

EURAD-2 Core Group Communication on Progress, July 2023

This communication note is to document information on the progress towards EURAD-2 partnership. This communication note is distributed to all partners of EURAD and PREDIS, and is public (on the projects' web pages). The previous communications can be found on both [EURAD](#) and [PREDIS](#) websites, that includes :

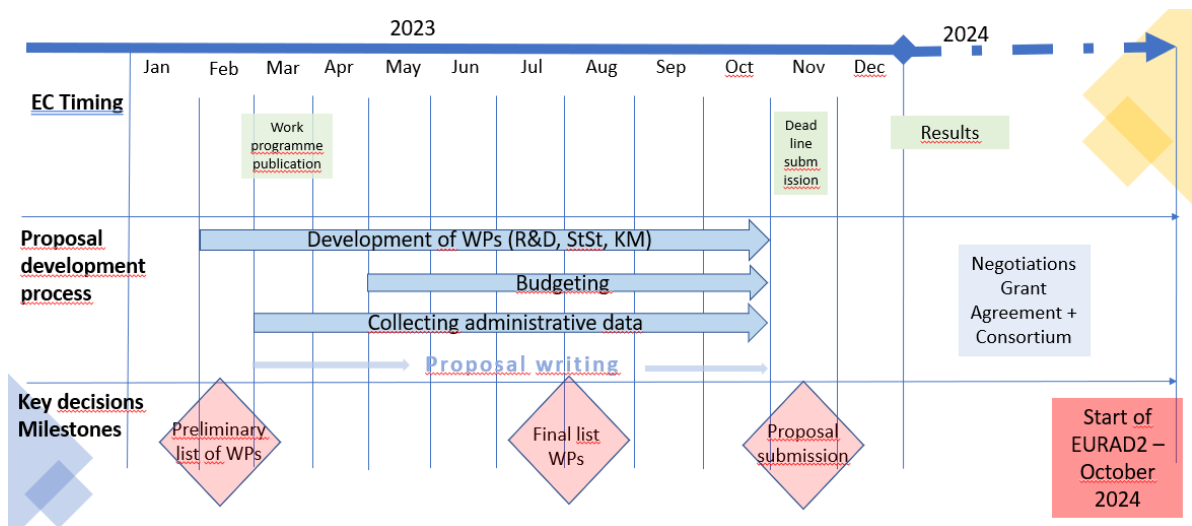
- [October 2022 communication](#)
- [December 2022 communication](#)
- [May 2023 communication](#)
- [Slides public webinar #1, January 2023](#)
- [Slides Focus Funnel, March 2023](#)
- [Slides public webinar #2, July 2023](#)

This communication is prepared by the EURAD-2 Core Group, whose members provide recommendations to the Colleges. The Colleges remain the sole entities approving all decisions.

For clarity, the on-going EURAD programme (2019-2024) is referred as EURAD-1, to differentiate from the future EURAD-2 Programme (2024-2029).

Schedule overview

The figure below is a reminder of the general schedule for the preparation of the proposal, as presented in the January 2023 webinar and earlier Communications.



More detailed information on the steps and timing between July 2023 and the proposal submission readiness at the end of October 2023 is available in the guidance for Work Package (WP) Preparation Teams (Appendix 2, specific to Template #3 on WP descriptions).

Public webinar #2

The EURAD-2 Core Group organised a public webinar on July 11, 2023. The aim of this event was to share the latest progress on the development of the proposal, to give an overview of the future work on Knowledge Management as well as on the potential technical work packages.

The slides of the event, including short presentations of each work packages, are available on EURAD and PREDIS websites.

Prioritisation of WP Templates #2

Following webinar #2, the European Commission encouraged the Core Group to consider a worst-case scenario of a total EC contribution of 40 M€ for the full 5-year duration. Earlier assumptions were a total EC contribution of 60 M€ for the 5 years. Thus, the CG recommended to the Colleges a conservative approach to the budget allowed to allocate in Wave 1 (earlier recommended 29 M€ for R&D + StSt).

	Type of activity	Budget estimation (M €)	EC contribution (M €)	Duration (months)	Priority RE	Priority TSO	Priority WMO	Budgeting allowance RE	Budgeting allowance TSO	Budgeting allowance WMO
WP1 - Alternatives RWM Strategies	Strategic Study	2	2	50-60	Yellow	Yellow	Yellow	0,7	1,50	1,00
WP2 - Sustainability	Strategic Study	1	1	24	Yellow	Red	Green	0,7	0,00	1,00
WP3 - Waste Management for SMRs and future fuels	Strategic Study	1	1	18	Yellow	Green	Green	0,8	1,00	1,00
WP5 - Waste Characterisation	R&D	5	2,5	60	Yellow	Yellow	Yellow	2,2	2,50	2,00
WP6 - Treatment/Immobilisation	R&D	5	2,5	60	Yellow	Yellow	Yellow	2,1	2,50	1,50
WP7 - Long term performance	R&D	5	2,5	60	Yellow	Green	Yellow	2,1	2,50	1,50
WP8 - Graphite handling	Strategic Study	1	1	24	Yellow	Green	Red	0,5	1,00	0,00
WP9 - Spent fuel B	R&D	5	2,5	60	Green	Yellow	Green	2,5	2,50	2,50
WP11 - Containers / Canisters	R&D	5	2,5	60	Green	Yellow	Green	2,5	2,00	2,50
WP12 - Bentonite / Buffers / Backfills	R&D	8	4	60	Yellow	Yellow	Yellow	2,5	2,50	3,60
WP13 - HLW Repository optimisation including closure	Strategic Study	1,5	1,5	24	Yellow	Yellow	Green	0,6	1,00	1,50
WP14 - Climate change	Strategic Study	1,5	1,5	24	Yellow	Yellow	Green	0,8	1,00	1,50
WP15 - Radionuclides	R&D	5	2,5	60	Green	Green	Green	2,5	2,50	2,50
WP16 - LLW/ILW Disposal Optimisation	R&D	5	2,5	60	Green	Green	Green	2,5	2,50	2,50
WP17 - Digital Twins	Strategic Study	0,5	0,5	18	Green	Green	Green	0,5	0,50	0,50
WP18 - High-fidelity numerical simulations	R&D	4	2	48	Green	Red	Green	2	0,00	2,00
WP19 - Criticality safety	R&D	3,8	1,9	60	Yellow	Yellow	Green	1	1,00	1,90
WP20 - Thermodynamic database	Strategic Study	0,5	0,5	18	Green	Green	Red	0,5	0,50	0,00
WP21 - Natural analogues	R&D	5	2,5	60	Yellow	Yellow	Red	2	2,00	0,00
TOTAL		64,8	36,9					29	29	29

Figure 1 Compilation of Colleges feedback on EURAD-2 Template #2 proposal

After Template#2 submission, the Colleges' feedback of "green-yellow-red" evaluation (*green (yes budget and scope), yellow (yes with conditions), red (no for wave 1)* – see Figure 1) has led to the following result:

- 8 WPs that “pass” (more than two Colleges voted green = no changes) to Template #3 with the initial budget (see column AI).
 - WP3 – Waste Management for SMRs and future fuels
 - WP9 – Spent fuel
 - WP11 – Containers / canisters
 - WP15 – Radionuclides
 - WP16 – LLW/ILW Disposal Optimisation
 - WP17 – Digital Twins
 - WP18 – High-fidelity numerical simulations
 - WP20 – Thermodynamic database
 - Based on the resulting colour code, there were no WPs with “reject” (more than two Colleges voted red = out).
 - There remain 11 WPs that are “yellow” (= can continue but only with conditions for change) as average (some red-yellow-green mixes). 8 of these had no reds and continue as yellow:
 - WP1 – Alternatives RWM Strategies
 - WP5 – Waste Characterisation
 - WP6 – Treatment/Immobilisation
 - WP7 – Long-term performance
 - WP12 – Bentonite/Buffers/Backfills
 - WP13 – HLW Repository optimisation including closure
 - WP14 – Climate change
 - WP19 – Criticality safety
- 3 remaining WPs that had the lowest support based on the averaging of the Colleges’ feedback and the Core Group recommends these 3 WPs are not taken further to Template #3 at this stage for wave 1 funding:
- WP2 – Sustainability
 - WP8 – Graphite
 - WP21 – Natural analogues

For the “yellow” 8 WPs, the CG makes a recommendation to allocate an average budget based on the Colleges’ feedback.

Using this distribution, assuming 40 M€ EC total, results in an estimate for a 80% of the total EC budget for wave 1) of and a wave 2 reserve of 20% (8.1 M€ for all activities in wave 2). Of course, the CG would like to see the total EC budget increased, and supports the EC and the Beneficiaries (Member States) trying to convince the national representatives to get to a higher total amount for EURAD-2 to secure a greater second wave.

If in 2025-2026 the EC budget allocation is increased, it will allow greater allocation for wave 2.

The Core Group also recommended that all StSt WPs will have a prescribed duration of 24 months, with all key deliverables by Month 18 but the duration to 24 months to allow for 2nd periodic annual reporting and workshop attendance.

The 3 Colleges of RE, TSO and WMO have agreed to this recommendation and thus 16 WPs will be further developed now for wave 1 of EURAD-2 (see summary table next page).

	Type of activity	Budget estimation (M €)	EC contribution (M €)	Duration (months)	Final budgeting allowance	
WP1 - Alternatives RWM Strategies	Strategic Study	2	2	24	0,70	
WP2 - Sustainability	Strategic Study	1	1	24	0,00	
WP3 - Waste Management for SMRs and future fuels	Strategic Study	1	1	24	1,00	
WP5 - Waste Characterisation	R&D	5	2,5	60	2,20	
WP6 - Treatment/Immobilisation	R&D	5	2,5	60	2,00	
WP7 - Long term performance	R&D	5	2,5	60	2,00	
WP8 - Graphite handling	Strategic Study	1	1	24	0,00	
WP9 - Spent fuel B	R&D	5	2,5	60	2,50	
WP11 - Containers / Canisters	R&D	5	2,5	60	2,50	
WP12 - Bentonite / Buffers / Backfills	R&D	8	4	60	2,50	
WP13 - HLW Repository optimisation including closure	Strategic Study	1,5	1,5	24	1,00	
WP14 - Climate change	Strategic Study	1,5	1,5	24	1,00	
WP15 - Radionuclides	R&D	5	2,5	60	2,50	
WP16 - LLW/ILW Disposal Optimisation	R&D	5	2,5	60	2,50	
WP17 - Digital Twins	Strategic Study	0,5	0,5	24	0,50	
WP18 - High-fidelity numerical simulations	R&D	4	2	48	2,00	
WP19 - Criticality safety	R&D	3,8	1,9	60	1,30	
WP20 - Thermodynamic database	Strategic Study	0,5	0,5	24	0,50	
WP21 - Natural analogues	R&D	5	2,5	60	0,00	
TOTAL		64,8	36,9		26,7	

Development of the Work Packages

The Core Group has developed a Template #3 for the submission of selected work package (WP), which is the text that will be directly used for the Euratom proposal and become the work implementation plan to be approved at the first General Assembly at the start of the programme (October 2024). The WP Template #3 is to be completed by the WP Preparation Teams, soliciting input from the interested parties. This template might be subject to changes, especially after considering the input of the Knowledge Management Committee on the Task 2 and KPIs.

The feedback from the Colleges on Templates #2 will be shared with the WP Preparation Teams, in order to help them in the development of Templates #3.

As for Templates #2, each WP has a CG member who is identified as observer.

Depending on the status of the WP (green or yellow), this WP description Template #3 (available in the Appendix 1) must be sent from the WP Preparation Teams to the Core Group at different deadlines (see detailed schedule in Appendix 2).

For the “yellow” WPs (listed below) a first Core Group check will take place at the end of August, followed by a Colleges check (go/no go).

- WP1 – Alternatives RWM Strategies
- WP5 – Waste Characterisation
- WP6 – Treatment/Immobilisation
- WP7 – Long-term performance
- WP12 – Bentonite/Buffers/Backfills
- WP13 – HLW Repository optimisation including closure
- WP14 – Climate change
- WP19 – Criticality safety

Final version of Templates #3 will be submitted by 13 October for their integration in the official EC proposal.

The Core Group has provided guidance for WP Preparation Teams, to help them in the development process and to ensure a certain consistency between the different WPs (see Appendix 2) and held a meeting with all WP Preparation Teams on July 13 to answer their questions.

Knowledge Management Committee (KMC)

The Knowledge Management Committee (composed of 8 Colleges' representatives and 1 coordinator) presented its latest progress during the public webinar #2 (11 July).

Based on a SWOT analysis, the KMC identified which elements of the KM Programme should remain and/or be improved upon in EURAD-2 KM programme. All those information are gathered in the slides from the public webinar #2 (KMC presentation) available on EURAD and PREDIS websites.

The KMC is also planning to involve the community via a webinar on 31 August 2023. The registration link will be available on EURAD and PREDIS webpages at least 2 weeks before the event.

Any questions on the KM Programme can be directed to the KMC lead persons:

EC	Paul Carbol (EC-JRC)	paul.carbol@ec.europa.eu
Waste Management Organisations, WMO college - via IGD-TP	Lead: Alexandru Tatomir (BGE) Support: Anders Sjöland (SKB)	Alexandru.Tatomir@bge.de anders.sjoland@skb.se
Technical Support Organisation, TSO college - via SITEX. Network; which also includes civil society and regulators views	Lead: Jitka Mikšová (SURO) Support: Christophe Debayle (IRSN) and Kateryna Fuzik (SSTC NRS)	jitka.miksova@suro.cz christophe.debayle@irsn.fr kv_fuzik@sstc.ua
Research Entities, RE college - via EURADSCIENCE network; which also include supply chains and companies	Lead: Gunnar Buckau (KIT-PTKA) Support: Alba Valls (Amphos21) and Niels Belmans (SCK-CEN)	gunnar@buckau.se alba.valls@amphos21.com niels.belmans@sckcen.be

WP Preparation Teams

Anyone wishing to be involved in one of the WP listed below, should contact the following representatives.

	WP Preparation Team		
	TSO	WMO	RE
WP1 - Alternatives RWM Strategies	Matija.simon@eimv.si	marja.vuorio@covra.nl	Laure.PREVOT@egis-group.com
WP3 - Waste Management for SMRs and future fuels	Timothy.Schatz@vtt.fi	Virginie.wasselin@andra.fr	david.garcia@amphos21.com
WP5 - Waste Characterisation	b.janssen@nrg.eu	jlen@enresa.es	eros.mossini@polimi.it
WP6 - Treatment/Immobilisation	Maria.Oksa@vtt.fi	jlen@enresa.es	Helene.nonnet@cea.fr
WP7 - Long term performance	Maria.Oksa@vtt.fi	denise.ricard@andra.fr	Thierry.mennecart@sckcen.be
WP9 - Spent fuel B	nieves.rodriguez@ciemat.es	olivia.roth@skb.se	d.bosbach@fz-juelich.de
WP11 - Containers / Canisters	Janne.Pakarinen@vtt.fi	aurelien.debelle@andra.fr	a.cherkouk@hzdr.de holger.voelzke@bam.de
WP12 - Bentonite / Buffers / Backfills	nadia.mokni@irsn.fr christophe.debayle@irsn.fr	eric.simo@bge.de	xavier.pintado@mitta.fi
WP13 - HLW Repository optimisation including closure	valery.detilleux@belv.be	Philipp.herold@bge.de	svobodaj@fsv.cvut.cz
WP14 - Climate change	Veli-Matti.Pulkkanen@vtt.fi	frederic.ego@andra.fr	aina.bruno@amphos21.com
WP15 - Radionuclides	tiziana.missana@ciemat.es	jean-charles.robinet@andra.fr	marcus.altmaier@kit.edu
WP16 - LLW/ILW Disposal Optimisation	os_soloviov@sstc.ua	pierre.henocq@andra.fr	crina.bucur@nuclear.ro
WP17 - Digital Twins	baksay@tsenercon.hu	irina.gaus@nagra.ch	reka.szoke@ife.no
WP18 - High-fidelity numerical simulations	baksay@tsenercon.hu	enga@enresa.es	sergey.churakov@psi.ch
WP19 - Criticality safety	Robert.Kilger@grs.de	madalina.wittel@nagra.ch	tw@galson-sciences.co.uk
WP20 - Thermodynamic database	tiziana.missana@ciemat.es	s.brassinnes@nirond.be	xavier.gaona@kit.edu

FAQ

A list of Frequently Asked Questions (FAQ) is regularly updated (based on questions received by the Core Group by emails) and available on both [EURAD](#) and [PREDIS](#) websites.

Contact References

As noted in every Core Group communication, further and regular communications towards the Consortia are planned, so as to keep all EURAD and PREDIS partners and the wider community of interest updated on the status and offer opportunities to give inputs and feedback for critical milestones. We encourage all partners and other new potential EURAD-2 future partners to express your feedback via these channels:

	EURAD-1 College Leadership	EURAD-2 Core Group Members
Coordinator		Louise Théodon (ANDRA – France), mailto:louise.theodon@andra.fr
Waste Management Organisations, WMO college - via IGD-TP	secretariat@igdtp.eu Johanna Hansen (General Secretary) Johanna.Hansen@Posiva.fi	Ingo Blechschmidt (NAGRA – Switzerland), ingo.blechschmidt@nagra.ch Astrid Göbel (BGE – Germany), Astrid.Goebel@bge.de
Research Entities, RE college - via EURAD-Science network; which also includes supply chains and companies	Christophe Bruggeman euradscience@sckcen.be	Christophe Bruggeman (SCK CEN – Belgium), christophe.bruggeman@sckcen.be Lara Duro (AMPHOS 21 – Spain), lara.duro@amphos21.com
Technical Support Organizations, TSO college - via SITEX.Network; which also includes civil society and regulator views	Valéry Dettleux valery.dettleux@belv.be	Erika Holt (VTT – Finland), erika.holt@vtt.fi Nadja Železnik (EIMV – Slovenia), Nadja.Zeleznik@eimv.si

Appendix 1 – Draft Template #3

By submitting this proposal, you agree to the collection, storage and protection of your personal data submitted through this form. Information collected on this form is used solely for the purpose of preparing the EURAD-2 Programme. Information provided will only be accessible on a need-to-know basis. You can access your personal data, rectify it, request its deletion or exercise your right to limit the processing of your data at the following address dpd@andra.fr.

Short Acronym and full Title			
Type of activity	<input type="checkbox"/> R&D <input type="checkbox"/> Strategic Study	Duration of the WP (in months)	
WP Leader	<i>Organisation, Name, country, College, email address</i>		
Links with EURAD SRA / Roadmap Themes (if multiple choices, indicate the primary link in bold – maximum 3)	<input type="checkbox"/> Programme Management (Theme 1) <input type="checkbox"/> Pre-disposal (Theme 2) <input type="checkbox"/> Engineered Barrier Systems (Theme 3) <input type="checkbox"/> Geoscience (Theme 4) <input type="checkbox"/> Disposal facility design and optimisation (Theme 5) <input type="checkbox"/> Siting and Licensing (Theme 6) <input type="checkbox"/> Safety Case (Theme 7)		
Links with EURAD SRA topics (if multiple choices, indicate the primary link in bold – maximum 3)	<i>Please indicate the corresponding Domains (number) and Description of R&D, StSt or KM needs (second column of SRA)</i> Example: <ul style="list-style-type: none"> - 1.5.1 – Assess possible strategies for SMR - 3.1.1 – Optimisation, safety and risk assessment 		
SRA drivers (maximum 3)	<input type="checkbox"/> Implementation Safety	<input type="checkbox"/> Tailored Solutions	<input type="checkbox"/> Scientific Insight
	<input type="checkbox"/> Innovation for Optimisation	<input type="checkbox"/> Societal Engagement	<input type="checkbox"/> Knowledge Management
Objective (What) – 1 sentence			
Major achievements expected by end of Year 2 (Go/No Assessment) ¹ (Maximum 5 bullets)	<ul style="list-style-type: none"> • 		

¹ EC budget being only allocated for the first 2 years, each work package progress will be reviewed at the end of Year 2, to assess its continuation based on the total budget that EURAD-2 will be granted.

Description of the WP

Justification: impact / innovation / added-value (Why) – bullet points or short paragraph (maximum quarter of a page)

Outcomes

List of expected outcomes linked to the identified SRA drivers (maximum quarter of a page)

Participants and general total effort (EC requested contribution + co-funding)

Short name of participant	<i>Acronym²</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>
Person/months per participant										
Short name of participant	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>	<i>Acronym</i>
Person/months per participant										

²Please refer to the established acronym list. For Beneficiaries: add the official acronym corresponding to the PIC number (EC). For Affiliated Entity, please indicate: Acronym of the Beneficiary (Acronym of the Affiliated Entity) – example ANDRA (BRGM)

Tasks' breakdown of the WP

	Task title	Task leaders	
		Main Task leader	Co Leader if applicable
1	Management/coordination of the WP	<i>Name, Organisation, type, country</i>	<i>Name, Organisation, type, country</i>
2	Knowledge Management		
3			
4			
5			
n			

Description of work per task and subtask

Activity No	Activity Title	Lead participant	Total pm	Start Month	End month
		Acronym	XX	XX	XX
Task 1	Management / Coordination of the WP	Acronym	XX	1	XX
	<p>The S/T coordination will be performed by the WP Leader [Acronym] in collaboration with the Task Leaders [Acronym], [Acronym], constituting the WP Board.</p> <p>The main goals of Task 1 are the overall management of the WP including scientific-technical coordination, monitoring and reviewing the WP progress and outputs against the work plan and dissemination / outreach of the results. In this respect there are significant interactions with all other tasks of the WP and other WPs.</p>				
Subtask 1.1	S/T coordination				
	<p>The WP Board will ensure that the WP is progressing according to the agreed planning, milestones and deliverables. The WP Leader is responsible to report the work progress, the WP deliverables and any modifications of the WP work plan to the PMO. This will be done in close consultation with the WP Board. The WP Board will also be responsible to communicate with other WPs stakeholders in EURAD and beyond.</p> <p>In order to fulfil these aims, the WP Board will have regular meetings, which will be captured in minutes to be distributed to WP partners and the PMO representative.</p>				
Subtask 1.2	Dissemination / outreach / impact				

	<p>The WP Board will also organise the WP Annual Meetings, which will be arranged with all partners to allow for information exchange, monitoring of work progress, dissemination of results, and interaction with End Users and other stakeholders. Dedicated technical meetings on Task level will be organised as well.</p> <p>The WP Board will contribute to EURAD-2 newsletters, website by providing at least bi-annual news.</p> <p>A synthesis document will be produced during the last year of the WP implementation. It will analyse and integrate the WP results into a comprehensive report. An abstract for a wider audience will also be produced.</p>				
Subtask 1.3	Quality control				
	<p>The WP Board will be responsible for addressing quality control of the work package implementation, specifically for the review of milestones and deliverables, as well as assessing how the WP is achieving the KPI targets. The aim is to ensure the conformity to the Grant Agreement and high-quality outcomes that meet the objectives of the WP and overall programme. This task also covers implementing data management and open access requirements and addresses risk management of the WP, for task actions, budget, schedule and outcomes.</p>				
Task 2	Knowledge Management	Full name	XX	1	XX
	<p>The main goal of Task 2 is to make knowledge gathered within this WP accessible and applicable for the EURAD-2 KM system.</p>				
Subtask 2.1	Development of documentation materials (SotA, gap analysis, white/green position papers)				
	<p>An initial version of the SotA will be prepared at the beginning of the WP (6 months after the launch).</p> <p>In the final stage of the WP, the SotA report will be updated integrating the key findings of the R&D tasks in this WP and relevant findings from other WPs.</p> <p>A position paper will be prepared at the beginning of the WP (6 months after the launch), that will gather a consensus view that stimulate discussion on ...</p> <p>The knowledge consolidated or generated through know-how sharing and discussions of common challenging issues will constitute a valuable input to EURAD KM activities.</p>				
Subtask 2.2	Training materials				
	<p>In close cooperation with KM WP, specific training materials on topics addressed by name of the WP, will be prepared.</p> <p>The WP will organise at least one user-needs driven training during the course of implementation.</p>				

Task n	Title of the task	Full name	XX	XX	XX
	Objectives				
Subtask n.1	Title of the subtask				
	<i>Description of subtask work and role of partner max 1/2 page per subtask description</i> <i>For each action indicate into bracket the organisations that will contribute to the implementation</i>				
Subtask n.2	Title of the subtask				
	<i>Description of subtask work and role of partner max 1/2 page per subtask description</i> <i>For each action indicate into bracket the organisations that will contribute to the implementation</i>				

Deliverables (max 6) and Milestones (max 10)³

Number	Deliverable name	Short description	Lead participant	Type ⁴	Dissemination level ⁵	Delivery date (in months)
1						
2						
3						
4						
5						
6	Outcome/impacts report to Member States and End Users					

³ Prescribed deliverables must be added in this table: State-of-the-Art (initial and final) for R&D WPs / white or green paper for the Strategic Study WPs

⁴ R : Report / DEM : demonstrator, pilot, prototype / DEC: websites, patents filing, press&media, videos / DATA: data sets, microdata / OTHER: software, technical diagram, algorithms, models

⁵ PU : public, fully open / SEN : sensitive, limited under the conditions of the Grant Agreement / CON: confidential – to be justified

Number	Milestone name	Lead participant	Delivery date (in months)	Means of verification ⁶
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Key Performance Indicators

Keep only those for which the WP is concerned and define the target.

EURATOM Call objective	SRA Drivers	KPI at the WP level	Target (number)
Support the long-term passive safety features of radioactive waste disposal facilities/repositories;	Implementation Safety	(To be defined by Core Group in September)	
Help build or maintain public confidence and awareness in radioactive waste management;	Societal Engagement	Number of news / Post / Blog per year	
		Number of events per year where public or civil society is invited to participate	
		Number of non-scientific issues published	
	Innovation for Optimisation	Number of pre-patent notifications	
		Change of TRL	

⁶ Minutes of meeting, field survey complete, data validated, ...

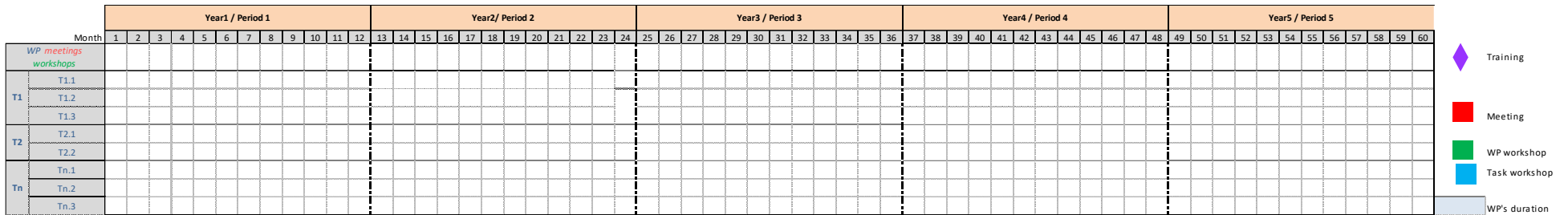
Support radioactive waste management innovation and optimisation;		Improvement of a process or a method statement (written document)	
Contribute to addressing scientific/technical challenges;	Scientific Insight	Number of State-of-the-Arts published	
		Number of open access publications accepted	
		Number of presentation at scientific conferences done	
Contribute to addressing the evolving regulatory concerns;	Implementation Safety	Number of events per year where regulators are invited to participate	
		Number of news/publications shared with regulators forums (WENRA, SITEX, ETSO)	
Boost knowledge transfer to early-stage programmes;	Tailored solutions	Number of KM documents produced	
		Number of IAEA listed early stage programmes participants registered to events / workshops / webinars	
Encourage the efficient use of R&D resources at EU level;	Knowledge Management	Number of interactions between WPs (sharing of samples ..)	
		Number of mobility actions (undertake internships/exchange programmes)	
Encourage a better transfer of knowledge across generations of experts and between experts from different fields of expertise.	Knowledge Management	Number of PhD/postdocs/ students	
		Number of trainings lectures provided	
		Number of events where non-EURAD-2 students can participate	
		Number of mobility actions (visits, trainings courses, conferences)	
		Number of networking events allowing cross-disciplinary sharing	

Gantt chart of WP

Add the Gantt chart of the WP – using the excel file provided.

Tasks are denoted 'TX' and subtasks are denoted as 'TX.X'. The timing of deliverables is included using notation of 'DX.X'.

Demonstrate that the project can be safely managed and that sufficient flexibility is embedded to allow the inevitable delays to not hinder the WP progress or the end of the programme. Any deliverable needed as input to the final reporting of EURAD-2 needs to be available 4 months prior to the end date (i.e at Month 57).



Foreseen links with the other work packages

WPs	Provide a short text describing the operational link between other WP (if applicable), this text should be validated by the 2 WP teams <i>Please be concrete/specific, this table should clearly describe the operation links between WPs: inputs, outputs, joint meetings, etc. Please ensure that the other WP has provided equivalent information.</i>

Foreseen links with previous/ongoing and national/European projects

Name of the project	Provide a short text describing the link with the other project <i>Please be concrete/specific.</i>

Risks

Description of the risk	Level of likelihood ⁷	Level of severity ⁸	Proposed risk-mitigation measures

Participants and End Users

Describe briefly the WP consortium.

Explain how you will engage with end users for impact of the project.

Explain the participation of Associated Partners (international partners, not receiving any EU funding)

Explain how you consider gender equality and indicate numbers of women/men involved in the WP.

Show how the WP will bring together different categories of actors and address the needs of the different Member States, irrespective of the state of advancement in their RWM programme.

Max quarter of a page.

Example:

The WP consists of approximately XX% effort by WMOs, XX% by REs, XX% by TSOs. The WP includes XX partners from XX countries, which includes XXX from a diversity of programme needs such as XXX.

The intended gender balance targets approximately XX% women, including XX in WP leadership roles.

The WP plans to engage with end users by XXXX (and on topics/needs XXX). The WP is addressing the MS needs by XXXX.

We do/do not anticipate Associated Partners (explain).

⁷ low/medium/high – the likelihood is the estimated probability that the risk will materialise even after taking account of the mitigating measures put in place

⁸ low/medium/high – the relative seriousness of the risk and the significance of its effect

Appendix 2 – Guidance for WP Preparation Teams

EURAD-2 Partnership

Template #3 (July 2023), Public Document

Role

The WP Preparation Teams (WPT) are in charge of developing the EURAD-2 work packages (WPs) that are carried over from Template #1 (ideas, February 2022) to Template #2 and then Template #3 (summer 2023). In this capacity, WPT members define the WP objectives, scope, budget, schedule, consortium partners and quality (KPIs, milestones, deliverables), based on instructions they will receive from the EURAD-2 Core Group and on the interests from the different Colleges.

WP Preparation Teams are **representatives of their College**, therefore they engage themselves to regularly communicate with their respective College during the process, as well as with the potential WP partners. Each member should commit and guarantee a high-level of engagement throughout the whole process. The WPT members are a voluntary role, not funded by the EC or the existing projects. The WPT has a role to play from May through November 2023, when the EURAD-2 partnership is submitted to the EC.

Guidelines for Template #3

All statements given in the previous guidance for WP Preparation Team members (issued in May) are still valid for the preparation of Template #3. We invite WP Preparation Teams to consider both documents when developing the Template #3.

By submitting a Template #3, WP Preparation Teams contribute directly to the official proposal that will be submitted by EURAD-2 Core Group in November 2023. Andra, as the Coordinator will directly use the information provided in Template #3 to fill in the EURATOM application on behalf of the WP.

This document will then become the guiding work plan for the WP implementation (Part A of the Grant Agreement) and will be the reference document for the maximum 5 years implementation. Any substantial modification to this document will need to be approved by the General Assembly and will require an Amendment.

Development of the work packages

❖ Timing and process for Template #3

Date	Description	Responsible
07/07/2023	Notification of WPs pitching for public webinar #2	CG
11/07/2023	Pitching of the WP during public webinar #2	WP Preparation Teams
13/07/2023	Meeting CG/WP Preparation Teams to guide WPT on how to complete Template #3	CG
13/07/2023	Issue of Template #3 and guidance	CG

13/07/2023	Provide to CG coordinator financial and administrative data	Institutes
17/07/2023	Sharing with WP Preparation Teams the collected financial data to facilitate the budgeting exercise	CG
28/08/2023	Final budget sent to CG via CG Coordinator and table with designated WP and Task leaders	WP Preparation Teams

The deadline to submit the draft Template #3 depends on the status of the WP after Colleges' prioritization in July, and is explained below:

	Submission draft Template #3	Core Group check / feedback	Colleges' check (go/no go)
WPs with 2 or 3 greens	20 September	22 September	N/A
WPs with less than 2 greens	28 August	30 August	7 September

The draft Template #3, notwithstanding the deadline, must be sent to the Core Group (CG), via the CG coordinator (louise.theodon@andra.fr). To facilitate the process, the email subject line of email should state: "EURAD-2 WP Template #3_ **Acronym of the WP**".

Date	Description	Responsible
08/09/2023	Based on the Colleges' feedback, final budget sent to CG	WP Preparation Teams
13/10/2023	Submission of final Template #3 to CG via CG Coordinator	WP Preparation Teams
16/10/2023	Final check readiness	CG

Proposals that do not respect the Template and/or the deadline cannot be considered for the submission of EURAD-2 proposal.

Guidelines

The following guidelines aim to help the WP Preparation Teams to develop their work package:

❖ Scope

The completed WP Description Template#3 (pages 2 to 5 of Template #3) should be **15 pages max**, building on Templates #1 and #2 proposals. A minimum of 5 pages is requested to ensure that enough details are provided.

❖ Description of tasks

The Task 1 (Management/coordination of the WP) and 2 (Knowledge Management) (and their subtasks) are mandatory for each R&D and Strategic Study WP. Therefore, they (or their content) cannot be deleted. It is up to each WP Preparation Team to define if they want to add other subtask in those tasks.

Task 2 on Knowledge Management might be modified based on the feedback of the Knowledge Management Committee. The information will be provided before end of July.

❖ Budget

Each WP should provide in Appendix to Template #3 its full budget (EC requested contribution + co-funding). To this purpose, the WP Preparation Team must use the Excel sheet (budget per organization and per task).

EURAD-2 programme is a co-funded partnership. This implies that every organisation intending to participate, agrees to provide co-funding to the action. Based on the EURATOM Work Programme, R&D WPs are financed at 50 % when Strategic Studies are financed at 100 %.

The overall budget must take into account a sufficient budget dedicated to the writing of the update of the SoTA document as it can be time and money-consuming but are a main deliverable of EURAD-2.

For Strategic Studies, the budget cannot include the preparation of the second wave proposals.

Associated Partners costs (i.e UK, Switzerland, Norway) should not be included in the budget. They will have to report only a general assumption of the funding they will provide to the Programme.

▪ Travels

The costs for travels should apply the following flat rate (per role, size and duration of the WP).

Size of the WP (EC contribution)	Duration of the WP (months)	Work Package Leader	Task Leader	Involvement in 1 technical task	Involvement in 2 technical tasks	Involvement in 3 or + technical tasks
2,5 M €	60	12 000 €	6 000 €	6 000 €	8 000 €	10 000 €
1M€ - 2,2M€	48/60	9 600 €	4 800 €	4 800 €	6 400 €	8 000 €
1 M €	24	6 000 €	3 000 €	3 000 €	4 000 €	5 000 €
<1 M €	24	3 000 €	1 500 €	1 500 €	2 000 €	2 500 €

This table assumes a flat rate of 1 200 € per travel per person for a standard 2/3-day trip in Europe.

It is foreseen that each year the Programme Management Office will organize an annual event (open to the whole Consortium), where WP leaders and Tasks leaders are required to attend; and that each WP is organizing a specific face-to-face event (can be coupled to another event).

- WP leader

A baseline portion of the WP leaders' effort for managing the WP (subtask 1.1) will be financed at 100 %. For that matter, such costs (as Person-months of time effort) will be integrated in WP1 PMO, as portion % of the WP budget depending on size/complexity. Therefore, this cost should not be budgeted in the WP budget.

For a R&D WP this will be limited to 3 pm and 1,5 pm for a Strategic Study.

It is reminded that Task 1 should not represent more than 10 % of the total budget of the WP

- ❖ **Deliverables**

It is reminded that the Core Group has prescribed some deliverables, those need to be included in the table (see below extract from previous guidelines):

"Each RD&D WP needs to plan at least a SotA report 6 months after the launching of the WP and an update of the SotA at the end of the programme.

The Core Group plans that certain deliverables are prescribed per WP:

- an outcome/impacts report to Member States and End Users for all WPs
- a State-of-the-Art report (initial and final) for R&D WPs.
- a white or green paper for the Strategic Study WPs
 - Green paper (= position paper), published as a consensus view from the 3 Colleges that stimulate discussion on topics that are of interest for the European Union; they typically contain proposals that serve as the basis for a debate or consultation process.
 - White paper (=second wave WPs description), documents containing proposals for action in a specific area. In some cases, they follow on from a green paper published to launch a consultation process. For WPs targeting a second wave proposal (continuation), it is mandatory to have the final deliverable between Month 12 and Month 18, to be able to assess the need for continuation without jeopardizing the development of the second wave. " A white paper is a consensus view on what actions are needed based on a gap analysis, and not the writing of a new proposal (see comment in budget section about second wave proposals).

A maximum of 6 deliverables, including the prescribed one is authorized per work package.

- ❖ **Milestones**

EC milestones are limited to 10 maximum per workpackage. They can be memos, databases, minutes of meetings. Contrary to deliverables, milestones can be limited to one task.

- ❖ **Key Performance Indicators**

The Key Performance Indicators (KPI) are built on the EURATOM Work Programme objectives and Strategic Research Agenda drivers. The WP Preparation Teams should select the Key Performance Indicators which are relevant for their WP and define a target. For example, if a WP has selected in the first page the driver "Societal Engagement" it must select at least 1 KPI related to this driver.

If the WP Preparation Team wishes to add a new KPI, this can be added to the Template #3 and this should be first assessed by the Core Group in September.

❖ Description of the WP Consortium

This section differs from the EC Part B table 4 where the description of each legal entity and third parties involved in the programme is requested. Please note that Table 4 will be collected per organisations and per WPs, by the Coordinator.

What is expected in this section, is a short description of how complementary the selected partners are, how they are bringing the necessary expertise. It should also explain how gender equality is considered (number of women/men involved in the WP), the participation of Associated Partners (if any) and End-Users.

❖ WP Preparation Teams checklist

Please note that items in bold are required, whereas other are suggested steps to help the WP Preparation Teams:

- If not previously done, consider where to establish a common cloud-based file sharing platform for the preparation of the WP document (please note that Projectplace cannot be used as we have a restricted number of licenses that do not cover all interested parties to EURAD-2)
- **Collect, document and regularly update a list of interested parties**
- **Reach out to the 3 Colleges, Template #3 must be a collective work approved by the Colleges**
- Consider hosting a webinar of interested parties to facilitate discussions on Template #3 draft content.
- **Submit draft Template #3 to Core Group (louise.theodon@andra.fr) by the deadlines (28 August for “yellow” WPs and 20 September for “green” WPs).**

Appendix 1 - List of Acronym⁹

Acronym	Legal name	Country
AGES	AUSTRIAN AGENCY FOR HEALTH AND FOOD SAFETY	AT
AMBERG	Amberg Infraestructuras S.A.	ES
AMPHOS 21	AMPHOS 21 CONSULTING SL	ES
ANDRA	AGENCE NATIONALE POUR LA GESTION DES DECHETS RADIOACTIFS	FR
ANN	Ansaldo Nucleare SPA	IT
ARAO	ARAO-AGENCIJA ZA RADIOAKTIVNE ODPADKE LJUBLJANA ZAVOD	SI
BAM	BUNDESANSTALT FUER MATERIALFORSCHUNG UND -PRUEFUNG	DE
BEL V	BEL V	BE
BGE	BUNDES-GESELLSCHAFT FUR ENDLAGERUNGBH (BGE)	DE
BGR	BUNDESANSTALT FUER GEOWISSENSCHAFTEN UND ROHSTOFFE	DE
BRGM	BUREAU DE RECHERCHES GEOLOGIQUES ET MINIERES	FR
CAEN	COSTRUZIONI APPARECCHIATURE ELETTRONICHE NUCLEARI CAEN SPA	IT
CEA	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	FR
CEPN	CENTRE D'ETUDE SUR L'EVALUATION DE LA PROTECTION DANS LE DOMAINE NUCLEAIRE	FR
ChRDI	PUBLIC UNION CHORNOBYL RESEARCH AND DEVELOPMENT INSTITUTE	UA
CIEMAT	CENTRO DE INVESTIGACIONES ENERGETICAS, MEDIOAMBIENTALES Y TECNOLOGICAS	ES
CIMNE	CENTRE INTERNACIONAL DE METODES NUMERIC EN ENGINYERIA	ES
CLAYTECH	CLAY TECHNOLOGY AB	SE
CNRS	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	FR
COVRA	CENTRALE ORGANISATIE VOOR RADIOACTIEF AFVAL NV	NL
CSIC	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES
CTH	Chalmers University of Technology	SE
CTU	CESKE VYSOKE UCENI TECHNICKE V PRAZE	CZ
CUNI	Charles University	CZ
CV REZ	CENTRUM VYZKUMU REZ SRO	CZ
Dekom	DANSK DEKOMMISSIONERING	DK
DMT	DMT GmbH & CO. KG	DE
ECL	Ecole Centrale de Lille	FR
EDF	ELECTRICITE DE FRANCE	FR
EEAE	ELLINIKI EPITROPI ATOMIKIS ENERGEIAS	EL
EGIS Geoscience	Egis Structures et Environnement	FR
EGIS Nuclear	Egis Industries	FR
EIMV	Elektroinstitut Milan Vidmar	SI
EMPA	EIDGENOSSISCHE MATERIALPRUFUNGS- UND FORSCHUNGSANSTALT	CH
ENEA	Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile	IT
ENERGORISK	Limited Liability Company Energorisk	UA
ENPC	Ecole Nationale des Ponts et Chaussées	FR
ENRESA	EMPRESA NACIONAL DE RESIDUOS RADIOACTIVOS S.A.	ES
EPFL	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	CH

⁹ This list will be updated if necessary

ETH	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH	CH
EURIDICE	European Underground Research Infrastructure for Disposal of Nuclear Waste in Clay Environment	BE
EUT	FUNDACIO EURECAT	ES
FTMC	VALSTYBINIS MOKSLINIŲ TYRIMU INSTITUTAS FIZINIŲ IR TECHNOLOGIJOS MOKSLŲ CENTRAS	LT
FSU-Jena	Friedrich-Schiller-University Jena	DE
FZJ	FORSCHUNGSZENTRUM JULICH GMBH	DE
GFZ	HELMHOLTZ ZENTRUM POTSDAM DEUTSCHESGEOFORSCHUNGSZENTRUM GFZ	DE
GRS	GESELLSCHAFT FÜR ANLAGEN UND REAKTORSICHERHEIT (GRS) gGmbH	DE
GSL	GALSON SCIENCES LIMITED	UK
GTK	GEOLOGIAN TUTKIMUSKESKUS	FI
HZDR	HELMHOLTZ-ZENTRUM DRESDEN-ROSSENDORF EV	DE
IAE	VALSTYBES IMONĖ IGNALINOS ATOMINĖ ELEKTRINĖ	LT
IC2MP	Institut de Chimie des Milieux et Matériaux de Poitiers - UMR 7285 CNRS	FR
IDOM	IDOM CONSULTING, ENGINEERING, ARCHITECTURE S.A.U.	ES
IFE	Institutt for Energiteknikk	NO
IFIC	Instituto de Física Corpuscular	ES
IFIN-HH	Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering	RO
IGN	Institute of Geonics of the AS CR, v.v.i.	CZ
IGN	Institute of Geonics of the Czech Academy of Sciences	CZ
IGNS	Institute of Environmental Geochemistry, National Academy of Science of Ukraine	UA
IMT Atlantique	INSTITUT MINES-TELECOM	FR
IMT/EMSE	INSTITUT MINES-TELECOM	FR
INCT	INSTYTUT CHEMII I TECHNIKI JADROWEJ	PL
INFN	Istituto Nazionale de Fisica Nucleare	IT
IPHC	The Hubert Curien pluridisciplinary Institute	FR
IRSN	INSTITUT DE RADIOPROTECTION ET DE SURETE NUCLEAIRE	FR
Isotoptech	sotoptech Nuklearis Technoloiai Es szolgaltato Reszvenytarsasag	HU
IST	INSTITUTO SUPERIOR TECNICO	PT
IST ID	IST-ID ASSOCIACAO DO INSTITUTO SUPERIOR TECNICO PARA A INVESTIGACAO E O DESENVOLVIMENTO	PT
Jacobs	Jacobs Clean Energy Limited	UK
JRC	JRC - JOINT RESEARCH CENTRE - EUROPEAN COMMISSION	BE
JSI	INSTITUT JOZEF STEFAN	SI
JYU	JYVASKYLAN YLIOPISTO	FI
KIPT	NATIONAL SCIENCE CENTER KHARKOV INSTITUTE OF PHYSICS AND TECHNOLOGY	UA
KIT	KARLSRUHER INSTITUT FUER TECHNOLOGIE	DE
KTH	Kungliga Tekniska högskolan	SE
LEI	LIETUVOS ENERGETIKOS INSTITUTAS	LT
MAGICS	Magics Instruments	BE
MINES ParisTech	ECOLE NATIONALE SUPERIEURE DES MINES DE PARIS	FR
MITTA	MITTA ENGINEERING OY	FI
MTA EK	ENERGIATUDOMANYI KUTATOKOZPONT	HU
NAAREA	NAAREA	FR
NAGRA	NATIONALE GENOSSENSCHAFT FUER DIE LAGERUNG RADIOAKTIVER ABFAELLE	CH
NCSR	NATIONAL CENTER FOR SCIENTIFIC RESEARCH "DEMOKRITOS"	EL
NES	NUCLEAR ENGINEERING SEIBERSDORF GMBH	AT
NFQ	Nfoque Advisory Services S.L.	ES
NJF	NARODNY JADROVY FOND	SK

NLS FGI	Maanmittauslaitos	FI
NNL	The UK's National Nuclear Laboratory	UK
NRG	NUCLEAR RESEARCH AND CONSULTANCY GROUP	NL
NTUA	NATIONAL TECHNICAL UNIVERSITY OF ATHENS	EL
NTW	NUCLEAR TRANSPARENCY WATCH	FR
Nucleco	Nucleco Societa Per L'Ecoingegneria	IT
NWS	NUCLEAR WASTE SERVICES	UK
ONDRAF/NIRAS	NATIONALE INSTELLING VOOR RADIOACTIEF AFVAL EN VERRIJKTE SPLIJSTOFFEN	BE
Orano	ORANO CYCLE	FR
PEL	PREUSSENELEKTRA GMBH	DE
Polimi	Politecnico di Milano	IT
Polito	Politecnico di Torino	IT
POSIVA	POSIVA OY	FI
PSI	PAUL SCHERRER INSTITUT	CH
PURAM	RADIOAKTIV HULLADEKOKAT KEZELO KOZHASZNU NONPROFIT KORLATOLT FELELOSSEGU TARSASAG	HU
RATEN	REGIA AUTONOMA TEHNOLOGII PENTRU ENERGIA NUCLEARA - RATEN	RO
RPTU	Rheinland-Pfälzische Technische Universität	DE
SCK•CEN	STUDIECENTRUM VOOR KERNENERGIE / CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE	BE
SIIGNASU	INSTITUTE OF ENVIRONMENTAL GEOCHEMISTRY OF THE NATIONAL ACADEMY OF SCIENCES OF UKRAINE	UA
SKB	SVENSK KARNBRANSLEHANTERING AKTIEBOLAG	SE
SOGIN	Società Gestione Impianti Nuclear	IT
SORC	RADIOOKOLOGIAI TISZTASAGERT TARSADALMI SZERVEZET	HU
SSTC NRS	STATE ENTERPRISE "STATE SCIENTIFIC AND TECHNICAL CENTER FOR NUCLEAR AND RADIATION SAFETY"	UA
STUBA	SLOVENSKA TECHNICKA UNIVERZITA V BRATISLAVE	SK
SÚRAO	Radioactive Waste Repository Authority	CZ
SURO	STATNI USTAV RADIACNI OCHRANY v.v.i.	CZ
TNO	NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK TNO	NL
Tractebel	Tractebel Engineering S.A	BE
TS Enercon	TS ENERCON MERNOKIRODA KFT	HU
TU Delft	TECHNISCHE UNIVERSITEIT DELFT	NL
TUBAF	Technische Universität Bergakademie Freiberg	DE
TUL	TECHNICKA UNIVERZITA V LIBERCI	CZ
TUS	TECHNICAL UNIVERSITY OF SOFIA	BG
TUT	TAMPEREEN KORKEAKOULUSAATIO SR	FI
UAM	UNIVERSIDAD AUTONOMA DE MADRID	ES
UBERN	UNIVERSITAET BERN	CH
UCLM	Universidad de Castilla-La Mancha	ES
UDC	Universidade Da Coruña	ES
UFZ	HELMHOLTZ-ZENTRUM FUR UMWELTFORSCHUNG GMBH - UFZ	DE
UGR	UNIVERSIDAD DE GRANADA	ES
UGrenoble	UNIVERSITE GRENOBLE ALPES	FR
UHelsinki	HELSINGIN YLIOPISTO	FI
UJean Monnet	UNIVERSITE JEAN MONNET SAINT-ETIENNE	FR
ÚJV	UJV REZ AS	CZ
UKRI	UNITED KINGDOM RESEARCH AND INNOVATION	UK
ULiège	UNIVERSITE DE LIEGE	BE
ULille	UNIVERSITE DE LILLE	FR

ULorraine	UNIVERSITE DE LORRAINE	FR
UMontpellier	UNIVERSITE DE MONTPELLIER	FR
Uni Clausthal	TECHNISCHE UNIVERSITAT CLAUSTHAL	DE
Uni Potsdam	UNIVERSITAET POTSDAM	DE
Uni Utrecht	Universiteit Utrecht	DE
UNice	UNIVERSITE COTE D'AZUR	FR
UNIMAN	THE UNIVERSITY OF MANCHESTER	UK
UniPisa	University of Pisa	IT
UOrléans	UNIVERSITE D'ORLEANS	FR
UPC	UNIVERSITAT POLITECNICA DE CATALUNYA	ES
UPM	UNIVERSIDAD POLITECNICA DE MADRID	ES
UPoitiers	UNIVERSITE DE POITIERS	FR
US	Universidad de Sevilla	ES
USFD	University of Sheffield	UK
UT3/LMDC	UNIVERSITE PAUL SABATIER TOULOUSE III	FR
UU	UPPSALA UNIVERSITET	SE
VTT	TEKNOLOGIAN TUTKIMUSKESKUS VTT OY	FI
VUJE	VUJE AS	SK
ZAG	ZAVOD ZA GRADBENISTVO SLOVENIJE	SI
ZHAW	ZURCHER HOCHSCHULE FUR ANGEWANDTE WISSENSCHAFTEN	CH