Co-funded by the European Commission

CEBAMA ➢ (Contract Number: 662147)

Deliverable n°D4.18

Minutes from 4th Annual (Final) Workshop

Editors: Alba Valls, Lara Duro (AMPHOS21)

Date of issue of this report: May 2019

Report number of pages: 5 + 42 (appendices)

Start date of project: 01/06/2015  Duration: 48 Months

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ABSTRACT:

The 4th Annual Workshop of Cebama, which is the Final Workshop of the project, was held in Karlsruhe (Germany) on March 28th + 29th 2019. The workshop was hosted by the project Coordinator (KIT-INE). There were 66 attendees, including beneficiaries, End-User-Group members, AG representatives and other external experts.

The workshop was organized during two days, in connection to the 5th International Workshop on “Mechanisms and Modelling of Waste/Cement Interactions”. In this way, detailed scientific highlights of the research within CEBAMA were presented in the preceding workshop, maximizing impact and dissemination of CEBAMA results, while the Final Project workshop presented an integrated perspective of the project results and its closure.

The Final Workshop also included the ExCom and EUG meetings and the General Assembly. The minutes of these meetings are prepared in separate documents which are available at the intranet of the CEBAMA project.

The main scientific outcome of the workshop will be reported in the Final Workshop Proceedings which will be made available to the open public at the Project Website (www.cebama.eu) and KIT Scientific Publishing, as a deliverable and as a printed KIT scientific report, respectively.
Minutes of the 4th Annual (Final) Workshop of Cebama

Event: 4th Annual (Final) Workshop

Date and place: March 28th - 29th, 2019, ACHAT Plaza Hotel, Karlsruhe (Germany)

Participants: 66, representing Beneficiaries, EUG, AG and other external experts.

The 4th Annual Workshop of Cebama, which is the Final Workshop of the project, was a cluster of the following meetings and sessions:

- ExCom meeting,
- EUG meeting,
- PhD session,
- Plenary sessions (presentation of workpackage outcomes),
- Topical session,
- General Assembly.

The general Workshop agenda is presented in Figure 1. The detailed agenda is included in Appendix 1, where the presentations included in each session are listed.

<table>
<thead>
<tr>
<th>Thursday 28th March 2019</th>
<th>Friday 29th March 2019</th>
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<tbody>
<tr>
<td>8:00-9:30 1st ExCom meeting</td>
<td>8:00-8:45 ExCom &amp; EUG meeting (in parallel)</td>
</tr>
<tr>
<td>(restricted to ExCom members)</td>
<td>(restricted to ExCom/EUG members)</td>
</tr>
<tr>
<td>9:00-9:30 Coffee break</td>
<td>8:45-9:30 ExCom &amp; EUG meeting (join meeting)</td>
</tr>
<tr>
<td>9:30-9:40 Welcome + Presentation by the Coordination Team</td>
<td>(restricted to ExCom/EUG members)</td>
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<tr>
<td>9:40-14:45 PhD Session (PHD presentations, 10 min each)</td>
<td>9:00-9:30 Coffee break</td>
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<tr>
<td>11:45-13:00 LUNCH</td>
<td>9:30-11:00 Topical Session + Stakeholder Panel</td>
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<tr>
<td>13:00-14:00 WP1 Summary Session</td>
<td>(Topic: Future EU Projects)</td>
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<tr>
<td>14:00-14:45 WP2 Summary Session</td>
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<td>14:45-15:15 Coffee break</td>
<td>11:00-12:00 EUG feedback + General Assembly</td>
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<td>15:15-16:15 WP3 Summary Session</td>
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<td>16:15-17:15 Reporting &amp; Project closure</td>
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<tr>
<td>19:15 Workshop DINNER</td>
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Figure 1: Agenda of the Final Workshop of Cebama.

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 is justified by the different access rights (see Table 1).
The following lines provide an overview of the sessions held during the Final Workshop of the Cebama project.

**Welcome (28.03.2019)**

Marcus Altmaier, the project coordinator and representative of the host organization (KIT-INE), welcomed the participants.

Following, M. Altmaier proceeded with a brief introduction of the workshop and practicalities.

**PhD session (28.03.2019)**

After the welcome, 5 out of the 13 PhD students gave a talk presenting the results obtained in their PhD thesis developed in the frame of Cebama.

- **Jana Kittnerová** (CTU) Comparative study of radium and strontium behaviour in contact with cementitious materials.
- **Emily Rastrick** (SURREY) Alteration of groundwater composition following cement interaction.
- **Daniel González-Santamaría** (UAM) SurfacE Reactivity Interface Experiments studying cement mortars-bentonite interaction in a short spatial-time scale.
- **Naila Ait Mouheb** (KIT-INE) Experimental and modelling studies of low pH cement / clay interface processes: Effects on radionuclide migration.
- **Tapio Vehmas** (VTT) Composition and evolution of cementitious leachates in deep underground repository.

The slides presented by each student are available for project beneficiaries at the intranet of the project. The location is *Files/WP4/4th AWS/Presentations.*
**Plenary sessions (28.03.2019)**

Three plenary sessions, one session per each technical WP (WP1, WP2 and WP3) took place Thursday afternoon. Each plenary session consists on a presentation given by the corresponding WP leaders.

The three presentations gave an insight on the topics listed below with the aim of providing a complete and integrated view of the work developed during the 4-years of the project.

- Objectives of the workpackage and the partners involved in the investigation studies,
- Summary of the obtained results in an integrated manner,
- Dissemination of the obtained results (mainly conferences and publications),
- Integration between technical workpackages,
- Future needs and impact on the Safety Assessment.

The slides presented in WP1-3 plenary sessions are available at the project intranet (location: Files/WP4/4th AWS/Presentations).

**Reporting & Project Closure (28.03.2019)**

Marcus Altmaier, project coordinator, gave a presentation on behalf of the Coordination Team on managing and coordinating aspects of the project. It was mainly focused on the project closure and the last steps partners, WP leaders and the Coordination Team need to take in order to finalize the project.

Then Alba Valls presented the actions done during the project in view of the Knowledge Management and Dissemination of the project results.

The slides of both presentations are included in Appendix 2. They are also available at the project intranet (location: Files/WP4/4th AWS/Presentations).

**Topical Session and Stakeholder Panel (29.03.2019)**

The 3rd Stakeholder Panel was organized as a Topical Session during the Final Workshop of the project. The topical session provides an overview on future EU projects. The following presentations were given:

- *Bernd Grambow* (Subatech/Armines) General overview on EURAD project and the EURADScience network
- *Francis Claret* (BRGM) DONUT, Development and improvement Of NUmerical methods and Tools for modelling coupled processes
- *Marcus Altmaier* (KIT-INE) CORI, Cement Organic Radionuclide Interaction
- *Guido Deissman* (JUELICH) on behalf of Dirk Bosbach, FUTURE, Fundamental understanding of radionuclide retention

The presented slides are available at the project intranet (location: Files/WP4/4th AWS/Presentations).
**EUG statements (29.03.2019)**

Seif Ben Hadj Hassine (EUG chairman), on behalf of the EUG, gave feedback to the Consortium about the project. Their statement is included in **Appendix 3**. The transparencies provided by the EUG are also available at the project intranet (*Files/WP4/4th AWS/Presentations*).

Three main conclusions can be drawn from their presentation:

- The structure of the workshop and its organization in conjunction with the Mechanisms & modelling of waste/cement interactions” workshops was highly appreciated.
- The CEBAMA project was a meaningful opportunity for all of the involved students (Bachelors, Masters and PhD).
- Presentations shown the significant work that was accomplished during the CEBAMA project.

**General Assembly (18.05.2017)**

The General Assembly, chaired by Norbert Maes (SCK·CEN), closed the Final Workshop of Cebama. Specific minutes of this session, detailing the decisions taken by GA at this meeting, are available at the project intranet and only available for project partners (*Files/General Assembly/Meetings*).
APPENDICES:

Appendix 1: Meeting agenda
Appendix 2: Presentation by the Coordination Team & Dissemination activities
Appendix 3: End-Users Group Feedback on the Final CEBAMA Workshop
Appendix 1: Meeting agenda

Thursday, March 28th, 2019

Place: ACHAT Plaza Hotel
Mendelssohnplatz, 76131 Karlsruhe (Germany)

8:00-9:30 1st ExCom meeting  
(Restricted to ExCom members)

9:00-9:30 Get together – Coffee break

9:30-9:40 Welcome + Presentation by the Coordination Team (Marcus Altmaier – KIT-INE)

9:40-11:45 PhD session (20’ presentation + 5’ questions each PhD)
- Jana Kittnerová (CTU). Comparative study of radium and strontium behaviour in contact with cementitious materials.
- Emily Rastrick (SURREY). Alteration of groundwater composition following cement interaction.
- Daniel González Santamaría (UAM). Surface reactivity interface experiments.
- Tapio Vehmas (VTT). Composition and evolution of cementitious leachates in deep underground repository environment.

11:45-13:00 LUNCH

13:00-14:00 WP1 Summary Session (Erika Holt – VTT, Francis Claret – BRGM and Urs Mäder – UNIBERN)

14:00-14:45 WP2 Summary Session (Bernd Grambow – Subatech/Armines)

14:45-15:15 Coffee break

15:15-16:15 WP3 Summary Session (Andrés Idiart – Amphos 21)

16:15-17:15 Reporting & Project Closure (Coordination Team – KIT-INE and Amphos 21)

19:15 Workshop dinner (ACHAT Plaza Hotel)
Friday, March 29th, 2019

Place: ACHAT Plaza Hotel
Mendelssohnplatz, 76131 Karlsruhe (Germany)

8:00-8:45  2nd ExCom meeting and EUG meeting (in parallel)
            (Restricted to ExCom and EUG members)

8:45-9:30  ExCom + EUG meeting (join meeting)
            (Restricted to ExCom and EUG members)

9:00-9:30  Get together – Coffee break

9:30-11:00 Topical Session + Stakeholder Pannel (15’ presentation + 5’ questions)
            Future EU projects
            • General overview on EURAD project and the EURADScience network –
              Bernd Grambow, Subatech/Armines
            • DONUT – Francis Claret, BRGM
            • CORI – Marcus Altmaier, KIT-INE
            • FUTURE – Dirk Bosbach, JUELICH

11:00-12:00 EUG feedback + General Assembly

12:00-13:00 LUNCH (snack)
Appendix 2: Presentation by the Coordination Team & Dissemination activities (M. Altmaier – KIT & A. Valls – Amphos 21)

CT Reporting & Project Closure

The transparencies will be distributed with the minutes

Cebama - Final Annual Workshop, Karlsruhe, DE, 28-29 March 2013

Introduction and overview

Cebama - Final Annual Workshop, Karlsruhe, DE, 28-29 March 2013
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:

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We are at PM 46!

From Grant Agreement Data Sheet

Consortium and bodies

European Commission

Individual Beneficiaries
Coordination Team (CT)
Executive Committee (ExCom)
General Assembly (GA)
Associated Groups (AG)
End-User Group (EUG)
## Individual Beneficiaries

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### 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 Altmairer (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)
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 Altmair (KIT), Vanessa Montoya (KIT)

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 EU 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.
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.

- AGs to Cebama are:
  - Moscow State University (MSU), Russia,
  - Los Alamos NL Carlsbad Office (LANL-CO), USA,
  - Swiss Federal Nuclear Safety Inspectorate (ENSI), Switzerland.

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 Nikitas Diomidis
- **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 Lucie Hausmannova (and Antonin Vokal)
Cebama Time schedule

Publications, Acknowledgments, Ethics, Risks
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.
- It can be reported as an Eligible cost without increasing the approved budget.
- 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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8.3.1 Dissemination of own Results

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.
- Please continue communicating publications to ExCom/CT after PM 48.
Acknowledged Cebama

Acknowledgement of 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

Ethics

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

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.
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 theses 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.
=> Positive confirmation that Ethics requirements were followed. (GA)

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.

- No risks identified at PM 46.
- Decision will be done at General Assembly.
Deliverables and Milestones

Deliverables and Milestones must be completed before finalizing CEBAMA.

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**Project Deliverables**

**WP1: Experiments on interface processes and the impact on phys. properties**

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### WP2: Radionuclide retention in high pH concrete

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<td>Report on new data (adsorption, speciation, solubility) for radionuclide retention generated in WP2 (with updating)</td>
<td>ARMINES</td>
<td>R</td>
<td>PU</td>
<td>45</td>
</tr>
<tr>
<td>D2.6</td>
<td>Manuscript for peer-reviewed publication on results generated within WP2</td>
<td>ARMINES</td>
<td>R</td>
<td>PU</td>
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### WP3: Interpretation and modelling

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

<table>
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<tr>
<td>D3.7</td>
<td>Report on the Upscaling Modelling Task</td>
<td>AMPHOS21</td>
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<td>D3.8</td>
<td>Manuscript for peer-reviewed publication on results generated within WP3</td>
<td>AMPHOS21</td>
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### WP4: Project Deliverables

**WP4: Knowledge management, training and dissemination**

<table>
<thead>
<tr>
<th>No</th>
<th>Deliverable name</th>
<th>Lead Part</th>
<th>Type</th>
<th>DL</th>
<th>DD</th>
</tr>
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<tbody>
<tr>
<td>D4.1</td>
<td>Preparation of a generic poster presenting the project</td>
<td>AMPHOS21</td>
<td>R</td>
<td>PU</td>
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<tr>
<td>D4.2</td>
<td>Set up project webpage and blog</td>
<td>AMPHOS21</td>
<td>R</td>
<td>PU</td>
<td>0</td>
</tr>
<tr>
<td>D4.3</td>
<td>Minutes from kick-off meeting</td>
<td>AMPHOS21</td>
<td>R</td>
<td>CO</td>
<td>02</td>
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<tr>
<td>D4.4</td>
<td>Planning an interaction with socio-political stakeholders</td>
<td>AMPHOS21</td>
<td>R</td>
<td>PU</td>
<td>03</td>
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<tr>
<td>D4.5</td>
<td>Communication Action Plan</td>
<td>AMPHOS21</td>
<td>R</td>
<td>PU</td>
<td>03</td>
</tr>
<tr>
<td>D4.6</td>
<td>Planned dissemination of final results</td>
<td>AMPHOS21</td>
<td>R</td>
<td>PU</td>
<td>12</td>
</tr>
<tr>
<td>D4.7</td>
<td>Minutes of 1st, 2nd, 3rd and 4th annual workshop, respectively</td>
<td>AMPHOS21</td>
<td>R</td>
<td>CO</td>
<td>13</td>
</tr>
<tr>
<td>D4.10</td>
<td></td>
<td></td>
<td></td>
<td>35</td>
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<tr>
<td>D4.12</td>
<td></td>
<td></td>
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<td>37</td>
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<td>D4.38</td>
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### Project Deliverables

**WP4 (continued)**

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<th>Type</th>
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<tbody>
<tr>
<td>D4.8</td>
<td>Draft of the 1st, 2nd, 3rd, 4th Annual Annual project Workshop Proceedings, respectively</td>
<td>AMPHOS21</td>
<td>R</td>
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<td>15</td>
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<td>D4.11</td>
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<td>AMPHOS21</td>
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<td>D4.13</td>
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<td>D4.19</td>
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<td>AMPHOS21</td>
<td>R</td>
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<td>48</td>
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<tr>
<td>D4.14</td>
<td>Report on interaction with non-scientific stakeholder</td>
<td>AMPHOS21</td>
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<tr>
<td>D4.15</td>
<td>Final project reporting, dissemination, communication, training &amp; education, ethical/socio-political/broader stakeholder involvement</td>
<td>AMPHOS21</td>
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<td>D4.16</td>
<td>Press release</td>
<td>AMPHOS21</td>
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<tr>
<td>D4.17</td>
<td>List of mobility measures and summary of the works undertaken</td>
<td>AMPHOS21</td>
<td>R</td>
<td>PU</td>
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<tr>
<td>D4.9</td>
<td>Report on the relevance of the outcome of Cebama for the Safety Case (Manuscript for peer-reviewed publication)</td>
<td>AMPHOS21</td>
<td>R</td>
<td>PU</td>
<td>18</td>
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<tr>
<td>D4.20</td>
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<td>AMPHOS21</td>
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**WP5: Project management**

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<tr>
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<th>Type</th>
<th>DL</th>
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<tbody>
<tr>
<td>D5.1.x</td>
<td>Report/Documentation of exchange of data between experimental and modeling WPs (with updating)</td>
<td>KIT/AMPHOS21</td>
<td>R</td>
<td>PU</td>
<td>14,26, 38,48</td>
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<tr>
<td>D5.2.x</td>
<td>Periodic management and activity reports</td>
<td>KIT/AMPHOS21</td>
<td>R</td>
<td>PU</td>
<td>18,36, 48</td>
</tr>
<tr>
<td>D5.3</td>
<td>Final report (EUR)</td>
<td>KIT/AMPHOS21</td>
<td>R</td>
<td>PU</td>
<td>48</td>
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### Project Milestones

#### WP1

<table>
<thead>
<tr>
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<th>Milestone name</th>
<th>Estimates date</th>
<th>Means of verification</th>
</tr>
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<tbody>
<tr>
<td>M1.1</td>
<td>Establish test methods, boundary conditions, materials</td>
<td>6</td>
<td>D2.3 and D2.4</td>
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<tr>
<td>M1.2</td>
<td>Distribution of first concrete and bentonite samples from</td>
<td>12</td>
<td>M/N</td>
</tr>
<tr>
<td></td>
<td>existing in-situ (field) sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1.3</td>
<td>Distribution of first laboratory prepared samples</td>
<td>12</td>
<td>M/N</td>
</tr>
<tr>
<td>M1.4</td>
<td>Contributing to Kick-off meeting, Annual Project Workshops</td>
<td>1,12,24,36,48</td>
<td>WS Proc.</td>
</tr>
<tr>
<td></td>
<td>and Final Workshop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1.5</td>
<td>1st WP1 data freeze of experimental data (input to WP3)</td>
<td>24</td>
<td>MAR</td>
</tr>
<tr>
<td>M1.6</td>
<td>2nd WP1 data freeze of experimental data (input to WP3)</td>
<td>36</td>
<td>MAR</td>
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#### WP2

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<th>Means of verification</th>
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<tbody>
<tr>
<td>M2.1</td>
<td>x Contributing to kick-off meeting, Annual Project Workshops</td>
<td>1,12,24,36,48</td>
<td>WS PROC.</td>
</tr>
<tr>
<td></td>
<td>and Final Workshop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2.2</td>
<td>1st WP2 data freeze of experimental data (input to WP3)</td>
<td>24</td>
<td>MAR</td>
</tr>
<tr>
<td>M2.3</td>
<td>2nd WP2 data freeze of experimental data (input to WP3)</td>
<td>36</td>
<td>MAR</td>
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## WP3

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<th>Means of verification</th>
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<tr>
<td>M3.1</td>
<td>Contributing to Kick-off meeting, Annual Project Workshops and Final Workshop</td>
<td>12, 24, 36, 48</td>
<td>WS Proc.</td>
</tr>
<tr>
<td>M3.2</td>
<td>Input received from 1st data freeze of experimental data (from WP1 and WP2)</td>
<td>24</td>
<td>MAR</td>
</tr>
<tr>
<td>M3.3</td>
<td>Input received from 2nd data freeze of experimental data (from WP1 and WP2)</td>
<td>36</td>
<td>MAR</td>
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</table>

## WP4

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

WP5

<table>
<thead>
<tr>
<th>No</th>
<th>Milestone name</th>
<th>Estimates date</th>
<th>Means of verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5.1.x</td>
<td>Printing of Annual Project Workshop Proceedings</td>
<td>28,40,48 MAR</td>
<td></td>
</tr>
</tbody>
</table>
Project Workshops

Calendar of project meetings

2015: Kick-off meeting, Brussels, Belgium (2 July 2015)
2016: 1st AWS organized by AmphiOS21, Barcelona, Spain (11-13 May 2016)
2017: 2nd AWS organized by VTT, Finland (16-18 May 2017)
2018: 3rd AWS organized by Subatech, Nantes, France (17-18 April)
2019: 4th and Final AWS organized by KIT-INE, Karlsruhe, GER, 28-29 March
   (Organized in connection to Workshop “Mechanisms and Modelling of Waste/Cement Interactions”).
   Mo, 25.3., - We 27.3.: International Workshop
   Tu 28.3. + Fri 29.3.: Cebama Final Meeting

Annual Project Workshops, Proceedings

- The workshop proceedings are published at KIT-Scientific publishing will be openly accessible and can be
downloaded free of charge at the project WEB page
- Review by EUG on S&T contributions.
- Proceedings for 1AWS and 2AWS printed (considerably delayed)
- 3 AWS proceedings ready. Proposal to combine printing
  with input from Final Workshop. (⇒ GA)
Annual Project Workshops, Proceedings

- **Process for Dissemination - Final CEBAMA Workshop**

- **Special Issue in Applied Geochemistry** arranged for both contribution from the International Workshop and CEBAMA Final AS. (M. Altmaier acts as guest-editor, review process according to AG guidelines. Reviewer for Special Issues from Intl. WS steering group and CEBAMA ExCom and EUG)

- CEBAMA partners encouraged to submit R&D paper to the Special Issue.

- Journal will open submission portal from April/May to July 2019.

- **CEBAMA Final Workshop Proceedings** will not include S&T contributions as before.

- Each partner prepared summary on work performed over entire CEBAMA project (based on “surveys”, review within ExCom, no EUG review required).

- WP leader contribute „integrated“ summaries on main results and impact. (► share with EUG for comments).

CEBAMA presentations at EURADWASTE
CEBAMA presentation at EURADWASTE

http://fisa-euradwaste2019.nuclear.ro/

(1) CEBAMA: Research and innovation action on cement-based materials, properties, evolution and barrier functions (CT, ExCom)

(2) Benchmark of reactive transport models within CEBAMA: application to a concrete/clay interface (Lidiart et al.)

(3) Chemistry of beryllium in cementitious systems studied within CEBAMA: solubility, hydrolysis, carbonate complexation and sorption (Gaona et al.)

(4) Studies of Radium and Strontium uptake on Cementitious materials within CEBAMA project (Jana Kittnerova et al.)

(5) Radionuclide migration in low-pH cement / clay interfaces; derivation of reactive transport parameters within the CEBAMA project. (Naila Ait Mouheb et al.)

CEBAMA will be well represented in EURADWASTE...
Dissemination, Mobility, Gender
=> Alba Valls, WP4

CEBAMA reporting => Technical, Financial
**Reporting Overview**

- **Action duration:** 48 month
- **Start:** 01-06-2015
- **End:** 31-05-2019

**CEBAMA Reporting**

- The reporting function is **activated at the end of each** reporting period at PP.

**Final Reporting:**
- (expected)
- **Activation date:** 31st May 2019
- **Reporting deadline:** 31st July 2019
Structure of the Report

1. **Technical** Report
   - 1. Part A (to be done via the participant portal)
   - 2. Part B (to be submitted as a report)

2. **Financial** Report (Individual financial statements filled in by each beneficiary and validated by the Coordinator)

---

Technical Report – Part A

**PART A**

- **CT adds information** based on your feedback (already received) to PP.

  1. [Checkmark]
  2. [Checkmark]
  3. [Checkmark]
  4. [Checkmark]
  5. [Checkmark]
  6. [Checkmark]
  7. [Checkmark]
  8. [Checkmark]

- Please fill in info on publications!
- Check info on gender as filled in by CT.
- Please don’t change these texts by your own.
PART B

- Core part of the report (free text – pdf document)
- Done by CT with the input from all beneficiaries

FINANCIAL REPORT

- Beneficiaries and linked third parties must fill these in and submit them to the Commission, as part of the report.

- Consists of structured forms from the grant management system, including:
  - individual financial statements for each beneficiary (and third parties)
  - explanation of the use of resources and the information on subcontracting and in-kind contributions provided by third parties, from each beneficiary for the reporting period concerned
Financial reporting

» „lesson-learned“ from 2nd periodic reporting: EC rejected reporting requesting additional information.

Please provide description of the costs incurred in the other direct costs category. If any travel was performed, please indicate the date, place, purpose and number or name of travellers and travel costs for each travel.

» Please prepare this kind of information and add to your financial reporting documents. May speed up process...

Financial reporting

» Requested EC funding for each partner defined according to GA. This funding needs to be justified in financial reporting. If you don’t report 100% effort (EURO basis), EC contribution is less!

» “Remaining” funding will be distributed according to
  - reimburse partners who have costs for open access publications,
  - partners who have justified >100% according to accepted financial reporting.
Financial reporting

- Estimated eligible costs: 5,952,944.50 EUR
- Maximum grant amount: 3,868,607.25 EUR

- Guaranty Fund: 193,430.36 EUR

- Pre-financing: 1,482,966.64 EUR distributed (2015)
- 1st reporting period: 1,527,463.31 EUR distributed (2017)
- 2nd reporting period: 277,886.22 EUR distributed (2019)

- Final reporting: 580,291.08 EUR to distribute (if all is accepted)

Status and Summary
Project Status

- 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.
- Third Annual Workshop, April 2018, Nantes.
- PM 42: Closing of Experimental Program (WP 3 ongoing).
- Final Annual Workshop, March 2019, Karlsruhe, connected to Intl. Workshop.
- CEBAMA closes end of May 2019, FINAL reporting!
- CEBAMA presentation at EURADWASTE.

Targeted dissemination tools

- CEBAMA Newsletter, Website...
- S&T contributions to Annual CEBAMA Workshops and Proceedings.

- Individual peer-reviewed scientific publications.
  - Individual publications by beneficiaries in scientific journals.
  - Contributions to Special Issue in Applied Geochemistry.

- Integrated Reports
  - Peer-reviewed publications on WP level ("WP-leader" et al.)
  - Application to the Safety Case. (Duro et al.)
  - Final report – EURADWASTE paper ("CT/Altmairer" et al.)

- CEBAMA potentially available for EURAD knowledge management activities.
Summary

- At PM 46, March 2016, CEBAMA is working according to planning.
- Deliverables have been prepared or will be submitted.
- Relevant Milestones have been reached.
- No significant problems were reported by partners.
- Constructive R&D interactions within CEBAMA and with EUG.
- CEBAMA focusses on closing of project an Final Reporting.
- Dissemination of R&D results ongoing...

Topics for General Assembly
Topics for General Assembly (GA)

Topics for GA at end of Final WS (Friday last session):

- Acceptance of project progress and achievements.
- Risk assessment.
- Ethics discussion
- 3 AWS and Final WS Proceedings, combined printing.
- ...

Presentation by the Coordination Team

The transparencies will be distributed with the minutes
Dissemination & Communication

Workshops

- 2015: Kick-off meeting, Brussels, Belgium (2 July 2015)
- 2016: 1st AWS organized by Amorphos21, Barcelona, Spain (11-13 May 2016)
- 2017: 2nd AWS organized by VTT, Finland (16-18 May 2017)
- 2018: 3rd AWS organized by Subatech, Nantes, France (17-18 April 2018)

Dissemination & Communication

Final Newsletter

April 2019 – Newsletter will be ready

Please distribute and post it in social media to reach as much non-scientific public as possible.
Dissemination & Communication

Publications - Articles
- 29 articles published
- 40 articles planned to be prepared in 2019-2020

<table>
<thead>
<tr>
<th>Journal</th>
<th>Articles</th>
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<tbody>
<tr>
<td>Applied Geochemistry</td>
<td>6</td>
</tr>
<tr>
<td>Cement and Concrete Research</td>
<td>4</td>
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<tr>
<td>Clay Minerals</td>
<td>2</td>
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<td>Solid Earth</td>
<td>2</td>
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<td>Geophysical Journal International</td>
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</tbody>
</table>

Dissemination & Communication

Publications - Conferences
- 89 oral or poster presentation in international conferences
- Attendance to 39 conferences (12 European countries & EUA, Australia, China, Korea, Japan)
Training & Education

Master & PhD Thesis

- 6 MSc Thesis
- 15 PhD Thesis

CePama - Final Annual Workshop, Karlshofs, France, 28th-29th March 2019

PhD/Master Thesis

Mobility measures

Training and Education

A36 / A42
Knowledge Management

Deliverables
Status of deliverables showed in WP summary presentations

WP4 deliverables to be submitted:
- D4.14: Interaction with non-scientific stakeholders
- D4.15: Final project reporting
- D4.16: Press release
- D4.17: List of mobility measures
- D4.18-19: Minutes and Proceedings of Final WS
- D4.20: Relevance of Cebama for the Safety Case

Knowledge Management

Proceedings
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 [http://www.ksp.kit.edu](http://www.ksp.kit.edu).

Contents FWS Proceedings
- Introduction by CT
- Work summaries by WP leaders
- Technical Summary of work by each partner (survey)

Planning of submission: May-June 2019
WP4 Summary

Dissemination and Communication

Training and Education

Knowledge Management

Project outcome summary

- Pages: 69
- Conference Presentations: 89
- Deliverables: 23
- 5T: 91
- PhD: 15
- MS: 6
WP4 Summary

THANK YOU
Appendix 3: End-Users Group Feed-Back on the Final CEBAMA Workshop
(S. Ben Hadj Hassine, ONDRAF/NIRAS)

End-Users Feedback

4th CEBAMA Workshop

General Comments

The End-Users would like to thank the ExCom and specifically our host KIT for the quality of this 4th 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 (Lukas Martin)
- ONDRAF/NIRAS (Seif Ben Hadj Hassine)
- POSIVA (Marja Vuorio)
- RWM (Amy Shelton)
- SKB (Per Martensson)
- SURAO (Lucie Hausmannova)
General Comments

- Having one single presentation for each one of the WP summarizing all of the produced results had a strong added value to the last WS.
- For the next projects, we are highly in favor of more of these presentations with integrated and synthesized results.
- Combining the CEBAMA and the “Mechanisms & modelling of waste/cement interactions” workshops was a great initiative that gave more visibility to the CEBAMA project and more exchanges with the scientific community.
- The PhD students session provided a nice opportunity to the young scientists and the presentations were of good quality. The CEBAMA project was a meaningful opportunity for all of the involved students.

Main Conclusions

- The presentation gave an overview of the significant work that was accomplished during the CEBAMA project and this was highly appreciated.
- WP1 addressed phenomenological behavior of a variety of relevant materials and provided valuable results. Although some of the outlined conclusions were too generic and require more specific context information to be correctly interpreted (e.g. low-pH cements are useless).
- WP2 provided important data with respect to initially identified knowledge gaps (e.g. Be). The relevance and the applicability for the time scales longer than the lab tests have yet to be better assessed.
- WP3 has greatly benefited of the CEBAMA project in terms of exchanges between the different participants and improvements of the modelling tools. More applications of these models to the WP1 systems and experiments would have been appreciated.
Main Conclusions

- In answer to the needed assessment of the added value of the CEBAMA project to the Safety Case and Performance Assessment in the respective End-Users countries:
  - The different contexts between the 9 End-Users, the absence of Safety Cases for some of them and the unpredictable evolution of the contexts makes the task very difficult to achieve;
  - The relevance of the results of the CEBAMA project and their added value to the SC are yet to be evaluated in the future but little can be said at the moment;
  - Whether it is a direct use of obtained values or a phenomenological description of the interface, the End-Users agree that the accomplished work so far will eventually have its applications.

Main Conclusions

- The collaborations between the participants and the WP was fruitful. However, although WP1 and WP2 fed significant data to WP3, the support of WP3 to WP1 and WP2 lacked.
- For future projects, the role of the End-Users could be improved:
  - The involvement of the End-Users was very strong in the preliminary stages of the project but too little during the actual research work. More implication of the End-Users in the technical choices made would benefit the relevance and the applicability of the final outcomes;
  - The role of the End-Users should not be limited to the validation or the evaluation of the results. Integration of their feedback in the general course of the future projects during the early stages of the research work would benefit all parties.
- All End-Users agree on the extensive amount of work that have been accomplished in the past 4 years. Thank you for making CEBAMA happen!