental data (input to WP3)
- M2.2.1st WP2 data freeze of experimental data (input to WP3)
- M3.2: Input received from 1st data freeze of experimental data (from WP1, WP2)

The slides presented by the WP leaders and partners are available for project beneficiaries at the intranet of the project. The location is *Files/WP4/2nd AWS/Presentations/Individual sessions*.

Plenary sessions (17-18.05.2017)

Three plenary sessions took place between the 17th and 18th of May (one session per each technical WP (WP1-WP3)). This year, not all partners gave a presentation but only 5-7 by each WP giving an overview of their work and results achieved during the first 2 years of the project. In some cases, join presentations between 2-3 partners were given, also showing the positive level of interaction within the project.

Details on the presentations given in each plenary session is included in the detailed agenda (see **Appendix 1**)

The slides presented in WP1-3 plenary sessions are available at the project intranet (location: *Files/WP4/2nd AWS/Presentations/Plenary sessions*).

Finland Profile and Safety Case (16-17.05.2017)

During the workshop, the following talks were given on Finland Profile and Finnish Safety Case.

- *Overview of Posiva's programme for final disposal of spent nuclear fuel*, Marja Vuorio (Posiva),
- *Use of scientific/technical knowledge and applicability to the safety case*, Barbara Pastina (Posiva),
- *Siting process for HLW disposal in Finland*, Timo Ruskeeniemi (GTK).

The profiles of the invited speakers (B. Pastina, T. Ruskeeniemi and M. Vuorio) is attached as **Appendix 3**.

Scientific-technical poster session (17.05.2017)

Wednesday evening the scientific-technical poster session took place. Additional results not presented during the plenary session have been showed in the form of posters The investigation conducted by 15 partners was presented. Two out of 14 posters were presented jointly between 2-3 organizations. The 14 posters will be included in the Workshop Proceedings.

Stakeholder panel (17.05.2017)

The 1st Stakeholder Panel composed by five high level Finnish panellists from the Government, Electricity Generators, Safety Authority, Eurajoki municipality, Waste Managers and Social Experts have been organized. The panel was chaired by Erika Holt (VTT).

- *Sami HAUTAKANGAS, Head of Spent Fuel and Disposal, Fortum Oy,*
- *Liisa HEIKINHEIMO, Deputy Director General, Energy Department Finnish government – Ministry of Economic Affairs and Employment,*
- *Vesa JALONEN, President, Municipal Council, Eurajoki.*
- *Matti KOJO, Post-Doctoral Researcher, Faculty of Management, University of Tampere.*
- *Jaakko LEINO, Head of Nuclear Waste Safety Assessment, Finland's Radiation and Nuclear Safety Authority (STUK).*

Firstly, each panellist gave a brief introduction on their background and experience related to the stakeholder engagement. Besides, a document with the panellists' profiles was distributed to the attendees (see **Appendix 3**).

After their introductions, E. Holt proceeded with questions to the panellists. Questions were focused on different topics: 1) Communication with Stakeholders, 2) Dissemination and Interaction, 3) Use of Technical Information, 4) Assisting Less Advanced Programs, 5) CEBAMA project specific (cementitious & clay materials, radionuclides, modelling ...) and 6) Other.

The organization of the question was based on:

- Previous questions already prepared before the panel by E.Holt and agreed between the ExCom members of Cebama (see **Appendix 4**),
- Questions submitted by Workshop attendees during the Workshop. A document was distributed the first day in order to compile questions for the panelists (see **Appendix 5**),
- Open questions from the audience (questions raised during the panel discussions).

Associated Groups introduction (17.05.2017)

Moscow State University (Russia) and Los Alamos National Laboratories (USA) recently joined the project as Associated Groups. None of them could attend the Workshop, however, M. Altmaier introduced both organizations presenting the transparencies they prepared to introduce their interest. The presentation is available at the intranet of the project: *Files/WP4/2nd AWS/Presentations/Other presentations*

PhD session (18.05.2017)

The 1st PhD session was organized the last day of the Workshop aimed at promoting training of the students and a forum for networking. The project Coordination Team encouraged all students active in CEBAMA to consider applying for mobility measures during their PhD in order to work at other partner organizations.

The audience was restricted to students, supervisors, ExCom and EUG. The first three groups were represented but any EUG attended the session.

The session was chaired by two of the students (S. Lange (Juelich) and R. Vasconcelos (U. Sheffield)). 9 students gave a presentation on their investigations within CEBAMA and discussed on their results. The agenda of the session where titles and authors of each presentation are included is included in **Appendix 6**. All presentations are available for project members at the intranet site (*Files/WP4/2nd AWS/Presentations/PhD session*).

The main outcome from the students was the following:

- A separate PhD session was considered a good opportunity for training.
- CEBAMA offers good networking opportunities. Additional ideas on mobility measures were developed.
- It was remarked from the side of the students, that members of the EUG should consider attending the PhD session, as their opinion on the work developed is important for them.

Optional visits to the GTK, VTT underground Lab, Olkiluoto site (19.05.2017)

Three optional visits were organized during the 2nd Annual Workshop:

- Visit to GTK museum,
- VTT underground Lab,
- Olkiluoto site.

Most of the workshop attendees visited both the GTK museum and the VTT underground Lab Tour. Both visits were considered valuable additions to the Workshop.

Friday took place the visit to the Olkiluoto Visitor Centre and the Low & Intermediate level repository. Anne Niemi, visit manager of TVO, guided the group during the tour, starting with a presentation on TVO Company. Two more presentations were given before visiting the Low & Intermediate level repository:

- Posiva overview of cementitious material R&D (Marja Vuorio, Posiva),
- TVO overview of cementitious material safety (Timo Kukkola, TVO).

Friday afternoon was devoted to visit the underground repository for low-intermediate level waste (LILV-repository), the ONKALO Research Galery and the scientific exhibition “Electricity from Uranium” (Olkiluoto Visitor Center). Good feedback was received by the visitors.

EUG statements (18.05.2017)

After the WP2 plenary session, Seif Ben Hadj Hassine (EUG chairman) on behalf of the EUG gave feedback to the Consortium about the progress of the project. The statement is included in Appendix 8 and within the EUG minutes. The transparencies provided by the

EUG are also available at the project intranet (*Files/WP4/2nd AWS/Presentations/Other presentations*).

General Assembly (18.05.2017)

The General Assembly, chaired by Norbert Maes (SCK·CEN), closed the 2nd Annual Workshop. Specific minutes of this session, detailing the decisions taken by GA at this meeting, are available at the project intranet (*Files/General Assembly/Meetings*).

APPENDICES:

Appendix 1: Meeting agenda

Appendix 2: Presentation by Coordination Team

Appendix 3: Finland Gest Profiles

Appendix 4: Starting questions for Stakeholder panelists

Appendix 5: Question submission template for stakeholder panel

Appendix 6: Agenda of the PhD student session

Appendix 6: End-Users Group Feed-Back on the 2nd CEBAMA Workshop

Appendix 1: Meeting agenda

Tuesday, May 16th, 2017

Place : VTT campus

Betonimiehenkuja 4, 02151 Espoo (Finland)

- 9:30-11:00 **1st ExCom meeting**
(restricted to ExCom members. Room 1-120 “Granitti”)
- 13:00-14:00 **Welcome + Presentation by the Coordination Team - auditorium**
- 14:00-16:00 **Individual WP session**
(WP1 in “Sederholm-Sali” auditorium, WP2 in room 1-108, WP3 in room 1-120 “Granitti”)
- 16:00-16:30 Coffee break – Auditorium lobby area
and
1st EUG meeting
(restricted to ExCom and EUG members. Room 1-120 “Granitti”)*
- 16:30-17:00 **Finish Safety Case - auditorium**
B. Pastina (Posiva)
- 17:00-18:00 **Geological Survey of Finland**
2 groups:
 - Talk from Geological Survey - T. Ruskeenieni
 - Guided visit to the geological museum area
- 19:00 Workshop dinner**
Boat departs from Otaniemi “saaristovenelaituri” (=Arrival to Suomenlinna sea fortress island 20.00 and to Brewery Restaurant. Transport back to Helsinki/hotel by own means (public ferry/bus).

Wednesday, May 17th, 2017

Place : VTT campus

Betonimiehenkuja 4, 02151 Espoo (Finland)

- 08:30-8:45 **Associated Groups** Presentation - *auditorium*
M. Altmaier (KIT-INE)
- 8:45-9:05 **General Posiva Status** - *auditorium*
M. Vuorio (Posiva)
- 9:15-9:30h* *Coffee break*
- 9:30-11:30 **WP1 Plenary Session** - *auditorium*
WP leader: *E. Holt (VTT), F. Claret (BRGM) and U. Maeder (UniBern)*

- **Status of WP1**

F. Claret (BRGM), U. Maeder (UniBern)

Technical presentations

- Evolution of porosity in cementitious materials during early stage of alkali-activation: a spin echo small angle neutron scattering and SEM/EDS investigation
A. Sabau, D. Bykov, W. Bouwman, C. Duif, J.-L. Kloosterman (TU-Delft)
- Comparison of experimental and modelled pore solutions of low-pH Ordinary Portland Cement based mix designs
T. Vehmas, M. Leivo, E. Holt (VTT)
- Preliminary experimental results on the changes in microstructure, mineralogy and transport properties of Boom clay - concrete interface
F. Claret, S. Gaboreau, N. Maes, Q. Tri Phung (SCK-CEN, BRGM)
- Effects of the hydrogeochemistry of the FEBEX in situ test on the aging of the concrete plug
(UAM, CSIC, CIEMAT)
- Experimental investigation of hydro-mechanical behavior of claystone-concrete interface
Z. Liu, J. Shao (LML)
- Interaction between cement and Czech bentonite under temperature load and in in-situ conditions: Results after first testing period
Vašíček, Večerník, Hloušek, Červinka, Hausmannová, Havlová (CTU/UJV)

- **WP1 benchmark comparison** of analysis to-date

M. Leivo (VTT)

11:30-12:30 **LUNCH** (*and time to hang posters for evening session*)

12:30-14:30 **WP3 Plenary Session - - auditorium**

WP leader: *A. Idiart (Amphos21)*

- **Status of WP3 and Modelling task**

A. Idiart (Amphos21)

Technical presentations

- Long-term non-isothermal reactive transport model of the interactions of concrete with the compacted bentonite and the clay host rock in a HLW repository in clay: Discretization errors and feed-back effect of the changes in porosity caused by dissolution/precipitation reactions

Samper, J., Mon, A., Fernández, J., Montenegro, L., Naves, A. (UDC)

- Modelling of interactions between hydrated OPC and Czech bentonite under in-situ conditions and by heating

T. Rosendorf, D. Vopálka, R. Červinka (CTU)

- Compositional parameters for solid solution CSH and the applicability to thermodynamic modelling

T. Vehmas, A. Itälä (VTT)

- Rapid development of a reactive transport code with FENICS and Reaktoro

L. Hax Damiani (PSI)

- Final results of modelling chemo-mechanical couplings of calcium leaching experiments

A. Idiart, E. Coene, M. Laviña (Amphos21)

- H-M-C coupling analysis considering several scenarios of long-term alteration in cement-bentonite system: Part 2: Permeability

S. Ito, S. Tachibana, A. Iizuka (Kobe Univ.) H. Owada, D. Hayashi (RWMC)

- Reactive transport model in the low pH cement / bentonite interface and effects on radionuclide migration

V. Montoya, N. Ait Mouheb, T. Schäfer, V. Metz (KIT-INE)

- 14:30-17:00h **Socio-political Stakeholder panel** discussion - *auditorium*
Chairperson: E. Holt (VTT)
Panellists: L. Heikinheimo (The Ministry of Economic Affairs and Employment – Energy department), S. Hautakangas (Fortum Oy), Jaakko Leino (STUK), V. Jalonon (Eurajoki Municipality), T. Seppälä (Saanio & Riekkola Oy), M. Kojo (University of Tampere)
- 14.30 Coffee break)*
- 15.00 Welcome and Panel structure presentation
- 15.10 Panellist introduction (background/experience related to stakeholder engagement)
- 15.30 Q&A session
- 17.00 Closing statements and summary
- 17:00** **Poster Session** (Finger food and drinks) – *open to panel guests*
- 18:00-19:00 2nd **ExCom** meeting + **EUG** meeting - *Room I-120 “Granitti”*

Thursday, May 18th, 2017

Place : VTT campus

Betonimiehenkuja 4, 02151 Espoo (Finland)

09:00-10:30 **WP2 Plenary Session - auditorium**
WP leader: B. Grambow (Subatech/Armines)

- **Status of WP2**

B. Grambow (Subatech/Armines)

Technical presentations

- Study of radium uptake by cementitious materials relevant for LILW disposal in the Czech Republic
B. Drtinová, J. Kittnerová, D. Vopálka (CTU)
- Preliminary results from the study of radionuclide retention in cementitious systems and single mineral phases
M. Isaacs, M. Felipe-Sotelo, E. Rastrick, D. Read (Surreys)
- Effect of redox conditions on sulfur and selenium binding in AFm phases
L. Nedyalkova, B. Lothenbach, J. Tits, E. Wieland, U. Mäder (PSI/Empa)
- C-14 sorption on CEM I : effect of HCP degradation on C-14 uptake
C. Bucur, I. Florea, R. Dobrin, A. Dinu (RATEN) – talk given by B. Grambow (Subatech/Armines)
- Structural investigations on the uptake of long-lived safety relevant radionuclides by cementitious materials
S. Lange, M. Isaacs, M. Klinkenberg, D. Read, D. Bosbach, G. Deissmann (JUELICH)
- Radionuclide through-diffusion experiments in unsaturated carbonated and non-carbonated hardened cement paste using the osmotic technique
S. Rasamimanana, K. Perrigaud, B. Grambow, C. Landesman (Subatech/Armines)
- Update on beryllium activities at KIT-INE within WP2: solubility, hydrolysis and uptake by cement
X. Gaona, N. Cevirim, M. Böttle, E. Yalcintas, N. Ait Mouheb, V. Montoya, T. Rabung, M. Altmaier (KIT-INE)
- The use of a flow-through reactor to study AFm anion exchange
N. Marty, S. Grangeon, F. Claret (BRGM)

- Building blocks on molybdenum retention processes in cement systems. First experimental results from solubility and sorption onto pure cement phases

M. López-García, J. Olmeda, M. Grivé (Amphos21)

10:30-11:00 Coffee break

11:00-11:30 EUG feedback - auditorium

11:30-12:00 General Assembly - auditorium

12:00-13:00 LUNCH

Optional sessions

13:30-14:30 VTT Underground Research Lab Tour* (Group 1 = *those not attending the PhD session*).

13:30-16:30 PhD and young researchers session + VTT Underground Research Lab Tour (Group 2) - *auditorium*

13:30-15:30 PhD and young researchers session
(*restricted to PhD students, advisors, young researchers and EUG*)

15:30-16:30 VTT Underground Research Lab Tour*. (Group 2).

** Note: VTT lab tour address is Kemistintie 3, Espoo (5 minute walk on campus). Passport needed for photo identification.*

Friday, May 19th, 2017

Posiva site Excursion (*Optional – required pre-registration for security purposes*): **Olkiluoto Visitor Centre, Low & Intermediate level repository**

Location: Olkiluoto Visitor Centre, Eurajoki Finland

Hosts: Ms Anne Niemi, Manager, Visits, TVO
Ms Marja Vuorio, Expert, Disposal site, Posiva Oy
Mr Timo Kukkola, Chief engineer, Civil Engineering, TVO
assistance: Erika Holt, VTT

Agenda:

7.00 Bus departs from hotel #1 (Espoo – Otaniemi Radisson SAS)

7.10 Bus departs from hotel #2 (Espoo – Sokos Tapiola Garden)

10:30 Arrival to Olkiluoto

- Registration of visitors
- Coffee/tea/refreshments

11:00 Site Program:

- Company presentation (Anne Niemi)
- Posiva overview of cementitious material R&D (Marja Vuorio)
- TVO overview of cementitious material safety (Timo Kukkola)

12:00 LUNCH

12:45 Site tour

- Underground repository for low-intermediate level waste (LILV-repository)
- ONKALO Research Gallery

14:00 Electricity from Uranium -scientific exhibition






14:45 Depart from Olkiluoto

18.00 Arrive back to Espoo/hotels

Notes:

- Please bring your passport with you as a form of identification.
- Wear comfortable clothes and shoes for walking.
- There are some restrictions about use of cameras on-site.






Appendix 2: Presentation by Coordination Team



Presentation by the Coordination Team

The transparencies will be distributed with the minutes

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017



Cebama - key data

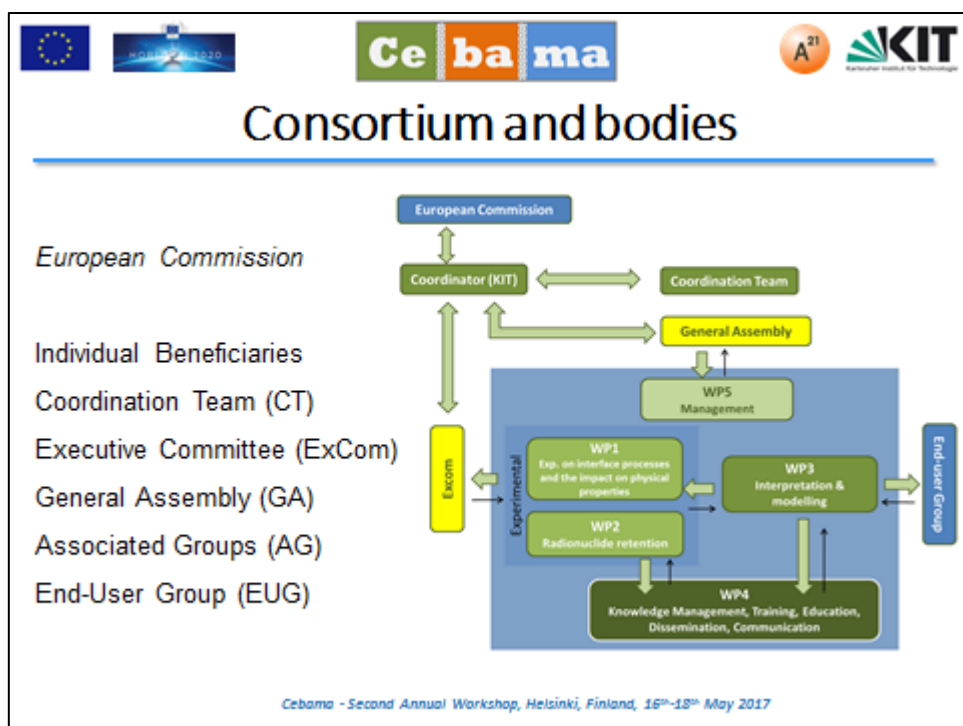
- Grant agreement No: 662147 => basis for the Cebama project!
- Action full title: Cement-based materials, properties, evolution, barrier functions
- Estimated eligible costs: 5,952,944.50 EUR
- Maximum grant amount: 3,868,607.25 EUR
- PF Amount: 1,676,397.00 EUR
- GF Amount: 193,430.36 EUR
- Reporting periods:



We are at PM 24


No	Month From	Month To
1	1	18
2	19	36
3	37	48



from Grant Agreement Data Sheet

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017











































Individual Beneficiaries

1	KIT	KARLSRUHE INSTITUTE OF TECHNOLOGY		DE
2	AMPHOS 21	AMPHOS 21 CONSULTING SL		ES
3	BRGM	BUREAU DE RECHERCHES GEOLOGIQUES ET MINIERES		FR
4	NERC-BGS	NATURAL ENVIRONMENT RESEARCH COUNCIL		UK
5	CIEMAT	CENTRO DE INVESTIGACIONES ENERGETICAS, MEDIOAMBIENTALES Y TECNOLOGICAS		ES
6	TU Delft	TECHNISCHE UNIVERSITEIT DELFT		NL
7	JUELICH	FORSCHUNGSZENTRUM JUELICH		DE
8	RATEN ION	REGIA AUTONOMA TEHNOLOGII PENTRU ENERGIA NUCLEARA		RO
9	NRG	NUCLEAR RESEARCH AND CONSULTANCY GROUP		NL
10	RWMC	RADIOACTIVE WASTE MANAGEMENT FUNDING AND RESEARCH CENTER		JP

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017

				
<h2>Individual Beneficiaries</h2>				
11	SCK CEN	STUDIECENTRUM VOOR KERNENERGIE- CENTRE D'ETUDE DE L'ENERGIE		BE
12	ARMINES	ASSOCIATION POUR LA RECHERCHE ET LE DEVELOPPEMENT DES METHODES ET PROCESSUS INDUSTRIELS		FR
13	UJV	UJV REZ A.S.		CZ
14	UDC	UNIVERSIDAD DE LA CORUÑA		ES
15	ULOUGH	UNIVERSITY OF Loughborough		UK
16	CTU	CESKE VYSOKE UCENI TECHNICKE V PRAZE		CZ
17	USFD	THE UNIVERSITY OF SHEFFIELD		UK
18	VTT	TEKNOLOGIAN TUTKIMUSKESKUS		FI
19	HZDR	HELMHOLTZ-ZENTRUM DRESDEN-ROSSENDORF EV		DE

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017

				
<h2>Individual Beneficiaries</h2>				
20	LML	UNIVERSITE DES SCIENCES ET TECHNOLOGIES DE LILLE – LILLE 1		FR
21	UAM	UNIVERSIDAD AUTONOMA DE MADRID		ES
22	CSIC	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS		ES
23	ANDRA	AGENCE NATIONALE POUR LA GESTION DES DECHETS RADIOACTIFS		FR
24	PSI	PAUL SCHERRER INSTITUT		CH
25	UNIBERN	UNIVERSITAET BERN		CH
26	IRSN	INSTITUT DE RADIOPROTECTION ET DE SÛRETÉ NUCLÉAIRE		FR
27	EMPA	SWISS FEDERAL LABORATORIES FOR MATERIALS TESTING AND RESEARCH		CH
28	SURREY	UNIVERSITY OF SURREY		UK

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017



Change in Beneficiary ULOUGH to SURREY

The beneficiary No. 15, LOUGHBOROUGH UNIVERSITY, has terminated participation as of 19th of December of 2016 and a new beneficiary, No. 28, UNIVERSITY OF SURREY, short name SURREY, joined the consortium as of 01.05.2016, taking over the R&D tasks initially started by LOUGHBOROUGH UNIVERSITY.

- The related Amendment (Reference No AMD-662147-14) is completed.
- Annex 1 was changed and replaced by a new Annex 1.
- Annex 2 was changed and replaced by a new Annex 2.

Included in PM 18 Cebama reporting, incl. Periodic Technical Report, Part B.

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017



Project Coordination Team (CT)

- The coordinator is KIT.
- The coordination team is shared by two organizations, the Coordinator (KIT), and the Coordination Secretariat (AMPHOS21):

Project Coordinator – **Marcus Altmaier** (KIT)

Scientific-Technical Coordination Support – **Lara Duro** (AMPHOS21)

Knowledge Management and Dissemination Officer – **Alba Valls** (AMPHOS21)

Administrative Officer – **Vanessa Montoya** (KIT)

Financial Officer – **Bernhard Dasselaar** (KIT)

Legal Officer – **Julia-Aline Groh** (KIT)

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017



Executive Committee (ExCom)

The project ExCom consists of the WP leaders and the Coordination Team:

WP 1 Experiments on interface processes and the impact on physical properties

Erika Holt (VTT) "spokeswoman", **Francis Claret** (BRGM), **Urs Mäder** (UNIBERN)

WP 2 Radionuclide retention

Bernd Grambow (ARMINES)

WP 3 Interpretation & Modelling

Andrés Idiart (AMPHOS21)

WP 4 Documentation, Knowledge Management, Dissemination and Training

Alba Valls (AMPHOS21)

WP 5 Management

Marcus Altmaier (KIT), **Vanessa Montoya** (KIT)

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017



General Assembly (GA)

The General Assembly consists of one member from each partner organization to the project, including also the Non-EU organizations.

Norbert Maes (SCK-CEN) is Chairperson of the General Assembly.

- GA meetings are organized annually in conjunction with the annual workshops.
- Attendance in the GA meetings is restricted to the project beneficiaries.
(but open to extend to EUG who sit in and listen without having a vote).
- It has the ultimate responsibility regarding approval of management structure, project direction and Consortium Agreement.
- The role of the GA is to ensure that interests of the Beneficiaries are reflected, to guide project implementation and to formally accept decisions of significant importance for the project as a whole. Project management issues are discussed and adopted in GA meetings.

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017



Associated Group

- **Approach to AGs joining Cebama is defined in the Consortium Agreement Attachment, (=> Agreement on AG Participation).**
- AGs are participating in Cebama at their own costs with specific contributions.
- AGs are contributing to Cebama, within a structured dialogue to define areas and subjects of mutual interest.
- AGs are invited to the Annual Project Workshops.
- AGs will receive access to the public deliverables and scientific technical information obtained in the project.
- **As of May 2017, AGs to Cebama are:**
 - **Moscow State University (MSU), Russia,**
 - **Los Alamos NL Carlsbad Office (LANL-CO), USA.***To be shortly introduced at Wednesdays morning session*

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017



End-User Group (EUG)

The EUG is composed of nine persons representing Nuclear Waste Management organizations interests/expertise:

ANDRA, represented by Pierre Henocq

COVRA, represented by Erika Neeft

ENRESA, represented by Miguel Angel Cuñado

NAGRA, represented by Veerle Cloet

ONDRAF/NIRAS, represented by Seif Ben Hadj Hassine (EUG chairperson)

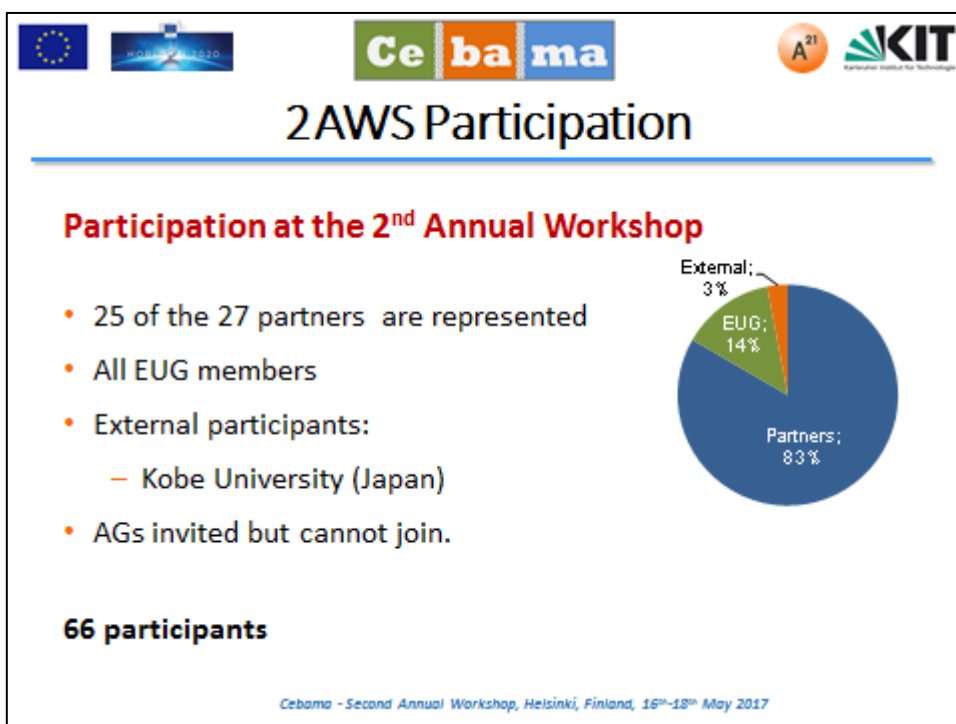
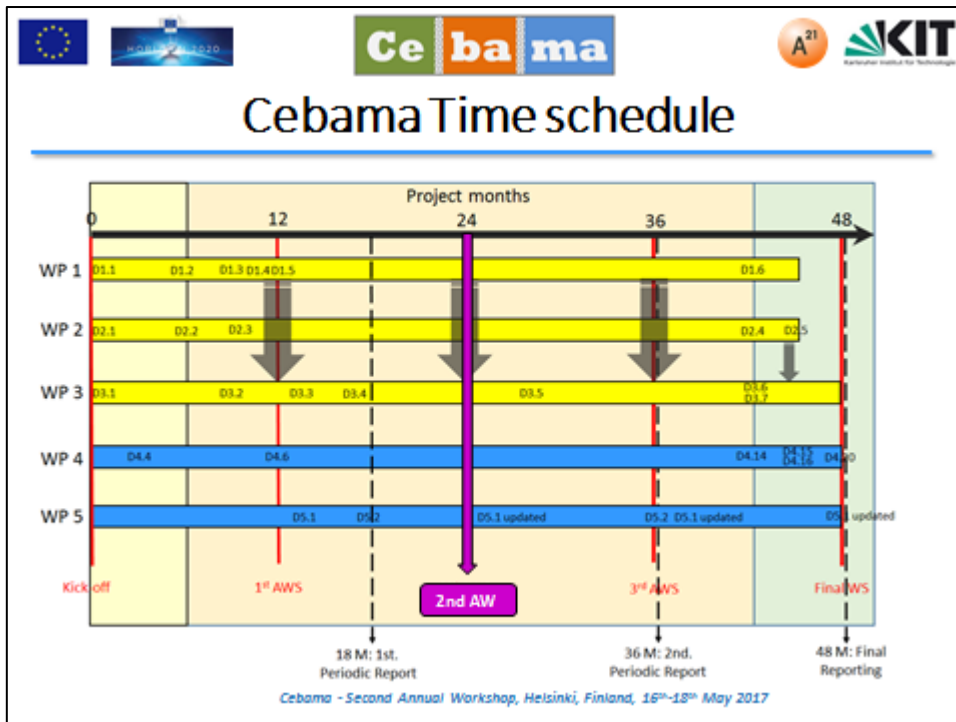
POSIVA, represented by Marja Vuorio

RWM, represented by Amy Shelton

SKB, represented by Per Martensson

SURAO, represented by Antonin Vokal

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Project Workshops

Calendar of project meetings

2nd July 2015: Kick-off meeting, Brussels, Belgium

2016: 1st AWS organized by Amphos21, Barcelona, Spain

2017: 2nd AWS organized by VTT, Finland (16-18 May 2017)

2018: 3rd AWS organized by Subatech, Nantes ?, France (week from 16th April)

2019: 4th AWS organized by KIT-INE, Karlsruhe, Germany

- Organize 4 AWS in Karlsruhe in connection to Workshop "Mechanisms and Modelling of Waste/Cement Interactions". Organise joint Special Issue in Applied Geochemistry)

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Annual Project Workshops

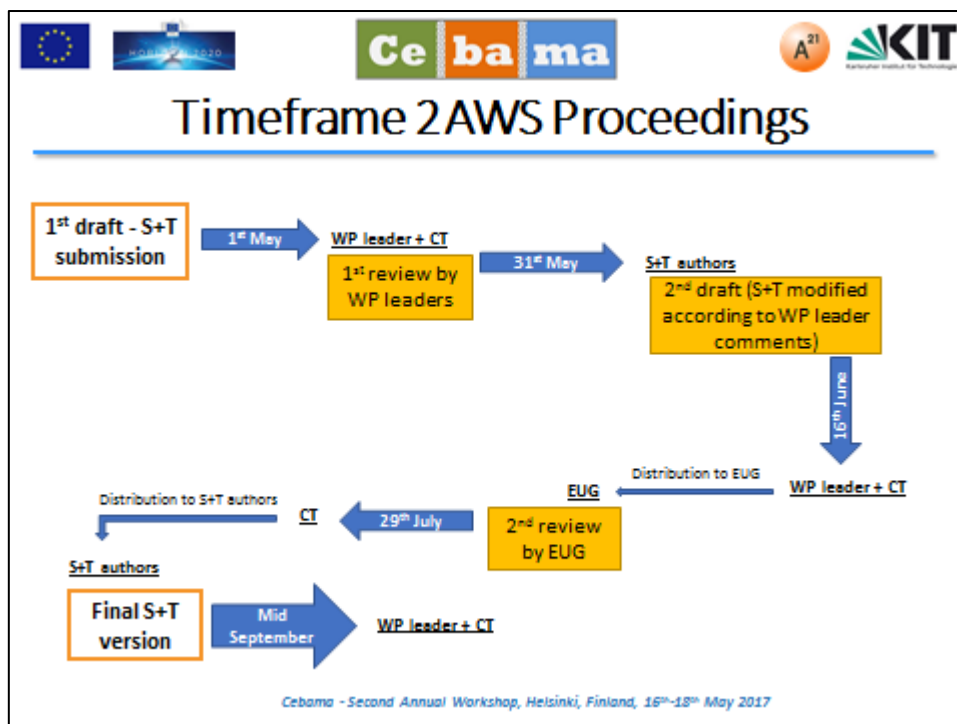
Examples:



<http://www.ksp.kit.edu>

- The workshop proceedings to be published at KIT-Scientific publishing will be openly accessible and can be downloaded free of charge at the project WEB page.
- Printing of 1 AWS Proceedings considerably delayed (related Deliverable D4.8 available for download at PP and the Cebama intranet).
- Focus is on improving and speeding up process for preparing 2 AWS Proceedings.

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The slide titled 'Publications...' discusses open access to scientific publications. It states that each beneficiary must ensure open access (free of charge online access for any user) to all peer-reviewed scientific publications relating to its results. It also mentions that Cebama CT and all individual beneficiaries have no specific budget to support paying publishers to allow free access, and that Cebama will use financial resources which have not been used in the project at the end of the project and distribute this to partners in order to reimburse those who have spent money to provide open access.

Publications...

GA, p49

29.2 Open access to scientific publications

Each beneficiary must ensure open access (free of charge online access for any user) to all peer-reviewed scientific publications relating to its results.

- Cebama CT and all individual beneficiaries have no specific budget to support paying publishers to allow free access.
- Cebama will use financial resources which have not been used in the project at the end of the project and distribute this to partners in order to reimburse those who have spent money to provide open access.

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Publications...

8.3.1 Dissemination of own Results

Cebama CA

8.3.1.1 During the Project and for a period of 1 year after the end of the Project, the dissemination of own Results by one or several Parties including but not restricted to publications and presentations, shall be governed by the procedure of Article 29.1 of the Grant Agreement subject to the following provisions.

Prior notice of any planned publication shall be given to the other Parties at least 45 calendar days before the publication. Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the Coordinator and to the Party or Parties proposing the dissemination within 30 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted.

- Manuscripts for publication are sent to CT who distribute them to ExCom.
- CT and ExCom assess if manuscript is prepared according to the principles set out in GA and CA.

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Acknowledge Cebama

Acknowledge the EC in your presentations/publications:






"The research leading to these results has received funding from the European Union's European Atomic Energy Community's (Euratom) Horizon 2020 Programme (NFRP-2014/2015) under grant agreement, 662147 - Cebama"

29.5 Disclaimer excluding Commission responsibility

Any dissemination of results must indicate that it reflects only the author's view and that the Commission is not responsible for any use that may be made of the information it contains.

- Point of reference is Cebama GA

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Ethics

EC has defined two deliverables on Ethics (two ethics-deliverables defined as WP6).






WP6	D6.1	D45	NEC - Requirement No. 1	Non-European Countries
WP6	D6.2	D46	EPQ - Requirement No. 2	Environmental Protection Questions

Copied from Grant Agreement, (pdf page 244)

Ethics Issue Category: NON-EU COUNTRIES - *There is a requirement to confirm that the Japanese partner will apply rigorously the ethical standards and guidelines of Horizon2020.*

=> The Japanese partner (Beneficiary No. 10, RWMC) will be reminded to rigorously apply the ethical standards and guidelines of Horizon 2020. Note that Cebama does not include any work on animal and/or human tissue samples, genetic material, live animals, human remains, materials of historical value, endangered fauna or flora samples, etc..

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Ethics

Copied from Grant Agreement, (pdf page 244)

Ethics Issue Category: ENVIRONMENT PROTECTION QUESTION - *The coordinator is required to confirm the environmental protection and safety aspects related to WP2 (experiments with radioactive species) before experiments are performed in any facility for this project. It is also advised that a member of the Coordinator is identified with responsibility for health and safety documentation and that overview is provided by the General Assembly.*

=> The Coordinator confirms that all laboratories contributing in WP2 on work with radionuclides must strictly adhere to the respective legal, environmental protection and safety regulations valid for the respective labs. The licenses of the laboratories for working with radioactive substances are subject to the individual national legislations and rules. The same applies for the responsibility regarding health and safety documentation when working in these labs. At the kick-off meeting, a member of the Coordinator will be identified to monitor health and safety aspects in Cebama related to WP2 activities. In addition, an overview will be provided at the General Assembly.

M. Altmaier (KIT) monitors health and safety aspects in Cebama.
=> outcome of monitoring to be confirmed by GA.

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Risk Assessment

Copied from Grant agreement (pdf page 159):

The General Assembly will conduct a risk assessment at the kick-off meeting and the Annual Workshops, to identify critical risks, as well as their avoidance and mitigation plans on the basis of the information provided in the Description of Action. The risks will be judged to evaluate severity and impacts to the project's objectives and implementation. The risk assessment will include both technical challenges as well as concerns for the project operation. The risk assessments will be included in the periodic reporting to the EC.

➤ Decision will be done at General Assembly.



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Input for discussion at General Assembly

Risk No	Description of risk	WPs inv.	Is a risk identified? Which? Proposed mitigation?
1	<u>Material availability from in-situ experiments or laboratory preparation is delayed in sampling /delivery.</u> The consequences would be that experiments cannot proceed and/or modelling is delayed.	1,3	NO
2	<u>Failure in sample preparation</u> identified, e.g. after hardening of the cement based materials. (pozzolanic reaction takes up to "1 year.)	1	NO
3	<u>Problems with failing experimental equipment</u> in experiments required to exclude oxygen and carbonate.	1,2	NO
4	<u>Delay in results from WP1 and/or WP2.</u> Consequence: no possibility of considering project results in modelling task.	3	YES / NO ???
5	a) <u>Results are not relevant to the End User</u> b) <u>Results are not impacting current knowledge.</u>	1,2,3	YES / NO ??? Pending EUG feedback. NO
6	<u>Partners working independently</u> and not cooperating.	1,2,3	NO
7	<u>No adequate PhD students</u> found. Consequence: lack of adequate implementation of the research plan.	1,2,3	NO

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Dissemination Activities


Cebama dissemination activities successfully managed by Amphos21 and include:

- Organization of 4 **Annual Workshops**
- Implementation and up-dating of the **project webpage**
- Dissemination of project knowledge: **generic poster, project presentation and publication of scientific results**
- Opening a **LinkedIn account** restricted to project members
- Preparation of semi-annual **newsletters** informing on the project progress

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Dissemination Activities


- Cebama Intranet with Excel file called **"Interactive distribution list_date"**
- **The file needs to be regularly updated at the intranet.**
- **A. Valls point of contact.**



1. Participants list
 - Classified by role (CT, ExCom member, EUG, WP participation, financial, legal, etc...)
 - Classified by institution
2. Interactive mailing list



Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017



Mobility Measures



Budget of 10 k€ (5*2000 €) allocated at CT to support mobility measure in Cebama.


One applications for MM received so far. Please consider using this tool!



In order to **apply** for a training mobility, partners need to fill out the provided **template** ([INTRANET: Files/WP4/Training](#)), detailing scope and motivation for the requested measure.

1. Proposal is submitted to the CT until **end of September 2017**.
2. The CT forwards the applications to ExCom who will serve as reviewer to the applications.
3. **ExCom will decide on Mobility Measures acceptance. (Mandate from GA required!)**
4. Final decision on MM acceptance by **end of October 2017**.

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Mobility Measures

Application for a stay (2 to 3 month) of Jana Kittnerova (Ph.D. student of CTU in Prague) at the Institute of Energy and Climate Research (IEK-6): Nuclear Waste Management of Forschungszentrum Jülich (Germany).

- *Sorption study of Sr to hardened cement paste (HCP). Set of sorption experiments of Ra-223 to HCP and concrete samples.*
- *Experimental investigation of carbonation on the uptake of (RN) such as Ra-226 and Se-79 by HCP (CEM I, CEM V) and model phases representative of hydrated cements (e.g. CSH) and the development of HCP microstructure.*
- *Microstructural characterization of carbonated HCP by SEM; determination of phase assemblage of carbonated HCP by PXRD, batch sorption experiments with carbonated HCP and carbonated CSH in glove box under inert gas; EDS elemental mapping of RN distribution on HCP surface; measurement of RN distribution in HCP by ToF-SIMS*

Travel expenses (flight & train); approx. 350 €, accommodation; approx. 500 € per month per diem subsistence allowance. *(rules for German public service duty travel).*

ExCom recommendation: Accept application from J. Kittnerova (max. 2000€)

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Project Deliverables

WP1: Experiments on interface processes and the impact on physical properties

No	Deliverable name	Lead Part	Type	DL	DD
D1.1	Detailed WP1 description of scientific work: compilation of partner descriptions with update of Appendix_B	BRGM/VTT/ UNIBERN	R	PU	01
D1.2	Agreement and documentation of systems to be studied	BRGM/VTT/ UNIBERN	R	PU	06
D1.3	State-of-art report related to WP1 topics (initial)	BRGM/VTT/ UNIBERN	R	PU	09
D1.4	Report on WP1 established experimental boundary conditions, experimental methods	BRGM/VTT/ UNIBERN	R	PU	10
D1.5	Report on WP1 selected experimental materials to be used, including both new laboratory and aged in-situ samples	BRGM/VTT/ UNIBERN	R	PU	12
D1.6	State-of-art report related to WP1 topics (updated)	BRGM/VTT/ UNIBERN	R	PU	42
D1.7	Manuscript for peer-reviewed publication on results generated in WP1	BRGM/VTT/ UNIBERN	R	PU	48



Project Deliverables

WP2: Radionuclide retention in high pH concrete

No	Deliverable name	Lead Part	Type	DL	DD
D2.1	Detailed WP2 description of scientific work: compilation of partner descriptions with update of Appendix_B	ARMINES	R	PU	01
D2.2	Agreement and documentation of systems to be studied	ARMINES	R	PU	06
D2.3	State-of-art report related to WP2 topics (initial)	ARMINES	R	PU	09
D2.4	State-of-art report related to WP2 topics (updated)	ARMINES	R	PU	42
D2.5	Report on new data (sorption, speciation, solubility) for radionuclide retention generated in WP2 (with updating)	ARMINES	R	PU	45
D2.6	Manuscript for peer-reviewed publication on results generated within WP2	ARMINES	R	PU	48






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Project Deliverables

WP3: Interpretation and modelling

No	Deliverable name	Lead Part	Type	DL	DD
D3.1	Detailed WP3 description of scientific work: compilation of partner descriptions with update of Appendix_B	AMPHOS21	R	PU	01
D3.2	Review and definition of modelling approach to be followed in the project: scale of analysis, physico-chemical processes, software, HPC resources.	AMPHOS21	R	PU	09
D3.3	Consolidated plan for Upscaling Modelling Task	AMPHOS21	R	PU	14
D3.4	Description of and results from the modelling of external lab and/or field experiments and industrial analogues	AMPHOS21	R	PU	18
D3.5	Preliminary results and interpretation of the modelling by incorporating results from WP1&WP2 experiments.	AMPHOS21	R	PU	30
D3.6	Final results and interpretation of the modelling by incorporating results from WP1&WP2 experiments	AMPHOS21	R	PU	45

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Project Deliverables

WP3 (continued)

No	Deliverable name	Lead Part	Type	DL	DD
D3.7	Report on the Upscaling Modelling Task	AMPHOS21	R	PU	45
D3.8	Manuscript for peer-reviewed publication on results generated within WP3	AMPHOS21	R	48	48

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Project Deliverables

WP4: Knowledge management, training and dissemination

No	Deliverable name	Lead Part	Type	DL	DD
D4.1	Preparation of a generic poster presenting the project	AMPHOS21	R	PU	0
D4.2	Set up project webpage and blog	AMPHOS21	R	PU	0
D4.3	Minutes from kick-off meeting	AMPHOS21	R	CO	02
D4.4	Planning on interaction with socio-political stakeholders	AMPHOS21	R	PU	03
D4.5	Communication Action Plan	AMPHOS21	R	PU	03
D4.6	Planned dissemination of final results	AMPHOS21	R	PU	12
D4.7 D4.10 D4.12 D4.18	Minutes of 1 st , 2 nd , 3 rd and 4 th annual workshop, respectively	AMPHOS21	R	CO	13 25 37 48



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Project Deliverables



WP4 (continued)

No	Deliverable name	Lead Part	Type	DL	DD
D4.8 D4.11 D4.13 D4.19	Draft of the 1 st , 2 nd , 3 rd , 4 th Annual project Workshop Proceedings, respectively	AMPHOS21	R	PU	15 27 39 48
D4.14	Report on interaction with non-scientific stakeholder	AMPHOS21	R	PU	42
D4.15	Final project reporting, dissemination, communication, training & education, ethical/socio-political/broader stakeholder involvement	AMPHOS21	R	PU	45
D4.16	Press release	AMPHOS21	R	PU	45
D4.17	List of mobility measures and summary of the works undertaken	AMPHOS21	R	PU	45
D4.9 D4.20	Report on the relevance of the outcome of Cebama for the Safety Case (Manuscript for peer-reviewed publication)	AMPHOS21	R	PU	48

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Project Deliverables


WP5: Project management



No	Deliverable name	Lead Part	Type	DL	DD
D5.1.x	Report/Documentation of exchange of data between experimental and modeling WPs (with updating)	KIT/ AMPHOS21	R	PU	14,26, 38,48
D5.2.x	Periodic management and activity reports	KIT/ AMPHOS21	R	PU	18,36, 48
D5.3	Final report (EUR)	KIT/ AMPHOS21	R	PU	48

Link D5.1b at PM 26 to Milestones and „data-freeze“

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Project Milestones


WP1



No	Milestone name	Estimates date	Means of verification
M1.1	Establish test methods, boundary conditions, materials	6	D1.3 and D1.4
M1.2	Distribution of first concrete and bentonite samples from existing in-situ (field) sites	12	MIN
M1.3	Distribution of first laboratory prepared samples	12	MIN
M1.4.x	Contributing to Kick-off meeting, Annual Project Workshops and Final Workshop	1,12,24,36, 48	WS Proc.
M1.5	1st WP1 data freeze of experimental data (input to WP3)	24	MAR
M1.6	2nd WP1 data freeze of experimental data (input to WP3)	36	MAR

M1.5 documented in 2AWS Minutes and Proceedings

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Project Milestones


WP2



No	Milestone name	Estimates date	Means of verification
M2.1.x	Contributing to Kick-off meeting, Annual Project Workshops and Final Workshop	1,12,24,36,48	WS Proc.
M2.2	1st WP2 data freeze of experimental data (input to WP3)	24	MAR
M2.3	2nd WP2 data freeze of experimental data (input to WP3)	36	MAR

M2.2 documented in 2AWS Minutes and Proceedings

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Project Milestones


WP3



No	Milestone name	Estimates date	Means of verification
M3.1.x	Contributing to Kick-off meeting, Annual Project Workshops and Final Workshop	12,24,36,48	WS Proc.
M3.2	Input received from 1st data freeze of experimental data (from WP1 and WP2)	24	MAR
M3.3	Input received from 2nd data freeze of experimental data (from WP1 and WP2)	36	MAR

M3.2 documented in 2AWS Minutes and Proceedings

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Project Milestones

WP4

No	Milestone name	Estimates date	Means of verification
M4.1	Organizing the kick-off meeting	1	MIN
M4.2 M4.4 M4.6 M4.8	Organizing 1 st , 2 nd , 3 rd and 4 th Annual Project Workshops, including training course, flyer etc, respectively.	10 22 34 45	WS Proc.
M4.3 M4.5 M4.7 M4.9	Exchange with EUG on project, ensuring that work is properly implemented and fits to End User requirements	10 22 34 45	MAR

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Project Milestones

WP5

No	Milestone name	Estimates date	Means of verification
M5.1.x	Printing of Annual Project Workshop Proceedings	16,28,40,48	MAR

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Reporting, financing

- **Maximum grant amount:** 3,868,607.25 EUR
- **Pre-financing amount:** 1,676,397.00 EUR
- KIT received pre-financing 15.06.2015, transfer of money soon afterwards.
- Reporting for PM 18 submitted (a few weeks delayed) in early March.
- At present no feedback from EC received, (EC may routinely take 90 d for evaluation after receipt of reporting).
- Second payment can be expected only once reporting at PM 18 is complete.
- Next upcoming reporting to EC at PM 36, about 1 year from now...

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Project Status

- Kick-off meeting of Cebama in Brussels, July 2015.
- Meetings on WP level in London, Nov. 2015, in connection to IGD-TP EF.
- PM 7: start of Experimental Program.
- Consortium Agreement for Cebama completed in February 2016.
- First Annual Workshop, May 2016, Barcelona.
- Reporting to EC at PM18 was submitted in early March 2017.
- Second Annual Workshop, May 2017, Helsinki.

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Summary

- At PM 24, May 2016, Cebama is working according to planning.
- Deliverables have been prepared and submitted.
- Relevant Milestones have been reached.
- Change in Beneficiary (No. 15 ULOUGH -> No. 28 SURREY) fully implemented.
- Experimental Program at PM 24 successful with no significant problems being reported by beneficiaries.

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Topics for General Assembly (GA)

Topics for GA at end of 1AWS (Friday late morning):

- Acceptance of project progress and achievements.
- Risk assessment.
- Ethics Issue Category: environmental protection questions.
- Acceptance of 3rd AWS schedule and content.
- Mobility Measure approach for next "September-October".
- Acceptance of Special Issue coupled to 4AWS and cement workshop.
- ...

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017



2AWS Workshop Agenda

- Tuesday afternoon: 2 h individual WP sessions, Plenary Session on “Finnish Safety Case” and “Geological Survey”.
- Tuesday evening (departure 19.00h !) Workshop Dinner.
- Wednesday (all plenary): AG info, Posiva Status, WP1 plenary and WP3 plenary.
- Wednesday afternoon: Socio-political Stakeholder Panel Discussion and Cebama Postersession.
- Thursday morning: WP2 Plenary, EUG feedback, General Assembly, END of Meeting.
- Thursday afternoon: Optional Sessions: VTT lab-tour, PhD session.
- Friday: optional Posiva Site Excursion (only if pre-registered), give feedback to Erika on Hotels for pick-up!

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Appendix 3: Finland Gest Profiles

FINLAND GUEST PROFILES (STAKEHOLDER PANEL & INVITED SPEAKERS)

Sami HAUTAKANGAS,
Head of Spent Fuel and
Disposal, Fortum Oy,

Panellist – Wednesday



As the Head of Spent Fuel and Disposal Services at Fortum Corporation, Dr. Sami Hautakangas works closely with nuclear decommissioning and waste management. During his career in Fortum he has had various roles in nuclear waste management activities, which are related to Fortum's fully owned Loviisa nuclear power plant and other Fortum's partly owned NPPs. He has worked in Posiva and SKB Board of Directors and participated actively to the public discussions related to the waste management programs nationally and internationally. In addition he has been closely contributing to the national nuclear safety and waste R&D programs. He holds a PhD in Physics.

Liisa HEIKINHEIMO,
Deputy Director General,
Energy Department Finnish
government – Ministry of
Economic Affairs and
Employment.

Panellist – Wednesday



Dr. Liisa Heikinheimo has over 20 years of experience in the nuclear technology and nuclear waste management field. She earned her MSc in materials science at Helsinki University of Technology (today Aalto University) and Doctoral degree from the Technical University of Eindhoven (NL). Since their founding, she has served on the planning board as well as the research and steering groups of Finland's national waste management fund. She has served on several project and programme board memberships, such as in Euratom and Tekes co-operation. She was a Posiva R&D supervisor from 2009 - 2017. She started her career at VTT in 1985, where she was later the Technology Manager for VTT's area of "Materials for Power Engineering" (2004-09). She then worked at TVO nuclear power company (2009-2017) as head of R&D with responsibility of waste management R&D and administration. Earlier in 2017 she began working for the Finnish government, Ministry of Economic Affairs and Employment.

Vesa JALONEN,
President, Municipal Council,
Eurajoki.

Panellist – Wednesday



Vesa Jalonen is the chairperson of the municipal government of Eurajoki, the regional area on the west coast of Finland where Posiva and TVO power companies are located. He is also principal of the Eurajoki school. He has been involved in various aspects of stakeholder dialogue as a community representative and familiar with waste management issues.

Matti KOJO,
Post-Doctoral Researcher,
Faculty of Management,
University of Tampere.

Panellist – Wednesday



Matti Kojo has several years of experience in the field of studying governance with regard to nuclear power and nuclear waste and carbon capture and storage. His research topics include e.g. public and stakeholder participation and compensation issues. He has participated as a researcher in many Finnish nuclear waste research programmes (JYT2001; KYT2014; KYT2018) and international research projects (EURATOM FP7 InSOTEC and IPPA; FP6 ARGONA) since 1997. Matti defended his doctoral thesis in political science on “The public engagement turn of nuclear waste policy” in 2014 at the University of Tampere. One of the projects Matti is currently working in is ‘Governing Safety in Finnish and Swedish Nuclear Waste Regimes’ (SAFER) funded by the Finnish Research Programme on Nuclear Waste Management (KYT2018).

Jaakko LEINO,
Head of Nuclear Waste Safety
Assessment, Finland’s
Radiation and Nuclear Safety
Authority (STUK).

Panellist – Wednesday



Jaakko Leino has been the Head of the Nuclear Waste Safety Assessment Section for the past 4 years at STUK’s department of Nuclear Waste and Material Regulation. His section is responsible for oversight of post-closure safety and review of post-closure safety assessment of nuclear waste disposal facilities. The section also reviews repository design, performance of the engineered barrier system and material issues. He was responsible for the review of post-closure safety case in Posiva’s construction license application and thus very familiar with the KBS-3 concept. He has a Master of Science in material chemistry and metallurgy, specialized in corrosion science. He has worked at STUK since 2010, as an inspector responsible for regulatory oversight and review of engineered barrier system for waste disposal concepts.

Barbara PASTINA, Posiva
Speaker - Tuesday



Barbara Pastina has been working since 1994 in various nuclear sciences-related fields, such as research (radiation chemistry), science policy and long-term safety assessment of spent fuel disposal. She is currently the project manager for Posiva's safety case in support of the license application to operate the spent fuel geologic repository at Olkiluoto. Barbara holds a Ph. D. in physical chemistry from the University of Paris. She has been working in various nuclear sciences-related fields, such as radiation chemistry research at the Commissariat à l'Energie Atomique (France), science policy at the U. S. National Research Council and long-term safety assessment of spent fuel disposal at the engineering company Saanio & Riekkola.

Timo RUSKEENIEMI,
Team Leader, Nuclear Waste
Management, Geological
Survey of Finland
Speaker – Tuesday



Timo Ruskeeniemi has his background in geology. He has been working with geological nuclear waste disposal since the early 1980s, originally at the Technical University of Helsinki (presently Aalto University) and from 1992 in the nuclear waste management team of the Geological Survey of Finland (GTK). Timo has been the team leader at GTK since 2004. GTK has been highly involved in geological site selection, site investigations and long-term safety studies for 40 years. Timo's own research career has focussed on natural analogue studies providing information for long-term safety considerations. He has been a researcher and a manager of several international projects studying uranium migration and the impacts of glacial cycle on groundwater conditions and bedrock stability in Finland, Arctic Canada and Greenland.

Timo SEPPÄLÄ
Senior Advisor,
Nuclear Waste Services Unit,
Saanio & Riekkola Consulting
Engineers

Panellist- Wednesday



Timo Seppälä is an expert in nuclear waste management and communications. With 17 years of experience as a communication manager in Posyva Oy, he has familiar with communication R&D issues on geological disposal with different audiences. Over the years he has gained substantial international and multicultural experience working in different projects with numerous international organizations like OECD, IAEA and the European Commission dealing with nuclear waste management issues. He has an International MBA (2015) in Communications and Leadership, as well as an MSc in Environmental Sciences (limnology) in 1986 from Helsinki University. Recently he has served as in expert for international peer review on the site selection for the HLW repository in Japan on an OECD/NEA assignment.

Marja VUORIO,
Expert, Site, Posiva Oy.
Speaker – Wednesday



Marja Vuorio has been working at Posiva since 2005 in various research projects dealing with long term safety of geological disposal of spent fuel (safety case, safety classified materials, performance assessment of the engineered barriers). She is currently an expert in the disposal site group, responsible for hydrogeochemical monitoring of the site including the effects of safety classified materials used for the construction of the repository. Marja holds a Doctor of Science degree in physical chemistry from the Helsinki University of Technology (nowadays Aalto University).

Appendix 4: Starting questions for Stakeholder panelists

STAKEHOLDER PANEL 17.5.2017 – THEMATIC QUESTIONS

Host: Erika Holt, VTT.

The panel objective is to discuss and provide insights about how scientific/technical results (i.e. from EU and other public research) is used during dialogue with stakeholders. We would prefer that people on the panel have some knowledge and opinions about what type of technical information is needed for the stakeholders (i.e. what form of communication, varying levels of detail, etc). The panel should help the research “doers” (project managers, research organizations, universities, students, etc) when interacting with various groups, including regulatory authorities, government, and common citizens. The panel can provide insight about what types of outcomes should be targeted for EU projects.

Guidance: 2 hour window (3-5pm). 3 minute introductions each (6x). Then go through themes (roughly in order, though may skip some questions depending on time). Each theme will also ask for questions from audience. REPLIES: Short/concise answers (20-60 seconds max per person). Target 2-3 persons commenting/answering question. Erika will defer any scientific questions irrelevant to panel (i.e. choice of Finland siting rock type = GTK issue).

REMINDER – STAKEHOLDER Definition is mixed. Government officials, regulatory, owners, public (NGO groups, communities, individual persons).

THEMES (numbered) with example questions

1) Communication with Stakeholders

- a. Sami: How come nuclear energy is still so widely accepted in Finland (even after Fukushima)? (Nagra)
- b. Timo/Vesa: How are technical research results integrated to general public discussions?
- c. Matti: How can we ensure iteration of discussions with stakeholders during the course of technical research?
- d. Jaakko/Vesa: What are the key lessons you have learned about communicating science/technical information to non-technical stakeholders? (RWM)
- e. Liisa/Sami: What are examples of good ways for communicating with stakeholders (especially public sector) about technical risks and uncertainties?
- f. Jaakko: How do you deal with or address conflicts of interest (e.g. NPP paying for work by WMOs)? (Nagra)

2) Use of technical information

- a. Jaakko: In a presentation from Posiva (yesterday) we learned how detailed technical information generated in projects like CEBAMA are used in the Safety Case. Can you explain how/if such information is used by Regulators? (RWM)

- b. Vesa/Timo: What is an example of good (and/or poor) output from technical research (like an EU project) that is useful with non-scientific stakeholders?
- c. Liisa/Matti: How should the research committee account for stakeholder needs when planning the scope of technical work?
- d. ANYONE: What level of detail do stakeholders use or appreciate when reviewing scientific outcomes?
- e. Jaakko/Liisa: As a regulator (or government), how to make sure you have sufficient independent experts? Do they have to be Finnish? (NAGRA)

3) Dissemination and Interaction

- a. Vesa/Matti: What are the most common places non-technical stakeholders are getting their information?
- b. Sami/Jaakko: What methods for disseminating information have you found to work well? (RWM)
- c. Timo/ALL: There are no RadWaste “opposition” voices represented on the panel. (NN)
 - i. Did you (or do you still) have opposition groups in Finland (who)?
 - ii. What questions/issues do they have?
 - iii. What kind of relations have you had with them?
 - iv. How do you take into account this opposition?
- d. Liisa/Vesa/ALL: Are there suggested routes where the scientific community should have better outreach or interaction with public/non-technical stakeholders?

4) CEBAMA project specific (bentonite, concrete, RN, modelling, experiments, etc).

- a. Jaakko/Liisa: Specific to the CEBAMA project, are there stakeholder concerns about concrete and/or bentonite/clay materials that the scientific community should prioritize for reducing uncertainties (improving confidence/knowledge)?
- b. ANY: Are there other international stakeholder groups that the CEBAMA project should be engaging with?

5) Assisting Less Advanced Programs

- a. Liisa/Vesa: What best “lessons learned” should other countries take from Finland’s Stakeholder engagement process?
- b. Matti: What are things Finland might have “done wrong”, where you’d advise others to avoid or improve in the future for Stakeholder engagement?
- c. Timo/Sami: What are the different challenges (in stakeholder communication of scientific results) you see between countries with high acceptance (like Finland) compared to less advanced countries?

Appendix 5: Question submission template for stakeholder panel

STAKEHOLDER PANEL – QUESTION SUBMISSION

Your Name & Institute: _____

(note: can be anonymous, if you do not want to give your details)

Please note question(s) you have for our Stakeholder Panellists. Allocate per theme number if possible. Return to Erika Holt or Alba Valls by 12.30 (end of lunch) Wednesday.

Theme Numbers:

- 6) Communication with Stakeholders
- 7) Dissemination and Interaction
- 8) Use of Technical Information
- 9) Assisting Less Advanced Programs
- 10) CEBAMA project specific (cementitious & clay materials, radionuclides, modelling ...)
- 11) Other

THEMATIC AREA (#)	QUESTION

Agenda – PhD Session – Thursday, May 18th, 2017

13:30-15:30 **PhD Session - Auditorium**
(restricted to PhD students, advisors, young researchers and EUG)

Session 1 – Chairstudent: S. Lange

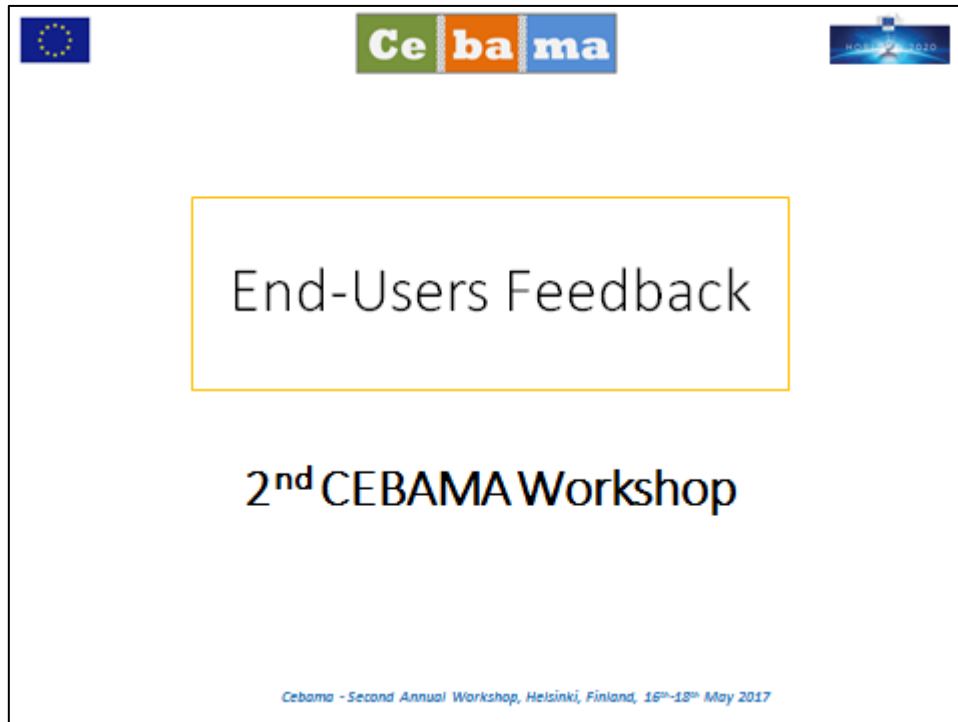
- Characterization and sorption properties of low pH cements
Mouheb, N. (KIT-INE)
- Characterisation of UK cement backfill material and preliminary groundwater leaching experiments
Vasconcelos, R. (USDF)
- Short-Term Interaction of Concretes with Ground-Waters: Percolation Tests
Fernández Pérez, A. (CSIC)
- Nanostructural modification of Ordinary Portland Cement
Vehemas, T. (VTT)
- No title provided.
Rastrick, E. (SURREY)

Session 2 – Chairstudent: R. Vasconcelos

- Rapid development of a reactive transport code with FEniCS and Reaktoro
Hax Damiani, L. (PSI)
- Diffusion of radionuclides through cement based materials: from laboratory experiments towards evaluation and modelling
Rosendorf, T. (UJV-CTU)
- Chemical evolution of bentonite by modelling in repository conditions
Itälä, A. (VTT)
- H-M-C coupling analysis considering several scenarios of long-term alteration in cement-bentonite system
Ito, S. (Kobe Uni.)

15:30-16:30 **VTT Underground Research Lab Tour**

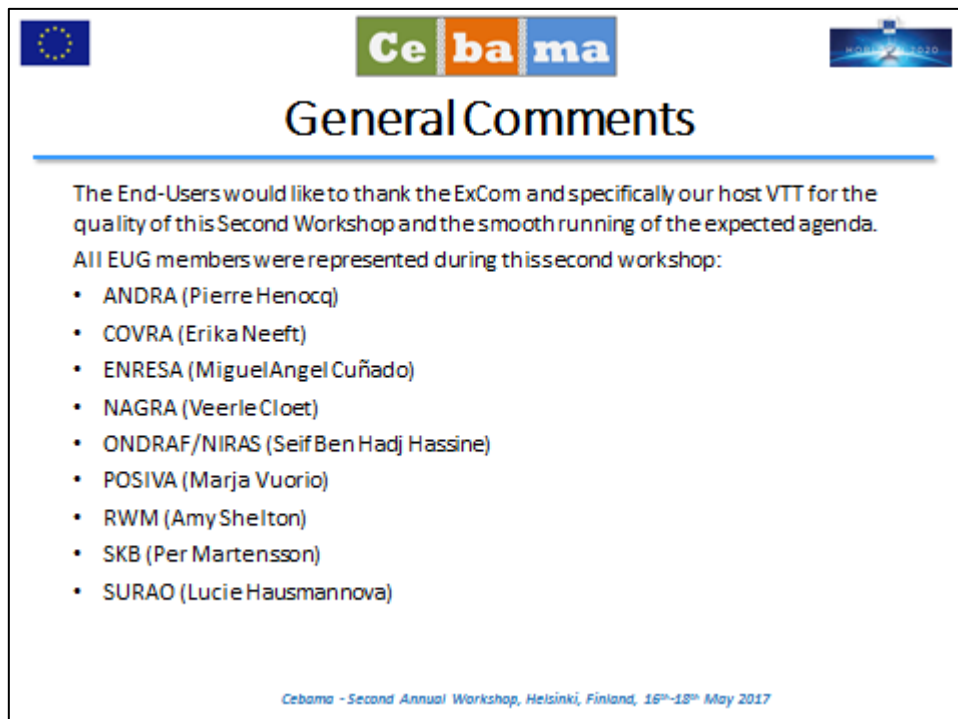
Appendix 7: End-Users Group Feed-Back on the 2nd CEBAMA Workshop



End-Users Feedback

2nd CEBAMA Workshop

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017



General Comments

The End-Users would like to thank the ExCom and specifically our host VTT for the quality of this Second Workshop and the smooth running of the expected agenda. All EUG members were represented during this second workshop:

- ANDRA (Pierre Henocq)
- COVRA (Erika Neeft)
- ENRESA (Miguel Angel Cuñado)
- NAGRA (Veerle Cloet)
- ONDRAF/NIRAS (Seif Ben Hadj Hassine)
- POSIVA (Marja Vuorio)
- RWM (Amy Shelton)
- SKB (Per Martensson)
- SURAO (Lucie Hausmannova)

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017



Main Conclusions

- EUG appreciated the good progress of the workshop,
- The presented results and discussions during the plenary sessions were highly appreciated,
- The S+T abstracts had too little information but the End-Users are looking forward to reviewing the new proceedings,
- The “Socio-political Stakeholder panel” was greatly appreciated by all and was a unique opportunity to exchange with such panelists,
- The framework for the collaborations between WP1 and WP3 still has to be clearly defined for a better capitalization of the obtained results,
- More generally, the EUG encourages such collaborations between all the research groups regardless of their work packages.

Cebama - Second Annual Workshop, Helsinki, Finland, 16th-18th May 2017