Deliverable 1.8:

Process for the extensive update of the EURAD SRA

Work Package 1

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Executive Summary

The Bureau of the EURAD General Assembly is responsible for preparing a plan and developing and agreeing on a process (described in this deliverable D1.8) for the future update of the EURAD SRA (D1.9) which will complete by January 2023 (Month 44). This plan will seek approval by the EURAD General Assembly in September 2021 (GA5). The EURAD SRA update will fundamentally serve two purposes, (i) to take stock and reflect on progress made since 2019 and capture emerging needs from across the Colleges (…what has changed, what is new…), and (ii) to prepare as an input for a potential future EC joint programme (...what should we work on together in the future beyond 2024+…).

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Glossary

EC	European Commission
EURAD	European Joint Programme on Radioactive Waste Programme
EURAD Science	International network of research entities established to unite the work of national research organisations on radioactive waste management from cradle to grave, and to drive scientific excellence in the field over the next decades to come.
GA	General Assembly
KM	Knowledge Management
PMO	Programme Management Office
PREDIS	Pre-disposal Management of Radioactive Waste
RD&D	Research, Development and Demonstration.
RE	Research Entity
SITEX	Sustainable Network of Independent Technical Expertise for Radioactive Waste Disposal.
SoK	State-of-Knowledge
SOTA	State-of-the-Art
SRA	Strategic Research Agenda
SS	Strategic Study
TSO	Technical Support Organisation
WMO	Waste Management Organisation
WP	Work Package
WPL	Work Package Leader

1. Introduction

1.1 Background of the SRA Update Process

The Bureau of the EURAD General Assembly is responsible for preparing a plan and developing and agreeing on a process (described in this D1.8) for the future update of the SRA (D1.9) which will complete by January 2023 (Month 44). This process was approved by the GA in September 2021 (GA5). The EURAD SRA update will fundamentally serve two purposes, (i) to take stock and reflect on progress made since 2019 and capture emerging needs from across the Colleges (…what has changed, what is new…), and (ii) to prepare as an input for a potential future EC joint programme (...what should we work on together in the future beyond 2024+…).

To develop the SRA Update Process (D1.8), the Bureau first established a (temporary) SRA update coordination team with a representative from each College. This team developed a letter containing key questions concerning the SRA update which was issued to EURAD Colleges in April 2021. Each College (for WMOs, TSO's and RE's) subsequently responded with answers to the key questions via position papers in June 2021, which were used as the basis for discussion at a workshop on 11th June 2021 where an overall consensus view on the SRA update process was established. A summary of the workshop with links to all papers and presentations is contained at the end of this paper. The remainder of this paper describes the SRA update process approved at the GA5.
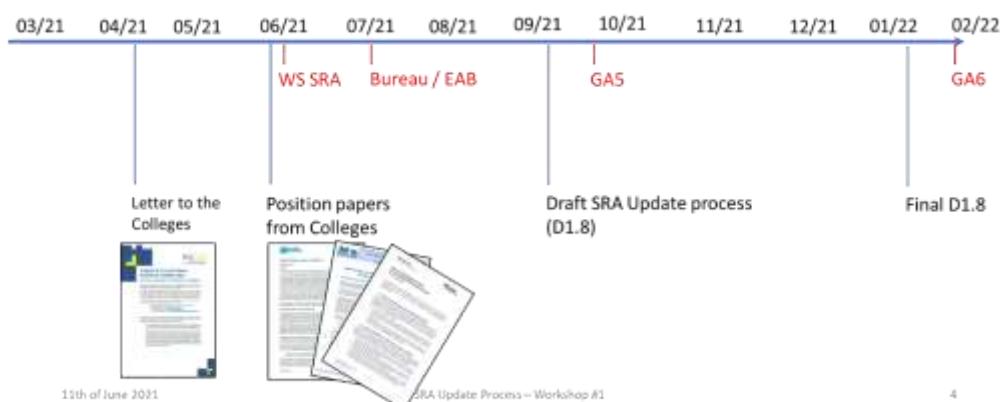

Figure 1: Steps and timeline to develop the SRA Update Process (D1.8)

1.2 Goals of the SRA Update Process

The overall goals of the SRA update process will be:

- To undertake a light update of the EURAD SRA (EURAD SRA, 2019) during the period 2022-2023, recognising the significant effort already made (by Colleges during JOPRAD and the Joint Programme establishment phase) to establish research, development and demonstration (RD&D), strategic studies (SS) and knowledge management (KM) activities of common interest with a ~10-year horizon.

- To align the structure of the SRA with the revised EURAD roadmap goals breakdown structure, ensuring a systematic view is taken of needed RD&D, SS and KM and considering interactions between themes.

- To be a standalone document, whilst avoiding duplication with the EURAD Roadmap and Implementation Plan.

- To capture the outputs (of priorities) and learning established by the EURAD KM and SS Work Packages.

- To make the existing SRA more useful for future definition of work packages by improving the way RD&D, SS and KM needs are described, specifically making the SRA more focused on the 'what' we could do and 'why', e.g., explaining better the different drivers via a new classification scheme for RD&D, SS and KM.

- To identify new or emerging SRA needs that are suitable for joint programming (i.e., activities of common interest between different Colleges which target the EURAD vision). These activities may emerge from each of the revised College SRAs or the PREDIS project's SRA (which aligns with Theme 2 of the EURAD SRA)

- To network between the different Colleges of EURAD and thus benefit from the multi-actor dimension of EURAD.

1.3 Scope of the SRA Update Process

The scope will remain consistent with the EURAD SRA 2019, defined as: scientific and technical activities on radioactive waste management from cradle to grave (excluding dismantling and decommissioning of nuclear facilities):

- Radioactive waste characterisation and processing (including treatment, conditioning and packaging);
- Interim storage and transport of radioactive waste; and
- Disposal solutions – mainly geological disposal of spent fuel, high-level waste (HLW) and long-lived intermediate level waste (ILW).

The scope of the update will consider the following major inputs:

- The 2020 IGD-TP SRA.
- The SITEX and EURAD Science networks have both indicated their intention to update their SRAs in 2021 as an input to the EURAD SRA update process. The SITEX SRA will include contributions from Civil Society.
- The EC PREDIS project (aligns with SRA Theme 2) has produced a first Baseline Predisposal SRA in August 2021[1].

Other potential inputs identified by EURAD Colleges:

- The EC SHARE project's SRA (due end of 2021) which will cover predisposal issues.

- Completed work to-date in EURAD Work Packages.

- Recent Euratom projects (e.g., MIND, THERAMIN, CHANCE, DISCO).

2. Ranking, Classification and Priorities

The EURAD SRA will not use a ranking or scoring system. The high, medium and low scoring which was used in the 2019 SRA will be replaced by a new classification scheme which will communicate the driver for each activity. Establishing and agreeing on the format for this new classification scheme and assigning existing SRA activities (from the 2019 SRA), or new/emerging activities (from College or PREDIS SRA's) will be a major effort foreseen as part of the SRA Update Process. The text included in Box 1 (next page) is an excerpt from the EURAD Vision Document[2] and will be a starting point for establishing a common list of drivers.

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[1] The 'Way Forward' Section of the PREDIS Baseline SRA (2021) states: "Future issues of this PREDIS SRA document will set out, discuss and further develop the research topics identified within the PREDIS project through ongoing engagement with the PREDIS partner and stakeholder organisations, and through linkage with the EURAD SRA due in 2024".   PREDIS also has Milestone 2.4 in February 2023 of the next version of their SRA, accounting for end user feedback.

[2] https://www.ejp-eurad.eu/sites/default/files/2019-12/EURAD%20Vision.pdf

Once all the RD&D, SS and KM activities are classified (according to the new scheme, to be developed and agreed between the Colleges), there will be no further processing of the SRA to establish a hierarchy or list of priorities. Rather, it is intended that those decisions on future joint programme work packages and the setting of priorities be made by the implementation plan(s) and governance scheme established by a potential future Joint Programme (i.e., by the actors involved and responsible in 2024+).

3.   Proposed SRA Update Process

The following major steps are foreseen as part of the SRA Update Process:
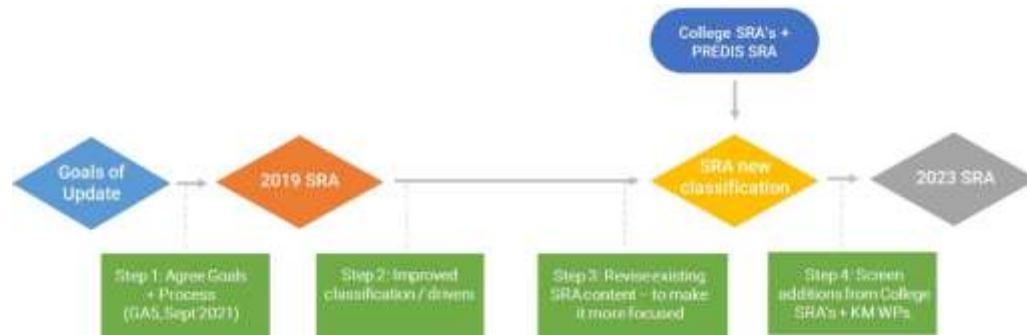
Figure 2: Four steps of the Proposed SRA Update Process 2022-2023

The four steps of the SRA update process are:

1. Step 1: Agree the goals and the process (as described by this deliverable, D1.8)
2. Step 2: Develop an improved classification scheme based on drivers for RD&D, SS and KM. This will replace the previously used High/Medium/Low prioritisation scheme.
3. Step 3: The contents of the existing SRA (EURAD SRA, 2019) will be re-organized into a format consistent with the EURAD Roadmap and each need will be better described to reflect its driver(s), i.e., why it is needed. KM needs from the EURAD SRA will be merged or taken over by the KM priorities established by each of the EURAD KM WPs and will also adopt the approach of clearly defining the driver for the KM activity.
4. Step 4: Screen-in additions from the College SRAs and the PREDIS SRA. New and emerging needs will be captured using the same categorisation scheme used in Step 3.

Box 1: How EURAD will complement the National Programmes (pg.7, EURAD Vision, Founding Documents)

EURAD is not intended to replace National Programmes, rather it complements the national efforts and enables effective use of resources by sharing RD&D efforts and by making existing knowledge easily available to end users. Member States' National Programmes are organised and funded independently, and their participation in EURAD is the responsibility, and at the sole discretion, of each national programme owner. By mandating organisations to participate, Member States demonstrate that the European Joint Programme has an EU-added value beyond their National Programme.

EURAD will generate and manage knowledge to support EU Member-States with their implementation of the Directive 2011/70/Euratom (Waste Directive), and more specifically with the development and implementation of their national RD&D programmes for the safe long-term management (including disposal) of their full range of different types of radioactive waste. More specifically, EURAD will:

1. Support compliance with European regulations – by supporting Member-States in implementing RD&D, developing skills and providing for transparency in order to develop solutions for their radioactive waste (see, Waste Directive articles 8, 10 and 12.1(f));
2. Support passive safety of radioactive waste – by contributing to the responsible and safe management of radioactive waste in Europe, including the safe start of operation of the first geological disposal facilities for high-level and long-lived radioactive waste / spent nuclear fuel as well as improvement, innovation and development of science and technology for the management and disposal of other radioactive waste categories;
3. Help to gain or maintain public confidence and awareness in radioactive waste management - by fostering transparency, credibility and scientific excellence;
4. Support radioactive waste management innovation and optimisation – by supporting the development of solutions for different waste streams and types and continuously improving and optimising waste management routes and disposal solutions, including identifying needs specific to small inventory programmes with their particular challenges with respect to access to critical mass of expertise in developing appropriate disposal options;
5. Contribute to addressing scientific/technical challenges and evolving regulatory concerns – by prioritising activities of common interest, and creating conditions for cross fertilization, interaction and mutual understanding between different Joint Programme contributors and participants;
6. Enhance knowledge transfer to early stage programmes – by providing an opportunity for less advanced programmes, and in particular those in an early stage of geological disposal programme implementation, to benefit from the cross-European fertilisation in radioactive waste management;
7. Foster efficient use of the RD&D resources at the EU level - by sharing and advancing existing knowledge, facilities and infrastructure rather than repeating and duplicating efforts; and
8. Foster a better transfer of knowledge across generations of experts – by helping to bridge the risk of shortage of the skilled, multidisciplinary human resources and critical infrastructure needed to develop, assess, license and operate RWM facilities, in view of the long lead-times and the intergenerational operational time-spans.

4. Governance and resources

The SRA update will start in early 2022 and will be led by the Bureau, with support and allocated resource from the PMO. Appropriate communications and engagement meetings with the three Colleges of EURAD and PREDIS will take place regularly and progress will be shared at each of the steps outlined above. All EURAD Colleges agree that PREDIS will bring in the views of the Waste Generators and the TSO College will bring in the views of the Civil Society Organisations.

Throughout the update process, opportunities to network between the EURAD Colleges and PREDIS will be taken up, possibly via a specific exchange platform and/or via position papers from the Colleges about specific SRA topics.

Towards the end of the update process a wider engagement and review of the draft deliverable is envisaged within EURAD Colleges and other external key stakeholder groups. This may include:

- The EC and their definition of scope for a future joint programme in RWM;
- The Sustainable Nuclear Energy Technology Platform (SNETP);
- The EURAD External Advisory Board (EAB);
- The European Nuclear Education Network; and
- Other external bodies (e.g., the OECD NEA and IAEA).

Final validation of the SRA update will be made by the EURAD GA and each College (following §6.2.4.3 of the CA).

5.   2022 Workplan

The compatibility between the workplan below and the milestones of the EC PREDIS project (which will bring an input to the EURAD SRA update) has been verified during a dedicated workshop between EURAD and PREDIS.

Activities & Milestones	2021		2022												2023	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
M1: Agree Work Plan + Finalise D1.8																
Agree timeline of key activities, milestones + meetings for the SRA Update (Bureau Mtg 20/10/21)	■															
First exchange on examples + ideas of new classification scheme	■															
Workshop #2 (with PREDIS, 16th Nov) to fix the timeline and exchange on first examples and ideas about classification.	■															
Finalise and circulate D1.8 to Colleges for approval (approval in principle at GA5 thus no approval needed at GA6, only a dissemination)		■	■													
M2: Establish Revised Classification Scheme																
Continue the development of ideas and examples of how different schemes could be applied (EURAD + PREDIS)		■														
Workshop #3 to agree preferred approach (Host side of the IGD-TP meeting and share outcome at GA6 Meeting)			■	■												
Establish a test case on small section of the existing SRA to illustrate the approach				■												
College and EAB Feeback about testcase (via Bureau)				■												
M3: Revise existing SRA content to new structure (Updated SRA V1.1)																
version using the existing SRA content & the EURAD Roadmap.						■	■									
Check with end users if new structure + classification works (PMO / WPs / Bureau / PREDIS)						■	■									
Workshop #4 for feedback about these checks and exchange about how KM priorities are presented (EURAD + PREDIS).							■									
Issue revised existing SRA with new classification scheme to Colleges + PREDIS								■								
M4: Screen additions from College SRAs + KM WPs (Updated SRA V1.2)																
Request College & PREDIS position papers to obtain support for which content to stay + new items								■	■							
Workshop #5 before GA7 with Bureau, EAB, additional College Representatives & PREDIS to exchange on position papers and define a way forward.										■	■					
Prepare revised SRA based on workshop results and issue to workshop participants												■				
M5: Finalise SRA V2.0																
Review and Approval by Colleges + PREDIS + GA														■	■	
Wider engagement and Review of draft EURAD SRA II															■	
Prepare EURAD SRA V2.0 for Publication (GA#8 Feb 2023)																■
PREDIS Milestone 2.4 Updated draft SRA, Month 30 (Feb 2023), account for EUG priorities																■

■	Workshops about SRA
■	College Position Papers
■	Predis Key Dates
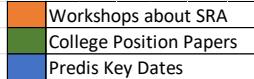
6.   Conclusions

The SRA update process has been developed by the EURAD Bureau, utilising consultation with each College to bring in the views and perspectives of the WMOs, RE's and TSOs. Following approval by the GA5 (plus any requested modification) in September 2021, a work plan has been established and issued to EURAD Colleges for final approval. The compatibility of this workplan with the milestones of the EC PREDIS project (which will bring an input to the EURAD SRA update) has been verified during a dedicated workshop between EURAD and PREDIS. Work will commence in early 2022.

Appendix A. SRA Update Process: Summary of Workshop

Date: 11th June 2021

Workshop Agenda:

1. Introduction		
13.00-13.10 (CET)	- Objectives of the SRA Update Process - Bureau's forewords	Valéry Detilleux (Bureau)
13.10-14.00 (CET)	- Presentation by each College on important messages / Q&A for clarifications (10+5 mins each)	Representative from each College (TBD)
2. Compilation of key commonalities and diverging views		
14.00-14.30 (CET)	- Summary presentation	Tara Beattie (PMO)
3. Discussion on diverging views		
14.35-15.30 (CET)	- Facilitated session to discuss the different views of the Colleges and find a consensus way forward	Piet Zuidema (CSOff)
4. Next steps / readiness for GA (September) proposal		
15.30-16.00 (CET)	- Output from today - Interface with the Colleges during the implementation of the process - AOB	Valéry Detilleux (Bureau)

Papers & Presentations:

Workshop presentations: https://service.projectplace.com/pp/pp.cgi/r531160652
Letter to the Colleges: https://service.projectplace.com/pp/pp.cgi/r285279085
College position papers:

- WMO: https://service.projectplace.com/pp/pp.cgi/r235609914
- TSO: https://service.projectplace.com/pp/pp.cgi/r235597901
- RE: https://service.projectplace.com/pp/pp.cgi/r235606622

Workshop Objective: To establish a mutual understanding of the views of the different Colleges and find a consensus on how to progress the SRA update.

Attendees: Dirk BOSBACH (Bureau / EURAD Science), Stéphan SCHUMACHER (Bureau / IGD-TP), Valéry DETILLEUX (Bureau / SITEX), Tara BEATTIE (PMO), Louise THEODON (Coordinator), Piet ZUIDEMA (CSOff), Rob WINSLEY (PMO), Maarten VAN GEET (IGD-TP), Patrik VIDSTRAND (Bureau / IGD-TP), Sergey CHURAKOV (EURAD Science), Christophe BRUGGEMAN (Bureau / EURAD Science), Marcus ALTMAIER (EURAD Science), Christophe DEBAYLE (SITEX).

Key Outcomes:

1. Focus on a simple update of the existing SRA with modification of the High/Medium/Low prioritisation towards a new classification scheme based on drivers to better communicate why the RD&D, SS or KM activity is needed.

2. Ensure there is adequate resource and that the update process is efficient.

3. Avoid duplication with other EURAD documents, most important is to align with the revised Roadmap and exclude any form of implementation planning (e.g., describing how a need could be addressed – as this is the role of the implementation plan and future definition of work packages).

4. Consider a long-term (10-year) time horizon.

5. Major inputs will be each of the revised College SRA's (which will all be available by early 2022) and the PREDIS SRA. These will be used to identify any new or emerging needs of common interest that are suitable for joint programming.

6. KM priorities which have been established by the EURAD KM WPs should be captured.

7. Strategic Studies on topics disconnected from radioactive waste management RD&D needs should not be included.

8. Education should continue to be excluded, but training and mobility scope will be retained.

9. Pure social science research should not be included, but topics where both social and technical aspects associated with radioactive waste management can be investigated in a combined matter will be retained.

10. Cooperate with PREDIS to avoid duplication of scope and ensure the SRA satisfies the strategy for the future EC call for a Joint Programme on RWM.