### **EURAD-2 Second wave**

EURAD-2 is committed to being as needs-driven as possible, and we are pleased to announce a major milestone: the EURAD-2 Bureau has published the Terms of Reference (ToR) outlining the selection process for the second wave of EURAD-2 activities.

This new phase is open to new participants and is designed to integrate emerging needs from the community, ensuring continued relevance and impact.

A first webinar, held at the end of June, introduced the ToR, selection criteria and upcoming timeline. The recording of this webinar is available on <a href="EURAD-2 website">EURAD-2 website</a>, together with the ToR and slides presented.

This fall, EURAD-2 will host three webinars to explore WP proposals and opportunities for involvement (registration will be open in September):

- ♦ October 27 | 13:30–16:30
- ♦ October 29 | 13:30–16:30
- ♦ October 31 | 09:00–12:00

If you are not already a participant of EURAD-2 and want to potentially be involved in future activities, we invite you to register to one of the three Colleges to stay informed about the planning process.

- For Research entities: euradscience@sckcen.be
- For Technical Support Organisations : <a href="mailto:secretary@sitex.network">secretary@sitex.network</a>
- For Waste Management Organisations: <a href="mailto:secretariat@igdtp.eu">secretariat@igdtp.eu</a>

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#### In memory of Anders Sjöland

Anders Sjöland was a remarkable colleague, leader, and friend whose presence left a deep and lasting impression on all who had the privilege to work with him. His passing is a great loss, not only to his loved ones but also to the international scientific community he helped shape and guide with wisdom and dedication.



Anders played a central role in the EURAD programme, where he was not only a key scientific contributor but also a leader who brought clarity and direction to one of the most important long-term challenges of our time. Moreover he deeply understood the importance of sincere cooperation between the industry and the scientific world. Through both his scientific work and his coordination efforts, Anders helped secure the foundations of a shared European vision for managing radioactive waste responsibly.

But Anders was more than a scientist, he was a truly generous and deeply principled person. Those who knew him will remember his calm presence, his thoughtful questions, his openness to dialogue, and the way he could create trust and cooperation across borders, disciplines, and institutions. He never sought the spotlight, but always worked with quiet determination to bring out the best in others and to ensure that collective efforts were grounded in integrity and respect.

Whether in a technical meeting, a policy discussion, or a quiet hallway conversation, Anders had a way of making people feel heard and valued. His mentorship shaped careers and his leadership built communities. His contributions will remain in the scientific legacy he leaves behind, but even more enduring is the example he set as a person—steadfast, thoughtful, and kind.

Today we, the scientific community that worked with him, remember Anders with deep gratitude. We carry his memory with us, not only in our work, but in the way we strive to treat one another. He will be profoundly missed.

Signed by the partners of the EURAD work package on "Spent Fuel Characterization

#### WP Leader interview

## Marja Vuorio (COVRA, The Netherlands), ASTRA WP Leader



# What unique value does ASTRA bring to EURAD-2 compared to other WPs?

ASTRA provides answers and platform to discuss challenges relevant for small waste streams/inventories. In ASTRA alternative RWM strategies (including disposal) are explored for small waste inventories, e.g. cases in which the design lifetime of long-term storage facilities has been exceeded, deep borehole disposal and evaluation of strategies for the disposal of waste bearing naturally occurring long-lived radionuclides. We also have one task providing ASTRA with civil society input for the topics.

# How has your other experiences (like leading the secretariat of ERDO) has prepared/influenced you in leading ASTRA?

My work in ERDO Association secretariat has provided me with information about the challenges and interests of small inventory member states. It has also provided links to international organisations and projects (e.g. IAEA, NEA, ROUTES and DG-ENER Pilot Project) which are/were working on similar topics as ASTRA, which has been useful.

#### What role do end-users play in the WP's activities?

End-users are invited to the Task and WP meetings/workshops to hear about the results and give their input on them, e.g. providing and gaining information about Deep Borehole Disposal and long-term storage in their countries. They have also had opportunity to answer WP questionnaires, if they so wish. We are at the moment expanding our Live Discussion Forums (organized by Task 5), where chosen topics are discussed, after some presentations of the matter, for also stakeholders and end-users.

# How does ASTRA collaborate with other work packages, and have any synergies emerged so far?

ASTRA has board members involved in several other WPs and we are following e.g. OPTI, ICARUS, CLIMATE, STREAM, ANCHORS and FORSAFF. With FORSAFF we will have a joint



session in the next annual event. In general any WP dealing with disposal or pre-disposal topics could have a link to ASTRA, e.g. climate and any future reactors (and their fuel) could have impacts for both disposal and long-term storage. ASTRA Board has had and will continue to have meetings and participate the events of other WPs to follow closely what is happening in them.

# Would you give some advice to early-career professionals who are starting to be involved in EURAD-2?

I would courage everyone to take the opportunity to also follow studies in other fields/disciplines than their topic, if possible. EURAD-2 gives a great opportunity to this. When your career advances the wider knowledge you have in the RWM field the better. Even if you do not wish to work in other fields, the knowledge you have will help you to focus your own research.



A new section will now be featured in each EURAD-2 newsletter. Following the recent ideation session between the EURAD-2 Bureau, PMO, and Chief Scientific Officers (see article on page 6), the PMO emphasized the importance of recognising the Consortium's collective achievements. In many cases, partners contribute well beyond their agreed commitments, dedicating extra time and effort to additional activities. This dedication deserves to be acknowledged and celebrated.

To this end, the newsletter will now include a "Thank You" section, where anyone can express their appreciation to individuals or organisations within the Consortium.

Introducing this new section we would like to thanks:

- WP7 L'OPERA SotA led author Federica Pancotti and WP leader Thierry Mennecart, for professionally handing the reviews and edits for producing a high-quality deliverable.
- WP8 SAREC SotA authors Olga Riba and Lena Evins, , for delivering the document on time.
- WP9 InCoManD authors Holger Völzke, Andrea Cherkouk, Bojan Zajec, Aurélien Debelle, Ursula Alonso, Patrick Ganster, Lidia Generelo-Casajus, Mohamed L. Merroun, Mar Morales-Hidalgo, Janne Pakarinen, Fabrice Rossignol and Andressa Trentin for issuing a high quality initial SotA on durability of traditional and innovative disposal container materials and coatings, including perspectives on further research within InCoManD.
- WP13 OPTI authors Valéry Detilleux, Anne-Catherine Dieudonné, Gauthier Fontaine, Philipp Herold and Alan H. Tkaczyk fpr delivering their draft green paper document on time
- The 17 reviewers of 27 eligible mobility applications that have been assessed todate within WP2 Knowledge Management (within 3 rounds of applications so far).
- All the EURAD-2, EURAD-1 and PREDIS participants and end users who did a great job representing our waste management community at the EURADWASTE2025 conference in Warsaw in May.
- Amphos21 for hosting the Bureau/PMO meeting and helping create such a welcoming and positive atmosphere
- All Bureau, PMO members and Chief Scientific Officers for bringing disruptive thinking and providing numerous out of the box and fun ideas during the ideation session on EURAD-2's critical success factors
- Bureau for delivering the milestone on the second wave a full three months ahead of schedule!



## A look back: EURADWASTE 2025



EURAD-2 partners had a strong presence at FISA-EURADWASTE 2025, with 24 posters and numerous panelists contributing across various sessions. This high level of participation highlighted the work being carried out within the EURAD-2. The conference served as a valuable platform to showcase key research and foster dialogue with the wider community.















## A look back: Bureau/PMO meeting n°4

On June 5, the Bureau, PMO, and Chief Scientific Officers of EURAD-2 gathered in person for a highly productive and thought-provoking meeting. The main objectives of this meeting were to share the latest updates on the programme, to prepare for the first annual event and the third General Assembly, to present the progress within each Work Package, to discuss the next steps, particularly the second wave, and to reflect on the programme's success criteria.



Overall, the WPs are progressing well, despite some delays in the delivery of outputs and some communication shortcomings within certain WPs.

A highlight of the day was a dynamic ideation session that began with a bold and unexpected question: "How to ensure that EURAD-2 is failing?". This reverse-thinking approach unlocked disruptive ideas, not only to avoid failure but to drive success and long-term impact. The outcomes are being utilised by the PMO and Bureau to implement actions to ensure a successful EURAD-2. All partners are always welcome to give additional feedback and suggestions via the annual event and General Assembly feedback surveys, or be in contact with <a href="mailto:secretariat@ejp-eurad.eu">secretariat@ejp-eurad.eu</a> with suggestions.





## WP2 – Mobility Programme – Mid-year overview

The EURAD-2 Mobility Programme, launched in January aims to financially support both junior and senior professionals to visit infrastructures from EURAD-2 partners and end-users, undertake internships, attend conferences and follow training courses in the field of radioactive waste management. The progress of this programme so far is the following:

- A total of **27 eligible applications** were submitted from the first 3 rounds (February, April and June)
- 85 % of the applications have been accepted!
  - o 7 internal mobilities (within the WP)
  - o 7 applications to attend conferences / workshops
  - o 1 application to attend a training
  - o 1 mobility to an institute outside of EURAD-2 Consortium

We look forward to more successful mobilities and impactful collaborations in the coming months. So do not hesitate to apply <a href="here">here</a>!

#### **ANCHORS Summer School**

Less than 30 spots left!



27-29 August 2025



Liège, Belgium



Educational level: EQF Level 7: equivalent to Master degree, post graduate



Deadline for registration: **15 July 2025** Check <u>EURADSchool website</u> - Maximum of 80 participants (open to researchers outside EURAD-2)

At the end of the school, participants will be able to:

- Understand the Thermo-hydro<sup>2</sup>-chemio-mechanical (multi-physical) couplings in geomaterials
- Catch the fundamentals on Constitutive modelling of the relevant phenomena
- Identify the challenges in numerical modelling of these physical processes
- Perceive the experimental evidence at the laboratory scale
- Figure out the physical processes thanks to in situ tests.

#### **WP5 ICARUS**

The WP5 – ICARUS Annual Meeting was held on-line on June 12th – 13th (2025) with a wide and active participation from the partners and a total of 64 attendees from 29 European organizations. During the meeting, the progresses and the future plans were presented paving the way to fruitful collaborations and exciting advancements on innovative techniques for the characterization of physical-chemical-radiological properties of Low and Intermediate Level Waste.



The key highlights of this meeting are the following:

- The status of Task 3 on Non-Destructive Techniques has been presented. In particular, a practical
  demo of the integrated data management platform under development has been provided.
  Brief workshops were held to showcase the progresses of the working groups dedicated to
  advancing the characterization of physico-chemical-radiological properties.
- The implementation roadmap and the progresses of Task 4 on Destructive Techniques for Difficult to Measure radionuclides have been described. Each working group and partner presented the work plan, on-going and future activities. In general, common interest in participating in intercomparison exercises with real waste samples has emerged.
- The status and the future activities of Task 5 on Scaling Factors have been presented, with dedicated presentations on two approaches: the theoretical model and the statistical design. An innovative joint approach combining theoretical model and statistical design features has been envisaged.

#### WP6 STREAM First Biannual workshop

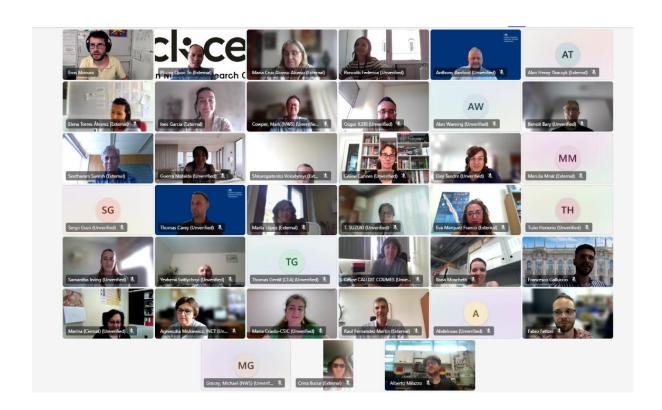
On June 11th, the WP6 STREAM (Sustainable TREAtment and iMmobilisation of challenging waste) held online its first Biannual Workshop, bringing together participants from 24 contributing organizations and PMO representative.

STREAM's objectives include the development of innovative and sustainable solutions and the optimization and upscaling of treatments and conditioning materials for the predisposal of problematic waste streams.

During the workshop, participants engaged in technical presentations and dynamic discussions, fostering stronger collaborations and identifying opportunities for synergy across planned research and development activities. A key highlight was the presentation of the Initial State of the Art Report, which provided a comprehensive review of existing and emerging treatment and conditioning processes for challenging wastes. This exchange of knowledge set the stage for targeted improvements and innovation.

The event also served as a platform to strengthen cross-work packages interactions. Collaborations include ongoing initiatives with ICARUS and L'OPERA focused on pre-disposal topics, such as a joint survey (link) for the training program currently open until June 30th and the joint workshop held on June 24th (open to registered End Users and Stakeholders). Upcoming activities include the Topical Session 1 of the EURAD-2 Annual Event.

Preliminary talks also commenced regarding potential cooperation with OPTI Task 4, highlighting STREAM's commitment to fostering a collaborative ecosystem within the EURAD-2 community.



#### WP7 L'OPERA

The first annual WP7 L'OPERA workshop took place in Paris (ENSAM-PIMM) on April 28 and 29, 2025. It was an great opportunity to meet face-to-face with colleagues involved in the project and exchange ideas on the "long-term performance of waste matrices" in the context of Predisposal actives. During the event, the progress of work on each task was presented, and also provided an opportunity to establish new collaborations between WP beneficiaries. Most of the activities during the first period of the project were devoted to the initial State-of-the-Art, the establishment of an inventory of the waste forms to be studied and the definition of common protocols for their characterization. Following the workshop, a technical visit to the ENSAM laboratories was organized.



The next event is the Joint meeting on Predisposal activities (WP5-ICARUS, WP6-STREAM, WP7-L'OPERA) scheduled on June 24 (on-line) at which End-Users and Stakeholders from each WPs are invited to give feedback on the progress of the work.



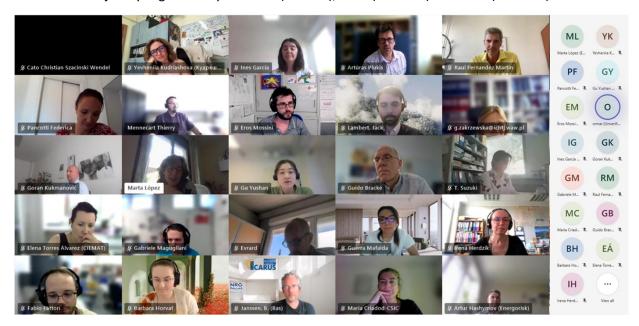




#### First joint workshop on Predisposal activities

The first joint workshop on EURAD-2 Predisposal activities with End-Users and Stakeholders was held online on June 24, 2025.

This event was jointly organized by the WP5 (ICARUS), WP6 (STREAM) and WP7 (L'OPERA).



A significant number of End-users and Stakeholders registered and about 25 organizations participated to the joint workshop, with many involved in two work packages, and some in all three. More than a hundred participants attended the meeting.

During the workshop, each work package presented their objectives, ongoing work, main achievements, and planned activities. The presentations given during the meeting will be made publicly available.

To ensure a dynamic and interactive session, online live surveys were conducted to verify whether the direction of the work aligns with the expectations of the End-User Group (EUG) and Stakeholders, and to gather their feedback on the ongoing predisposal activities and the decisions that have been taken.

This event also highlighted the interactions between the three work packages and the complementarity of their activities, particularly by showcasing the future training courses to be organized during the project. This workshop has hopefully laid the foundations for a fruitful engagement with End-Users and Stakeholders.



# WP10 ANCHORS annual meeting — partners were welcomed in Montpellier and in Tournemire, France in April 2025

From April 2 to April 4, 2025, the first annual meeting was held in France and marked the launch of ANCHORS' experimental and numerical benchmarks, followed by the visit of the Tournemire Underground Research Laboratory.

The event brought together 43 partners from 12 European countries to discuss the project's progress. Each of the partners presented their ongoing and planned activities. The dynamic and friendly group fostered meaningful exchanges among participants, both during presentations and dedicated discussion sessions. It provided a valuable platform for both experimenters and modelers to share their perspectives on current and future work. A dedicated synergy session between experimenters and modellers was organised, during which both the experimental and numerical benchmark plans — which will involve the partners over the coming year — were shared and discussed to ensure their agreement and alignment.



Visit of the Tournemire Underground Research Laboratory (April 2025)

A highlight of the meeting: the visit of the Tournemire Underground Research Laboratory The visit to Tournemire provided the partners with an opportunity to explore in situ experiments conducted by ASNR on bentonite, notably the SEALing Experiment (SEALEX) and the Vertical SEALing experiment (VSEAL). (https://en.irsn.fr/tournemire-experimental-station).

The Work Package Meeting n°2 will take place in Liège, Belgium, from August 25 to 27, 2025, followed by a training session from August 27 to 29, 2025.



#### WP11 CLIMATE Pluralistic Workshop: Reflections and Outcomes

The WP11 CLIMATE Pluralistic Workshop took place on the 26th and 27th of March at École des Mines in Fontainebleau, bringing together participants from research institutions, waste management organizations, technical safety bodies, and civil society. For two days, Nuclear Transparency Watch experts led the group in engaging and constructive discussions on how climate change may affect the management of radioactive waste.

The workshop provided a platform for open dialogue and mutual learning. Participants explored key challenges, shared diverse perspectives, and advanced efforts to strengthen transparency and stakeholder engagement within the field.

This activity is part of WP11 CLIMATE's broader mission: to identify knowledge gaps and provide recommendations for future research on the impacts of climate change on radioactive waste management facilities and sites, both in the short and long term.



#### WP15 DITOCO2030

The DITOCO2030 work package actively participated in the 11th FISA-EURADWASTE 2025 & SNETP Forum, held from May 12–16 in Warsaw, Poland.



We were pleased to present our poster and engage in several productive discussions focused on upcoming work and deliverables.

In June 2025, the work package also held the first community outreach event, marking a significant step in broadening DITOCO's engagement beyond the project consortium. Building on this momentum, we will intensify our interactions with stakeholders throughout the autumn to ensure our efforts align with broader community needs and expectations.

Looking ahead, DITOCO2030 partners are preparing for the EURAD-2 Annual Event in Bologna, with the aim of enhancing collaboration both across work packages and at the broader EURAD-2 level, particularly with the HERMES work package. As part of the preparations, a joint meeting between DITOCO2030 and HERMES Task 5 participants is scheduled for early July 2025.

In addition, DITOCO2030 will also present its latest results at DigiDECOM's NuclearNEXT 2025, taking place from November 17–21 in Halden, Norway. This event, - centered on AI, digital twins, robotics, and human-technology interaction across the nuclear lifecycle-, includes a dedicated session for projects funded under the Euratom Training Programme. The event brings together technology developers, researchers, European project consortiums and industry partners, providing a valuable opportunity for collaboration and knowledge exchange.

Register here: DigiDECOM's NuclearNEXT 2025 - IFE

We look forward to sharing further updates as DITOCO2030 continues to advance its role in shaping the future of nuclear innovation.



## Now published

WP5 ICARUS Initial State-of-the-Art: Link

WP7 L'OPERA Initial State-of-the-Art: Link

WP7 L'OPERA Representative conditions and identification of the key parameters

influencing the long-term behaviour of LL-ILW: Link

WP9 InCoManD Initial State-of-the-Art: Link

Selection process for the 2<sup>nd</sup> wave activities of EURAD-2: Terms of reference: Link



**Upcoming events** 

#### AUGUST

27-29: ANCHORS Training course

#### SEPTEMBER

04: <u>Lunch&Learn – Pilot Project – a</u>
<u>joint European approach towards</u>
radioactive waste

09-11: EURAD-2 Annual event n°1

15-19: IAEA General conference 2025

17-19: SafeND 2025

21-26: Migration conference

#### OCTOBER

07-10: NEA IDKM Symposium

08-09: Workshop GammaAI 2025

22: <u>Lunch&Learn – Beishan URL</u>

developments

# eurad 2 Newsletter 3



#### We are out there









Erika Holt • 1er

Customer Account Lead, PhD, Principal Scientist within the nuclear energy sector 3 cem . (1)

Today I represented EURAD-2 in Brussels to discuss with EU Member States and regulators at the ENSREG WG2 workshop on "Lessons learned and assessment of remaining challenges after 10 years of implementation of the Council Directive 2011/70/Euratom". We have many common issues on which we can hopefully move forward together on RD&D for safe radioactive waste management. Please be in touch if you want to learn more, or directly register to the EURAD-2 end user group for providing feedback to the partnership!

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mphos 21 RSK Group hosted this week at Barcelona a dedicated Workshop focused on Small Modular Reactors (#SMR) waste generation and management.

The Workshop was framed in the activities of WP #FORSAFF within the EURAD-2 project funded by the European Commission #EURATOM. FORSAFF (Waste Management for Small Modular Reactors and Future Fuels) objectives are to identify knowledge gaps and provide recommendations for future research regarding Small Modular / Advanced Modular Reactors (SMR/AMR) including waste generation, waste management, policy and regulatory requirements as well as stakeholder

This hybrid Workshop, with more than 40 participants from 19 different countries, provided a good framework for research entities, waste management organization technical support organizations and end-users to discuss the preliminary findings of the project. Amphos 21 colleagues, Andrea Perri, Irene Canals Albiol, Jesus S. Martinez and David García Cobos participated actively in the different sessions.

Many thanks to all participants for the fruitful discussions!

#### #science #nuclear #research

Afficher la traduction







Fisicoquímica de Actínidos y Productos de Fisión (FAPF CIE... 2 mois • 🕲

⚠ We have a completely different Easter time, starting today the #EXAFS. experiment at the BM20- ROBL #HZDR beamline at the ESRF - The European Synchrotron in Grenoble, France!! Great thanks for accepting our experiment!!

🔯 Carla Soto Ruiz, Ursula Alonso de los Rios and Tiziana Missana from Fisicoquímica de Actínidos y Productos de Fisión (FAPF CIEMAT) participate to the onsite measurements.

The experiment belongs to Carla Soto Ruiz PhD on "Radionuclide sorption on canisters' corrosion products" #nuclear #safety Research included in EURAD-2!

Looking forward to see the results! Departamento de Fisión Nuclear - CIEMAT

Afficher la traduction





4 republications

